6.0 PROJECT SPECIFIC REQUIREMENTS FORT CAMPBELL, KY *<VER>*(REV 3.1 –15 DEC 2011)*</VER>*

6.1. GENERAL

The requirements of this paragraph augment the requirements indicated in Paragraphs 3 through 5.

6.2. APPROVED DEVIATIONS

6.2.1 The following are approved deviations from the requirements stated in Paragraphs 3 through 5 that only apply to this project.

6.2.1.1. DELETED

6.2.2 Building Automation System

Perform all necessary actions needed to fully integrate the building control system to the FMCS. The following requirements supersede paragraphs 5.8.3.7 and 5.8.3.9.

6.2.2.1 Meter all utilities and include the cost in the contract price.

(a) Provide and install water meter(s). Coordinate meter purchase, location, and installation with the Privatized Utility, CH2MHill.

(b) Provide and install gas meter(s). Coordinate meter purchase and installation from Clarksville Gas and Water. CG&W shall install and program the wireless transmitter on each meter (Also include this cost in the contract price.)

(c) Provide and install wireless electric meter(s) compatible with existing Aclara Data Collection Units. Meters shall be the Aclara Star Network MTU wireless electric meters or an approved equal that functions with the existing system. Provide a working meter including programming of the unit for operation with dedicated server.

6.2.2.2 The building automation system (BAS) controls in the facilities under this contract will be integrated to and become part of the Facility Management and Control System (FMCS). Provide Java Application Control Engines (JACE), version R2, within each building or facility. The JACE (version R2) shall connect the BAS in the building or buildings to the FMCS via Fort Campbell's wide area network.

6.2.2.3 Access to the BAS shall be available locally in each building, and remotely from personal computers residing on the Fort Campbell network. Accomplish access through standard Web browsers, via the Internet and the Fort Campbell network.

6.2.2.4 Each JACE shall communicate with the BAS including the LonMark/LonTalk controllers and other open systems and devices provided in the building. The FMCS is based on the Niagara Framework, a Java-based framework developed by Tridium. Niagara provides an open automation infrastructure that integrates diverse systems and devices regardless of manufacturer into a unified platform that can be easily managed in real time over the Internet using a standard Web browser.

6.2.2.5 The JACE shall serve as the interface between the BAS and the FMCS. The JACE may perform BAS data manager functions such as time schedules for equipment, trend logging, and alarm processing and alarm handling functions. However, the JACE shall not perform process control. Process control shall be handled by the Application Specific Controllers and Programmable Controllers included in the BAS.

6.2.2.6 Provide graphics for each piece of controlled HVAC equipment and other equipment. The graphics shall include the building floor plan with links to mechanical rooms and all controlled equipment. As a minimum, the graphics shall show the equipment modes, commonly adjusted setpoints, sensed variables, output commands, and actuator positions for each piece of controlled equipment. The graphics shall be available locally using a laptop service tool, or remotely as described above. Demonstrate the graphic interface and show that all sensed

values are accurate, that dynamic screen links work properly, that set points can be changed remotely, and that any input or output variable can be trend logged and graphed. Additionally, perform a JACE failure test using an out-of-the-box test JACE furnished by Fort Campbell. The test JACE will be void of any programming. Demonstrate that the program and database required to make the test JACE operate can be successfully loaded from a service lap top tool, and that the test JACE then operates and functions correctly as a replacement JACE.

6.2.2.7 Provide non-expiring licenses for all controllers and software and which require licensing to Fort Campbell.

6.2.2.8 The graphics shall be similar to the existing graphics used on the Fort Campbell Facility Management and Control System. Sample FMCS graphic screens are included in the applicable Appendix. The first graphic resides on the server in building 865. Modify this graphic to add the newly connected building or buildings to the graphic.

6.2.2.8 Green light means no building alarms.

6.2.2.10 Red means building alarms exist.

6.2.2.11 Yellow means the building is not communicating.

6.3. SITE PLANNING AND DESIGN

6.3.1. General:

«SITE_PLANNING»

Comment [JTH1]: 6.3.1. NOTE TO SPECIFIER: Indicate any site constraints (blast zones, historic zones, etc.) Include site specific functional/operational site planning for all facility types, etc.

6.3.2. Site Structures and Amenities

6.3.2.1 Refer to Appendix J, Site Plan for dumpster location.

6.3.2.2 Provide visual screens for dumpster and mechanical equipment in accordance with ATFP requirements. Enclosures shall match the building's architectural theme and finish material.

(a) Dumpsters Enclosures. Dumpster Enclosures shall be 3-sided and sized to accommodate two dumpsters, each measuring 6 ½-feet x 6 ½-feet.(reference Paragraph 5.1.2.1. for additional information). Provide a concrete loading apron for the first 15-feet in front of the dumpster pad to accommodate loading of dumpsters and avoid rutting on the pavement. Enclosures shall be at least 18-feet wide with the swinging doors mounted on the front of the enclosure, not the inside of the enclosure. If the doors are mounted on the inside wall they will need to be at least 19-feet wide. Swinging doors, gate posts, and bollards shall not reduce the clear opening width.

(b) Exterior Mechanical Equipment. Enclosures for chillers and cooling towers shall not be more than ten feet high.

6.3.3. Site Functional Requirements:

6.3.3.1. Stormwater Management (SWM) Systems.

(a) Design and construct the stormwater drainage system in accordance with Federal Aviation Administration Advisory Circular FAA AC 150-5320-5C, Surface Drainage Design; Federal Highway Administration Publication No. FHWA-NHI-01-021, Hydraulic Engineering Circular No. 22, Second Edition, URBA DRAINAGE DESIGN MANUAL. Base design of drainage structures on a 10-year storm frequency. Design of the storm drainage system shall incorporate the principles of Low Impact Development (LID), as detailed in UFC 3-210-10 DESIGN: LOW IMPACT DEVELOPMENT MANUAL. The design shall maintain or restore to the maximum extent technically feasible, the predevelopment hydrology of the site with regard to temperature, rate, volume, and duration of flow in accordance with Section 438 of the Energy Independence and Security Act of 2007 (EISA 2007). Design the stormwater management facilities in accordance with DoD Policy Memorandum, Office of the Secretary of Defense, DoD Implementation of Storm Water Requirements under Section 438 of the Energy Independence and Security Act (EISA), 19 Jan 10.

(b) For volume control, an on-site storm water retention/detention system shall be required. Design criteria for storage facilities shall follow the “Fort Campbell Policy for Storm Water Erosion and Sediment Control at Construction Sites" developed by Fort Campbell DPW, as posted on the Fort Campbell Environmental web site (http://www.campbell.army.mil/envdiv/). Take special note of the Precipitation Frequency Estimates and the required Pre-developed curve number included in the policy.

(c) Development projects over 5000 square feet are required by the 2007 Energy Independence and Security Act, Section 438, to implement strategies to “maintain or restore, to the maximum extent feasible, the predevelopment hydrology of the property with regard to temperature, rate, volume, and or duration of flow.” See the USEPA technical guidance at http://www.epa.gov/oaintrnt/documents/epa_swm_guidance.pdf. In addition, Fort Campbell has a water quality treatment standard for the first flush of 1.1 inches of rainfall.

6.3.3.2. Erosion and Sediment Control

(a) Fort Campbell Environmental Division of Public Works oversees the Stormwater Sediment and Erosion Control Management Plan for the Post. The point of contact for Fort Campbell Environmental Divisions is Dan Etson, (270) 798-8794, dan.etson@us.army.mil.

(b) Fort Campbell is currently implementing compliance with new five year Phass II MS4 general permits issued by Kentucky and Tennessee in 2010. In order to comply with the provisions of the state and EPA NPDES permits, all construction projects, including those located in the Clarksville Base Development, must comply with the provisions of the "Fort Campbell Policy for Storm Water Erosion and Sediment Control at Construction Sites" developed by Fort Campbell DPW, as posted on the Fort Campbell Environmental web site (http://www.campbell.army.mil/envdiv/). These provisions include the Contractor’s preparation of a project specific Storm Water Pollution Prevention Plan (SWPPP), the Contractor signing onto Fort Campbell’s general permit Notice to Intent, and enforcement of the plan components. Projects located in the Clarksville Base Development are covered under an Individual NPDES Permit for Construction Activities. The Contractor will be signing onto Fort Campbell’s permit. Aggressive EPSC measures are critical. Fort Campbell samples project storm water outfalls using a third party EPSC inspector. See 6.15.2 for additional information.

(c) Be aware of any Wetlands, Sinkholes, or Class V Injection Well that may be associated with this project. Do not discharge any storm water off the installation on to private land owners. Install and maintain all erosion and sediment control devices in accordance with the Fort Campbell Policy for Storm Water Erosion and Sediment Control at Construction Sites.

6.3.3.3. Vehicular Circulation.

(a) Emergency Vehicle Access. The ground access surface shall accommodate all Fort Campbell Fire Department Trucks and Emergency Vehicles in accordance with all applicable criteria. Provide drive through circulation that minimizes the need for turning trucks around within the site boundary to the maximum extent possible.

(b) Provide ladder vehicle access as a minimum to two sides of each facility and a minimum of three sides of all sleeping quarters to accommodate the Fire Department’s trucks and emergency vehicles.

(c) Design for the Fort Campbell Fire Department's heaviest vehicle, 84,000 lbs. The ladder truck turning radius is 46’-0”. Fire lanes shall have a minimum 20’-0” clear width. Grass paver type products may be used for emergency vehicle access if soils engineering studies indicate ground can support such structures. Verify requirements with FTC Fire Department and ensure that the base is prepared to completely support the required loads.

«VEHICULAR_CIRCULATION»

Comment [JTH2]: 6.3.3.3. NOTE TO SPECIFIER: This subparagraph is for vehicular circulation. Examples are POV and organizational vehicle site access and circulation requirements, tracked vehicle tank trail connection point. Paragraph 3 for EPDF refers to Paragraph 6 for parking requirements. If the project includes an EPDF, coordinate with the installation on hours of operation, availability of shared parking and use of buses to determined project parking requirement.)

6.4. SITE ENGINEERING

6.4.1. Existing Topographical Conditions

The Government has provided a three dimensional digital topographic and utility survey. Bring any discrepancies which are found in the Government furnished survey to the immediate attention of the Government for clarification. The survey provides control points based on state plane coordinates and identifies horizontal and vertical datums.

«SITE_EXIST_TOPO»

6.4.2. Existing Geotechnical conditions: See Appendix A for a preliminary geotechnical report.

6.4.2.1. Geotechnical Engineer. A qualified independent testing agency shall observe and test subgrade suitability (by proof rolling operations), fill placement and compaction operations on a full time basis as directed by the Contractor's project Geotechnical Engineer.

6.4.3. Fire Flow Tests See Appendix D for historical fire flow test results. Use test results for proposal purposes and estimating the basis of design for fire flow and domestic water supply and for preparing the proposal cost estimate. After award, verify test results. Coordinate with Contracting Officer and CH2MHill to perform flow test on the water system at the anticipated points of connection in order to provide up- to -date flow information during the design phase. Point of contact for CH2M Hill is Chris Semler, (931) 431-2015. If test results indicates that the available flow or pressure has deteriorated from the data provided in Appendix D, bring this to the attention of the Government.

«SITE_FIREFLOW»

6.4.4. Pavement Engineering and Traffic Estimates:

6.4.4.1 Pavement Design. Minimum flexible pavement sections shall consist of 3.5 inches of asphalt (1.5 inches of surface course and 2 inches of base course) and 8 inches of aggregate subbase and/or base. Minimum rigid pavement section shall consist of 6 inches of concrete and 8 inches of aggregate subbase and/or base. The minimum subbase/base can be neglected if the subgrade has a CBR greater than 30.

(a) Do not use Reclaimed Asphalt Pavement (RAP) in the asphalt surface wearing course.

«SITE_PAVEMENT_ENGINEERING_AND_TRAFFIC»

6.4.5. Traffic Signage and Pavement Markings

«SITE_TRAFFIC_SIGNAGE»

6.4.6. Base Utility Information

6.4.6.1. Utilities

(a) The Installation's DPW supervises infrastructure and utilities and in some cases they are owned and operated by private entities. Obtain and verify actual utility locations by calling Tennessee One-Call (1-800-351-1111) prior to start of any excavation work. General location of existing utility services such as potable water, sanitary sewer, electric, natural gas, and communications are located:

«SITE_BASE»

(b) Install all utility lines underground. Avoid installing utility lines under pavement to the maximum extent possible. Utility lines that must cross under roadways shall be jack and bore or directional drill and sleeve including water, natural gas, electric, communications and cable TV lines.

(c) Do not construct buildings over or within 10 feet of any new or existing utility lines, to include Water and Wastewater, Storm Sewer, Sanitary Sewerage, Gas, and COMM. Coordinate with respective provider to determine final routing of lines, and locations of connections points.

6.4.6.2. Water Distribution and Sanitary Sewerage System:

Comment [JTH3]: 6.4.1. NOTE TO SPECIFIER: Edit Existing Conditions paragraph based on availability of topographic survey. Provide survey data. Do not add any references, such as UFC's, ETL's, etc.

Comment [JTH4]: .4.3. NOTE TO SPECIFIER: Provide results of Fire Flow Tests in Appendix D so that the contractor can estimate and price pipe sizes or determine if additional measures, such as fire pumps are necessary. This will reduce contingencies in the proposal. **DO NOT** require that the contractor take these tests. This is a government information requirement. If the government is providing new water mains under another contract, provide the expected design flow and pressure capability/availability under that contract. The point is to provide the offeror a basis of design. If the actual conditions vary after completion of the other contract, that will provide a starting point to base any needed changes in this design on.

Comment [JTH5]: NOTE TO SPECIFIER: Describe the performance requirements for roadways, parking and other pavements, including classification, vehicle types, loadings, design volume, climatic conditions, frost penetration Zones, etc.

Comment [JTH6]: 6.4.5. NOTE TO SPECIFIER: Describe installation traffic signage standards.

Comment [JTH7]: 6.4.6.1. NOTE TO SPECIFIER: Input where existing services such as potable water, sanitary sewer, electric, natural gas, and COMM are all located.

(a) CH2M Hill is the owner and operator of the Fort Campbell water distribution sanitary sewerage system. Design and construct the new distribution system and new sewer lines, required building service and sewer lines, and any modifications to the existing distribution lines and main sewers in accordance with the latest edition of CH2M Hill's "Fort Campbell Water and Wastewater Design Guide and Construction Standards". Coordinate with CH2M Hill to determine the locations of connections to the existing water distribution system and final routing of the water distribution lines and service lines including the locations of the distribution mains, and the locations of fire hydrants and post indicator valves. In addition coordinate the routing of the new or relocated main sanitary sewer lines, the routing and locations of the new building sewer lines, the locations of connection points to the main sewer system, the locations of existing sewer lines to be removed, the locations of new and existing manholes, the locations of lift stations and the location of force mains. Submit to CH2M Hill a completed "Application for Water and Wastewater Connection" form and the associated application fee. Include adequate time in the proposal for the design of the water system, the acquisition of State permits, and the construction of the water lines. Point of contact for CH2M Hill at Fort Campbell is Chris Semler, (931) 431-2015. Alternate contact for CH2M HILL is Robert Neath (314) 421-0313.

(b) Contact CH2M HILL representative in a timely manner to coordinate water and sewer service to the facilities being constructed or renovated under this contract. No water and wastewater design or construction may begin without the execution of a permit issued by CH2M HILL. All new construction must satisfy the terms of the permitting process before water or wastewater services will be activated. Comply with all policies, procedures, standards, specifications and details required by CH2M HILL governing the design, construction and supply of water and sewer services required under this contract.

(c) After award and during the design phase of the project, coordinate with CH2M Hill and submit preliminary drawings to CH2M Hill for review. The drawings shall show all new distribution lines, fire hydrants, new service lines, and any modifications to existing distribution system. In addition, show all new main and building sewer lines, manholes, pumping stations, force mains, and any modifications to existing sewer lines, tie-in points, and projected sewer flowrate from each building and at each manhole.

(d) Base the design of the water distribution system on the static and residual water pressure conditions as shown in Paragraph 6.4.3 Fire Flow Tests.

(e) Determine the following for each building in the project and provide this information to CH2M Hill:

- the required capacity of domestic water supply
- the domestic water service line size
- the required capacity of the fire water service line
- the fire water service line size and
- the location of the entrances to the building of the domestic water and fire water service lines.

(f) Coordinate the sequence and timing of all water line tie-ins to existing water lines with CH2M Hill. No work associated with the water system shall begin until all required permits and approvals for the water system are obtained. Existing water service lines and mains serving buildings on the site which remain occupied during construction shall remain in service, uninterrupted, until those buildings are abandoned or until the new water distribution line has been accepted by the Government.

(g) Coordinate the sequence and timing of all tie-ins to existing sewer lines with CH2M Hill. Do not begin construction of the sanitary sewer system until all required permits and approvals for the sanitary sewer system are obtained. Existing sanitary lines serving buildings on the site which remain occupied during construction shall remain in service, uninterrupted, until those buildings are abandoned.

(h) Submit the final design drawings and specifications for review and comment. Include any changes as a result of the comments in the drawings and specifications prior to the start of construction.

(i) Connect the water meter to the building Direct Digital Control in accordance with Paragraph 6.2.2.1.

(j) CH2M Hill will inspect all construction of water distribution piping and sanitary sewer piping. Point of contact for CH2M HILL at Fort Campbell is Chris Semler, (931) 431-2015. Alternate contact for CH2M HILL is Robert Neath (314) 421-0313.

(k) Field Quality Control for Sanitary Sewer Distribution System. The contracting officer and CH2M Hill will conduct field inspections and witness field tests specified. The Contractor shall perform field tests, and provide labor, equipment, and incidentals required for testing including means for water transport when water is needed. CH2M Hill will furnish water needed for field tests.

6.4.6.3. Gas Distribution System:

(a) Clarksville Gas and Water Department (CG&W) is the owner of the Fort Campbell gas distribution system. CG&W is responsible for the adequacy of design and construction of the required building service lines and modifications to any existing distribution lines. Coordinate with CG&W to determine the routing of any new or relocated gas distribution lines, the routing and locations of new and existing service lines, the locations of connection points to the main gas distribution system, the locations of existing gas distribution lines to be removed, and the locations of new valves. Coordinate directly with CG&W to obtain the cost of the design, permits, and construction of the required building service lines to the five foot line up to and including meters and regulators and any necessary modifications to the distribution lines. Include this cost in the appropriate line item in the CLIN schedule. CG&W may require the following information to determine the cost of the gas system changes: the capacity of gas required for each building; the low pressure gas service line size for the building; the location of the entrances to the buildings of the gas service lines, and locations of the gas regulators and meters. Include adequate time in the proposal for the design of the gas system and the acquisition of permits and approvals. Point of contact for CG&W at Fort Campbell is Randall Lewis, (931) 542-9600. Point of contact for CG&W pertaining to gas service line capacity, size, routing, and points of connection to the gas distribution system is Mike Young, (931) 645-7422.

(b) After award, during the design phase of the project, provide information to CG&W about the expected building gas consumption and shall coordinate with CG&W to complete the gas distribution system design.

(c) Design and installation of the gas distribution system must be in accordance with all policies, procedures, standards, specifications and details required by CG&W. Determine the following for each building in the project:

- the required capacity of gas service,
- the low pressure gas service line size, and
- the preferred location of the service entrance including the gas regulators and meters.

(d) C&W will furnish and install meters and regulators on all buildings. The Contractor shall connect the meters to the building Direct Digital Control system in accordance with paragraph 6.2.2.1. The Contractor shall be responsible for all costs incurred for the gas system installation, including meters and regulators.

(e) Do not abandon in place any gas lines.

(f) Include the following in the design plans and specifications:

- the routing of gas distribution and gas service lines outside the buildings
- the location of gas meters and regulators
- existing gas distribution and service lines to be removed

(g) Coordinate the sequence and timing of all gas line construction activities with CG&W. No work associated with the gas system shall begin until all required permits and approvals for the gas system are obtained. Include adequate time in the proposal for the design of the natural gas system and the acquisition of permits and approvals.

(h) Submit the final design drawings and specifications for review and comment, and include any changes as a result of the comments in the drawings and specifications prior to the start of construction.

6.4.6.4. Electrical:

(a) Furnish and install a meter on electric service to each building. Equip the electric meter with a pulse initiator. Connect the pulse initiator on the electric meter to the building Direct Digital Control system. Coordinate all new electrical work with Fort Campbell DPW. The points of contact are Mihir Chaudhuri at (270) 798-9725 or email mihir.chaudhuri@us.army.mil, or Robert Galbraith at (270) 798-2232 or email robert.t.galbraith@us.army.mil.

6.4.6.5. Telecommunications:

(a) Government Telephones and Data Connectivity. Furnish and construct all outside plant manholes, duct, conduit, and the required distribution cables, between underground terminal boxes and the building central communications closet for Government telephones and data connectivity. Install 3”x4” duct from the closet manhole to the facility telecommunications room. Install 4”x4” duct back along roadways were no duct exists. Toneable trace wire will be installed in at least one of the ducts in the ductbank. Install manholes at a maximum

of every 500 feet of duct. Install 4-cell fiber mesh in the duct to accommodate fiber optic cable. Duct shall be concrete encased and protected in all areas, under road surfaces, and in storm drainage area that are subject to washout, in accordance with I3A. Install duct prior to road surfacing. Coordinate with Network Enterprise Center (NEC) during the design process. The Points of contact for NEC are Greg Lantz at (270) 798-6238 or email gregory.lantz@us.army.mil.

6.4.6.6. Cable Television:

(a) Provide cable television outlets in areas as required by I3A. Design, furnish, and install all conduit, wiring and outlet boxes within the facilities. Comcast will be responsible for all the interior jacks and faceplates. Coordinate with Comcast during the design process. The Point of contact for Comcast during design and construction is Bill Goodwin at (615) 244-7462 ext. 1115646 (office) or (615) 405-5589 (cell) or email billy_goodwin@cable.comcast.com Field verify the locations of the point of service (tie point) and facility demarcation point with Comcast prior to start of work.

(b) Provide two inch conduit installed from telecommunication room to point of accessible connectivity at nearest pole with existing CATV.

6.4.7. Cut and Fill

6.4.7.1. Grading.

(a) All Fort Campbell projects should generally maintain existing topography and slopes while recognizing standard minimum and maximum gradients. There should be a balance of the quantity of cut and fill which would create a smooth transition of graded areas into the existing natural terrain. The plan should reflect selective site clearing that preserves groups of trees. Grading should manage site runoff to maintain the rate and quantity of flow to pre-development levels, or reduce site runoff where possible. Apply the principles of positive drainage to control the conditions that remove rainfall away from facilities and functions. Lawn sheet flow shall not flow over sidewalks or paved areas. Do not drain new parking areas onto existing streets and do not drain existing streets into new parking areas. Site designs should seek to minimize the disturbance of land, utilize natural drainage paths where possible, and take into account future construction in the area. Site design should also minimize the impact of construction activities on drainage and prevent loss of soils by water and wind erosion. Designs that improve on existing water quality by incorporating sustainable design principles are encouraged, and consistent with budget constraints and activity requirements. Incorporate sustainable design principles to improve existing water quality.

(b) The finished grades adjacent to the new building will be a minimum of 6 inch below finished floor except where grades are required on walk ways and entrances to buildings that are handicap accessible. Slope finish grades away from the building at 5% for the first 10 feet and then at a minim of 1% to existing or new storm drainage. Use a preferred minimum gradient or 1% in all parking areas. The maximum gradient used parallel from front to rear of a space shall be 5% and from side to side (width of the space) shall be 1-1/2%.

6.4.7.2. Historically, the potential for sinkholes does exist at Fort Campbell. The preliminary site characteristics for this particular site are located in Appendix A. Geotechnical Information.

6.4.8. Borrow Material

(a) Use only the approved borrow pit. Provide a written list of all personnel and equipment that will be located at the site during borrow operations. Immediately report to the site operational authority any evidence of unauthorized personnel or activities at the site , including unauthorized dumping of wastes, littering, and any other activities that present a potential risk to human health or the environment. Immediately report any problems with runoff and erosion controls. Maintain a daily haul record, including truck counts and estimated volume per truck load. Submit the haul record to the COR on a weekly basis.

«BORROW_MATERIAL»

Comment [JTH8]: NOTE TO SPECIFIER: DESCRIBE SOURCES OF ACCEPTABLE BORROW, OR STATE THAT NO BORROW IS AVAILABLE ON THE INSTALLATION, ETC.

6.4.9. Haul Routes and Staging Areas

(a) Use Gate 7 as the Haul Route to the construction work area. Refer to Appendix J, Borrow/Disposal Area Plan for Haul Route.

«SITE_HAUL_ROUTES»

6.4.10. Clearing and Grubbing:

«SITE_CLEAR_GRUB»

6.4.11. Landscaping:

(a) Provide landscaping in accordance with UFC 4-010-01 and the Standard Appendix I, Acceptable Plants List. Use the services of a qualified Landscape Architect, experienced in site planning and planting design. Provide a complete, integrated landscape-planting plan consisting of trees only for the overall project. The design shall reflect appropriate groupings and street tree plantings to define the open spaces. Choose tree materials on the basis of plant hardiness, climate, soil conditions, low maintenance, and quality. All selected tree and plant materials shall be easily maintained and tolerant of the specific site conditions. Incorporate sustainable design principles into the selection of plants. Plant only during periods when beneficial results can be obtained. Planting for site development within the 5-foot line shall consist of establishing groundcover (turf or other materials) consistent with adjacent landscaped areas. Additional landscaping such as ornamental planting at building entrances may be provided as a project betterment.

(b) Passive Barriers may be installed as a landscape component and consist of any combination of berms, steep banks, ditches, fences, walls, bollards, trees, and other plant materials that is located between the vehicular circulation areas and the building(s). Trees may be used as long as the spacing between branch structures and size at the time of installation would prevent vehicle intrusion. Some species will require a double row with close proximity to achieve this functionality.

(c) Maintenance during Planting Operation.

Maintain installed plants in a healthy growing condition. Begin maintenance operations immediately after each plant is installed and continue until the plant establishment period commences.

(d) Plant Establishment Period.

On completion of the last day of the planting operation, the plant establishment period for maintaining installed plants in a healthy growing condition shall commence and shall be in effect for the remaining contract time period not to exceed 12 months. When the planting operation extends over more than one season or there is a variance to the planting times, the plant establishment periods shall be established for the work completed.

(e) Maintenance during Establishment Period.

The maintenance of plants shall include straightening plants, tightening stakes and guying material, repairing tree wrap, protecting plant areas from erosion, maintaining erosion material, supplementing mulch, accomplishing wound dressing, removing dead or broken tip growth by pruning, maintaining edging of beds, checking for girdling of plants and maintaining plant labels, watering, weeding, removing and replacing unhealthy plants. If used, irrigation systems shall be for plant establishment only. Remove at the end of this period. Ft Campbell will not furnish potable water for irrigation.

(f) Unhealthy Tree.

A tree shall be considered unhealthy or dead when the main leader has died back, or 25 percent of the crown is dead. Determine the cause for an unhealthy plant. Unhealthy or dead plants shall be removed immediately and shall be replaced as soon as seasonal conditions permit in accordance with the following warranty paragraph.

(g) Warranty.

Furnished plants shall be guaranteed for a period of 12 months beginning on the date of inspection by the Contracting Office to commence the plant establishment period, against defects including death and unsatisfactory growth, lack of adequate maintenance, neglect, or by weather conditions unusual for the warranty period.

6.4.12. Turf:

(a) Seed.

State approved seed of the latest season's crop shall be provided in the original sealed packages bearing the producer's guaranteed analysis for percentages of mixture, purity, germination, hard seed, weed seed content, and inert material. Labels shall be in conformance with applicable State seed laws. Seed mixtures shall be proportioned by weight. Weed seed shall not exceed one percent by weight of the total mixture.

(b) Sod.

State approved sod shall be provided as classified by applicable State laws. Each individual sod section shall be of a size to permit rolling and lifting without breaking. The sod shall be relatively free of thatch, diseases, nematodes, soil-borne insects, weeds or undesirable plants, stones larger than one (1) inches in any dimension, woody plant roots, and other material detrimental to a healthy stand of turf. Sod that has become dry, moldy, or yellow from heating, or has irregular shaped pieces of sod and torn or uneven ends shall be rejected. Sod shall be machine cut to a uniform thickness of 1-1/4 inches within a tolerance of 1/4 inch excluding top growth and thatch. The limitation of time between harvesting and placing sod shall be 36 hours.

(c) Sprig Quality.

The cultivar shall be provided as healthy living stems, stolons, or rhizomes with attached roots, including two (2) or three (3) nodes, and shall be from four (4) to (6) inches long, without adhering soil. Sprigs shall be provided which have been grown under climatic conditions similar to those in the locality of the project. Sprigs shall be obtained from heavy and dense sod, free from weeds or other material detrimental to a healthy stand of turf. Sprigs that have been exposed to heat or excessive drying shall be rejected. The time limitation between harvesting and placing sprigs shall be 24 hours.

(d) Temporary Turf Cover.

When there are contract delays in the turfing operation or a quick cover is required to prevent erosion, the areas designated for turf shall be seeded with a temporary seed. When no other turfing materials have been applied, the quantity of one-half of the required soil amendments shall be applied and the area tilled.

(e) Final Turf.

The turf shall be installed during appropriate planting times and conditions recommended by the trade for the type and variety of turf specified. The turf operations shall be performed only during periods when beneficial results can be obtained. Drainage patterns shall be maintained. The turf shall be installed by using the methods as recommended by the trade for the type and variety of turf specified. Immediately after turfing, the area shall be protected against traffic or other use by erecting barricades and providing signage as required. The turf establishment period for establishing a healthy stand of turf shall begin on the first day of work under the turfing contract and shall end three (3) months after the last day of the turfing operation. An unsatisfactory stand of turf shall be repaired as soon as turfing conditions permit.

6.4.12.1. Satisfactory Stand of Turf:

(a) Seeded Lawn & Field Area.

A satisfactory stand of turf from the seeding operation is defined as a minimum of 150 grass plants per square foot. The total bare spots shall not exceed 2 percent of the total seeded area.

(b) Sodded Area.

A satisfactory stand of turf from the sodding operation is defined as living sod uniform in color and texture. Bare spots shall be no larger than two (2) inches square. Sod shall be placed in all ditch flow lines and slopes, around each building, and a 10 foot strip adjacent to all structures such as curbs, sidewalks, roads, catch basins, etc.

(c) Sprigged Area.

A satisfactory stand of turf from the sprigging operation is defined as a minimum of 20 sprigs per square meter (2 sprigs per square foot). Bare spots shall be no larger than 9 inches square. The total bare spots shall not exceed two (2) percent of the total sprigged area.

6.4.12.2. Maintenance During Establishment Period:

(a) The maintenance of the turfed areas shall include eradicating weeds, eradicating insects and diseases, protecting embankments and ditches from erosion, maintaining erosion control materials and mulch, protecting turf areas from traffic, mowing, watering, post-fertilization, and replacing unsatisfactory turf areas. If used, irrigation systems shall be for plant establishment only. Remove at the end of this period. Ft Campbell will not furnish potable water for irrigation.

6.5. ARCHITECTURE

6.5.1. General: To the maximum extent possible within the contract cost limitation, the buildings shall conform to the look and feel of the architectural style and shall use the same colors as adjacent facilities as expressed herein ***<IMCOM_APPROVED>***and shall conform with the Fort's Campbell Real Property Master Plan***</IMCOM_APPROVED>***. The Government will evaluate the extent to which the proposal is compatible with the architectural theme expressed in the RFP during the contract or task order competition. The first priority in order of importance is that the design provides comparable building mass, size, height, and configuration compared to the architectural theme expressed herein. The second priority is that design is providing compatible exterior skin appearance based upon façade, architectural character (period or style), exterior detailing, matching nearby and installation material/color pallets, as described herein.

6.5.2. **Design**

6.5.2.1. Appendix F is provided "For Information Only", to establish the desired site and architectural themes for the area. Appendix F identifies the desired project look and feel based on **Fort Campbell's** Installation Architectural Theme from existing and proposed adjacent building forms; i.e. building exterior skin, roof lines, delineation of entrances, proportions of fenestration in relation to elevations, shade and shadow effects, materials, textures, exterior color schemes, and organizational layout.

6.5.2.2. The design should address Fort Campbell's identified preferences. Implement these preferences considering the following:

(a) Achievable within the Construction Contract Cost Limitation (CCL)

(b) Meets Milestones within Maximum Performance Duration.

(c) Achieves Full Scope indentified in this Solicitation

(d) Best Life-Cycle Cost Design

(e) Meets the Specified Sustainable Design and LEED requirements.

(f) Complies with Energy Conservation Requirements Specified in this RFP.

6.5.2.3. Priority #1. Visual Compatibility: Facility Massing (Size, Height, Spacing, Architectural Theme, etc.) Exterior Aesthetic Considerations: The buildings massing, exterior functional aesthetics, and character shall create a comprehensive and harmonious blend of design features that are sympathetic to the style and context of the Installation. The Installation's intent for this area is:

«THEME_DESCRIPTION»

Comment [JTH9]: 6.5.2.3. NOTE TO SPECIFIER: See instructions under 6.5. Architecture, Design-Theme tab of the RFP Wizard for instructions.

6.5.2.4. Priority #2. Architectural Compatibility: Exterior Design Elements (Materials, Style, Construction Details, etc.) Roofs, Exterior Skin, and Windows & Door Fenestrations should promote a visually appealing compatibility with the desired character while not sacrificing the integrity and technical competency of building systems.

6.5.2.5. See Appendix F for exterior colors that apply to Architectural character at Fort Campbell. The manufacturers and materials referenced are intended to establish color only, and are not intended to limit manufacturers and material selections.

6.5.2.6. Additional architectural requirements:

(a) Install fall protection anchor points on all roofs with a slope greater than 2:12

(b) Exterior Skin. If the Offerors proposal consists of brick, split faced or scored CMU, which will be exposed to weathering, provide efflorescence testing and prevention measures. Schedule tests far enough in advance of starting masonry work to permit retesting. Apply water repellant primer and stain to all exterior architectural CMU walls after completion of exterior work and when the masonry is not subject to damage by construction activities.

(c) Hardware. Provide a removable Small Format Interchangeable Core (SFIC) "*I/C - 7 pin Insta-Key*" integrated master keying system for all doors. SFIC's shall be compatible with the existing "*I/C - 7 pin Insta- Key*" system used at Fort Campbell. Combination locks used in secured areas shall be Mass Hamilton X09 type or LKM 7000 by Lockmasters Inc with an S&G 2740-100; Do not use the CDX-09. Electric locks shall be stand alone Best BASIS "G" system with encoders and Kiosk. Coordinate installation with the DPW Locksmith Shop. Point of contact is Bob Ayers, (270) 798-3581 (office).

(d) Telecommunication Room and Electrical Room locks shall be *Insta-Key* cored and compatible with the Mortise lock - Schlage Model CL5594-MGK-SFS-626-ATR or Cylindrical Lock - Schlage Model CL5196-MGK-SFS-626-ELB-ATR.

(e) Mechanical Rooms shall have an exterior building access only for maintenance personnel and accessible to maintenance vehicles. Provide a hasp and DPW approved padlock in addition to standard *Insta-Key* core.

(f) Telecommunications Rooms shall have an interior access point unless otherwise specified or indicated. In the case of exterior access, install equipment cabinet(s) instead of racks in the Telecommunications Rooms. Cabinet(s) shall be dust rated with glass front door and accessible rear panel.

(g) «ARCHITECTURE»

Comment [sdn10]: 6.5.2.5. NOTE TO SPECIFIER: Include additional requirement if applicable, start with (h).

6.5.3. ***<UEPH>***Not Used***</UEPH><UEPH_NOT>***Programmable Electronic Key Card Access Systems:

«PROGRAMMABLE_KEY_CARD»***</UEPH_NOT>***

Comment [JTH11]: NOTE TO SPECIFIER: For non-UEPH type facilities only. If the installation has information on brand names of existing key card access system, identify here and coordinate with paragraph 3. For UEPH type Facilities NOT USED

6.5.4. INTERIOR DESIGN

6.5.4.1. Interior building signage requirements:

«INTERIOR_SIGNAGE»

Comment [JTH12]: 6.5.4.1. NOTE TO SPECIFIER: Describe the interior building signage requirements

6.5.4.2. Interior Design Considerations:

(a) Interior Partitions and Walls.

The use of wall coverings that do not breathe such as vinyl wall coverings is not permitted on the interior face of exterior walls due to the tendency for mold to develop.

(b) Interior Glass and Glazing: Coordinate the arrangement of fenestrations with the proposed furniture layout.

6.5.4.3. Furniture, Fixtures and Equipment Design Development:

(a) During design development, coordinate the location of furniture so that it does not interfere with other building systems (i.e. electrical and communication outlets, thermostats, etc.).

(b) Coordinate with USACE and DPW during design development. Point of contact for DPW, Master Plans is Sharon (Davis) Presley at (270) 956-2926 or email sharron.davis@us.army.mil.

6.6. STRUCTURAL DESIGN

6.6.1. Site Specific Loading Requirements

6.6.1.1 Structural Loading. Design building structures for the following types of minimum site specific loads per most recent versions of ASCE-7 and IBC.

6.6.1.1. Roof Live Load – 20 psf

6.6.1.2. Snow Load – 15 psf (pg, ground snow load)

6.6.1.3. Wind Load – 90 mph, 3-second gust

6.6.1.4. Seismic Criteria - As determined from a site specific geotechnical investigation, but not less than the following values:

Ss = 0.59g
S1 = 0.19g

And not more than the following values:

Ss= 0.74g
S1= 0.22g

6.6.2 The structural design shall meet all of the seismic requirements of the Applicable Codes and Standards including a continuous load path and interconnection, consideration of plan irregularities and effects due to inherent and accidental torsion, and consideration of building expansion joints. Seismic design also includes the bracing of various systems, piping, hangars, etc.

6.6.3. Note that areas of Fort Campbell contain Karst geology and are subject to potential sinkholes.

6.6.4. The structural system shall be compatible with building use. For example, do not locate columns in rooms requiring visibility or open space, such as entries, common areas, etc.

6.6.5. Extend bearing portions of substructure to levels below the frost line. Frost penetration is 22 inches below grade.

6.6.6. Treat subgrades under all facility foundations to resist subterranean and other wood destroying insects known to exist in the vicinity of the site. Treat in accordance with the environmental criteria referenced in this document.

6.6.7. Radon Mitigation: Ensure that the building prevents/mitigates the accumulation of radon gas. Fort Campbell requires the installation of radon mitigation features be included in all new construction as shown in the applicable Appendix of this document. The design and construction of foundation walls, slabs, and crawl spaces shall include provisions for the reduction of radon entry and facilitate its removal. Radon exhaust vents shall extend through the roof. Test exhaust vents prior to occupany. If radon is realized in amounts past the acceptable levels, exhaust fans will be required. An equitable adjustment (credit or increase, as appropriate) will be provided pursuant the contract Changes clause. For additional information, contact the TSCA Program Manager of the Fort Campbell Environmental Division at (270) 798-9604.

6.6.8. Water Barrier: A capillary water barrier is required under all interior slabs-on-grade. The capillary water barrier shall, as a minimum, prevent the mitigation of termites, radon, and moisture.

6.6.9. Equipment Pads: Elevate interior floor or slab-on-grade mounted equipment on minimum 4 inch thick concrete pads to prevent accumulation of water and metal corrosion. Elevate exterior on-grade mounted equipment on minimum 6 inch thick concrete pads. Turn down perimeter of exterior pads to a level below the frost line.

6.7. THERMAL PERFORMANCE

There are no additional requirements other than those previously stated/referenced.

6.8. PLUMBING

There are no additional requirements other than those previously stated/referenced.

6.9. SITE ELECTRICAL AND TELECOMMUNICATIONS SYSTEMS

6.9.1. Primary Electrical Distribution.

The point of connection for the primary feed to the site shall be

«SITE_ELECTRICAL»

Comment [JTH13]: 6.9.1. NOTE TO SPECIFIER: Describe the point of connection for the primary feed to the site below.

(a) Provide primary ductbank with one spare conduit. Ductbank shall be concrete encased.

(b) Primary conductors shall be copper. Aluminum is not permitted.

(c) Provide load-break cutouts and arrestors at point of connections for underground primary services. For overhead distribution tap lines, provide load break cutouts.

(d) Coordinate connections with Fort Campbell DPW, Electrical Utility Section.

6.9.2. Underground Secondary Distribution System.

The system shall consist of direct buried conduit and copper conductors.

6.9.3. Transformers.

Transformers shall be pad-mounted type, 12.47 kV delta primary and secondary voltage as appropriate for load(s) to be served. Service transformers, for all 15kV and below, 3-phase underground fed installations, shall be of the pad-mounted type. Transfomers shall contain FR3 dielectic fluid. The high-voltage compartment shall be dead-front construction. Primary switching and protective devices shall include loadbreak switching, fuse protection, medium-voltage separable load-break connectors, universal bushing wells and inserts or integral one piece bushings and surge arresters. The nameplate rating for the transformer shall not be less than 110 percent of the KVA demand load calculated for the transformer. Provide copper windings, not aluminum. The enclosure shall include a hasp and pad lock.

6.9.4. Street and Area Lighting.

6.9.4.1 Provide lighting for the project site, at existing and new roadway intersections, and at intervals not exceeding 60.9 m (200 ft) between intersections. Provide area lighting at intervals not exceeding 60.9 m (200 ft) along area walkways not otherwise illuminated; and at all steps. Exterior lighting (parking lot, street, building, etc) shall be LED, Induction, LEP (Light Emitting Plasma), or energy saving technology. "Dark Sky" Lighting is a mandatory requirement for the numerous flight paths over the installation to insure the safety of the flight crews and equipment. Parking lot and security lighting will be provided at a maintained level of 0.5 to 1.0 footcandles and shall have a uniformity ratio, maximum to minimum, of 20:1 or less. All building entrances will be illuminated to 10 footcandles. Parking lot and walkway lighting shall be individually fused and mounted on aluminum poles. Install fuses for the pole-mounted fixtures in the pole base.Control shall be by photocell. This control shall be by means of one photocell per pole. Install a programmable timer with manual switch override in the Mechanical Room.

(a) Coordinate lighting control requirements for all exterior lighting systems with the Customer,subject to the Contracting Officer's approval, to include the sequencing of the programmable timer.

(b) Light poles installed in the parking lot shall be installed on raised concrete foundations for protection ~~of~~ from vehicles. Light poles provided along the roadways shall be breakaway. The pole locations shall be in accordance with the Applicable Criteria.

(c) Direct burial conduit is required for street light and area light circuits. All exterior lighting (parking lot, street, building, etc.) shall be either 120, 208, or 277 Volt. 480-Volt lighting is not permitted.

6.9.4.2 Select and locate lighting fixtures to maintain the minimum foot-candle requirements for safety and security purposes. Beyond that, aesthetic considerations should take precedence. Light poles should be consistent and provide uniformity throughout the installation. Determine the pole height by their intended function. Size light fixtures proportionally to the intended pole height. Coordinate final fixture selection with the Contracting Officer for approval.

6.9.5. Telecommunications:

6.9.5.1. General. All communications equipment, materials, and work shall be in accordance with I3A requirements and are subject to approval by the NEC office and the Contracting Officer.

6.9.5.2. The NEC will remark cables upon justifiable request by the Contractor. Contractor is not responsible to maintain locates, except to use reasonable care. For NEC contact information, refer to paragraph 6.4.6.5.

6.9.5.3. Entrance conduits in all buildings shall be a minimum of three-way, 4 inch ducts.

6.9.5.4. Do not implement Free Space Optic (FSO) systems unless approved by the NEC Plans and Architecture Branch..

6.9.5.5. Coordinate with the NEC for a list of areas where 48" of cover is required above the top of the duct. Duct bank encasements shall be in accordance with I3A requirements.

6.9.5.6. Rotary trenchers or plowing are not allowed during trenching or excavation, except in undeveloped range and training areas. NEC prefers the method of open trenching, using bucket type equipment, i.e., backhoe and track hoe. The maximum width of the trench is in accordance with the type of equipment used to dig.

6.9.5.7. Splice cable either in manholes or pedestals. Do not make buried splices or use quasite boxes unless NEC approves in writing.

6.9.5.8. Do not use aerial cable.

6.9.5.9. Provide stainless steel splice cases for all copper cable splices, or an equivalent which shall be approved by the lead planner or the Service Management Division Chief. NEC requires submittals for splice cases and splice modules prior to work beginning. Specify splice cases for the particular environment in which they shall be placed and size to accommodate the cable count spliced. Design end plates for the number and size of the cables served by the splice and design to seal around each cable individually. All splice cases shall be re-enterable and shall contain all necessary equipment to be installed properly, adhering to all appropriate electrical codes.

6.9.5.10. Install warning signs in accordance with the following:

- Sign mounted to steel PSP stake; orange in color
- 4' below ground in concrete; rising 5' above ground
- No closer than 2 feet from the center of the ditch
- If there is a change in direction, position a sign immediately at the turn showing the line
- Although I3A states every 250' for those areas that end up being less than 250' provide sign(s) accordingly, even if an additional sign is necessary.

6.9.5.11. Provide a minimum copper cable size 25 pair.

6.10. FACILITY ELECTRICAL AND TELECOMMUNICATIONS SYSTEMS

Coordinate with Fort Campbell NEC during the design process. Submit all requested deviations from the mandatory design criteria in writing for approval at the discretion of the Government.

6.10.1. Provide dual jacks in lieu of single jacks. Dual jacks shall be two CAT 6 RJ45 type with green inserts.

6.10.2. Provide Copper Voice and Data jacks in new facilities or in facilities with no existing building cabling system in accordance with the I3A Criteria Section 2.4.1.1 (TIA/EIA T568A configuration). If the existing building cabling is of type TIA/EIA T568B, then install TIA/EIA T568B.

6.10.3. Voice and Data drops shall conform to the following wire color scheme:

- Green – Voice and NIPRnet data
- Red – SIPRnet (Secret) data
- Orange – JWICS (Top Secret) data
- All faceplates shall be neutral in color. Inserts shall be the same color as the wiring used for that particular jack.

6.10.4. Install Fiber Optic patch panels in cabinets or racks that house the LAN equipment. Do not install fiber optic patch panels on backboards.

6.10.5. Terminate copper distribution on 110 type rack mounted patch panels only. Do not install 110 type patch panels on backboards.

6.10.6. Make all new fiber optic terminations using LC connectors. Terminate any connectors already in place in renovated buildings or additional fiber connections in existing buildings with the identical type of existing fiber optic connectors.

6.10.7 Key telecommunication Room doors separate from other locks in the building IAW DPW standards. Provide two copies of the key to the NEC Logisitics Branch. Reference section 6.5.2.6, (b) for additional lock requirements.

6.10.8 Provide lightning protection, based on NFPA 780 (2004) Annex L Lightning Risk Assessment of the facility. Provide grounding, bonding, shielding for all facilities. Provide grounding straps and connect to the building grounding system. Provide grounding points in vehicle and equipment parking areas on 20 foot centers (maximum) and coordinated with the power and data board units. Provide ground strap on walls, and two (2) grounding points on each functional bay floor. Provide a bonding grounding in oil storage room. If lightning protection is required, install with mechanical fasteners on standing seam metal roofs.

6.11. HEATING, VENTILATING, AND AIR CONDITIONING

6.11.1 Integrate the control system to the installation's existing UMCS. The existing UMCS is FMCS at Fort Campbell, and shall be as described in Paragraph 6.2.1. Coordinate with Installation Energy Manager during the design process. Point of contact for Fort Campbell FMCS's is John Register at (270)-484-2741 or email John.W.Register@us.army.mil .

6.11.1. Outdoor design conditions include the following.

Winter Dry-Bulb:	Design Dry Bulb Day,14°F (99%)	
Summer Dry-Bulb:	Design Dry Bulb Day, 92°F (1%)	Design Wet Bulb Day, 88°F (MCDB)
Summer Wet-Buld:	Design Dry Bulb Day, 76°F (MCWB)	Design Wet Bulb Day, 78°F (1%)

6.12. ENERGY CONSERVATION

6.12.1. Inclusion of Renewable Energy Features. The following renewable energy features have been determined lifecycle cost effective, are included in the project budget and shall be provided:

«RENEWABLE_ENERGY_FEATURES»

Comment [sdn14]: Indicate here all renewable energy features that are included in project DD1391 and supported by LCCA. Be specific in description of features.

6.13. FIRE PROTECTION

6.13.1. The Fire Alarm Control Panel shall be fully compatible with the existing King-Fisher Industrial Radio Alarm Control System (IRACS) presently in use at Fort Campbell. The fire alarm AM transmitter shall be Government furnished, contractor installed. Mass Notification: The required mass notification system shall be in a separate cabinet from the fire alarm system.

6.13.1.1. The fire alarm system shall be an open protocol type in that it is designed and installed such that the Government or its agents are able to perform: repair, replacement, upgrades, and expansions of the system without further dependence on the original contractor or system manufacturer.

6.13.1.2. Fire Lite, Notifier, Mirtone, and EST are approved Fire Alarm and Mass Notification systems authorized for installation in Fort Campbell facilities based on demonstrated ability to meet UFC 4-021-01 and Fort Campbell criteria and in order to reduce training, maintenance, and reserve parts cost. The proposed fire alarm system particular model must meet all requirements as stated above.

6.13.1.3. There shall be no requirement for software locks, special tools and any other proprietary equipment to maintain, add devices to or delete devices from the system, or test the Fire Alarm system. Fire detection and alarm systems shall be able to be programmed from the control panel and the Government's laptop. Provide any software, cables / interface devices required to manipulate the system , coordinated with Government personnel and jointly installed on the DPW laptop computer without any licensing agreements, signed documents or any requirements upon the Government to rely on any contractor or manufacturer for maintenance or manipulation of the system.

6.13.1.4. Provide space within exterior mechanical and within electrical rooms to accommodate the fire alarm and mass notification panels as well as the Government supplied Contractor installed Kingfisher transmitter. Provide exterior access to the Mechanical Room and where possible to the Electrical Room to allow Fire Dept access. Install remote fire alarm annunciators only when required.

6.13.1.5. Fire alarm system shall be addressable type, Class A, looped.

6.13.1.6. Install a weather proof exterior fire alarm strobe on the outside of the building on the street side to signal responding Fire Dept.

6.13.1.7. Provide a bronze, Series 3200 Knox-Box located within 10 feet of front entrance to the building at a mounting height of five feet.

6.13.2. Mass Notification/PA System:

6.13.2.1. The Mass Notification System shall be capable of connecting to a future facility wide system using dry contacts and 600 Ohm audio inputs

6.13.2.2. Provide LOC (local operating console) without locking door next to staff duty or receptionist station (where applicable to the facility type). Provide additional LOC's as required by applicable criteria.

6.13.2.3. The Mass Notification system shall be pre-programmed MNS (male voice). Audible announcement messages shall be as follows: and include the NFPA 72 (2010) Para 24.4.2.17 "this is a test" requirement:

(a) WEATHER (100 KHZ Steady tone, 5 Seconds); THE NATIONAL WEATHER SERVICE HAS ISSUED A SEVERE WEATHER ALERT FOR THIS AREA. TUNE TO LOCAL RADIO AND TELEVISION STATIONS FOR FURTHER GUIDANCE.

(b) SUSPICIOUS ACTIVITY (Fast whoop, 5 Seconds); MAY I HAVE YOUR ATTENTION PLEASE! A POSSIBLE BREACH IN SECURITY HAS BEEN REPORTED. PLEASE REMAIN CALM. YOU ARE INSTRUCTED TO TAKE APPROPRIATE SECURITY MEASURES AND REPORT SUSPICIOUS PERSONNEL, VEHICLES, PACKAGES OR ACTIVITIES TO SECURITY PERSONNEL.

(c) FIRE (horn sound, 5 seconds) ATTENTION, ATTENTION. A FIRE EMERGENCY HAS BEEN REPORTED. PLEASE LEAVE THE BUILDING USING THE NEAREST EXIT.

(d) TORNADO WARNING (horn sound, 5 seconds) ATTENTION, ATTENTION. A TORNADO WARNING HAS BEEN ISSUED FOR THIS AREA. A TORNADO WARNING HAS BEEN ISSUED FOR THIS AREA.

(e) CHEMICAL RELEASE WARNING (horn sound, 5 seconds) ATTENTION, ATTENTION. A CHEMICAL RELEASE HAS BEEN ISSUED. STAY INSIDE BUILDINGS AND CLOSE WINDOWS AND DOORS UNLESS ADVISED BY AUTHORITIES TO EVACUATE AREA. CHEMICAL RELEASE. STAY INSIDE BUILDINGS AND CLOSE WINDOWS AND DOORS UNLESS ADVISED BY AUTHORITIES TO EVACUATE AREA.

(f) ALL CLEAR (horn sound, 5 seconds) ATTENTION, ATTENTION. THE EMERGENCY IS OVER. I REPEAT THE EMERGENCY IS OVER. RESUME YOUR NORMAL DUTIES.

(g) EVACUATION WARNING (horn sound, 5 seconds) ATTENTION, ATTENTION. THIS IS AN EMERGENCY EVACUATION ORDER. REMAIN CALM, FOLLOW THE INSTRUCTIONS OF THE EMERGENCY OFFICALS. THIS IS AN EMERGENCY EVACUATION ORDER. OBAY THE EMERGENCY OFFICALS. REMAIN CALM.

(h) BOMB THREAT WARNING (horn sound, 5 seconds) ATTENTION, ATTENTION, A BOMB THREAT ALERT HAS BEEN ISSUED FOR THIS BUILDING. ALL PERSONNEL ARE TO EVACUATE IMMEDIATELY USING THE NEAREST EXIT. FURTHER INSTRUCTIONS WILL BE ISSUED OUTSIDE THE BUILDING BY EMERGENCY RESPONSE TEAMS.

(i) TERRORIST THREAT WARNING. (horn sound, 5 seconds) MAY I HAVE YOUR ATTENTION, PLEASE. A TERRORIST THREAT HAS BEEN RECEIVED. EFFECTIVE IMMEDIATELY, WE ARE OPERATING "SECURE AND LOCKDOWN PROCEDURES." ALL PERSONNEL SHOULD REMAIN CALM AND STAY WHERE YOU ARE. PLEASE AWAIT FURTHER INSTRUCTIONS."

(j) FPCON C (wail, 5 seconds) ATTENTION, ATTENTION. FORT CAMPBELL IS IN FORCE PROTECTION CONDITION CHARLIE. ALL PERSONNEL IMMEDIATELY IMPLEMENT FPCON CHARLIE ACTIONS.

(k) FPCON D (Wail, 5 seconds) ATTENTION, ATTENTION. FORT CAMPBELL IS IN FORCE PROTECTION CONDITION DELTA. ALL PERSONNEL IMMEDIATELY IMPLEMENT FPCON DELTA ACTIONS.

6.13.3. Portable Fire Extinguishers.

6.13.3.1. Provide and install flush or semi-mounted Fire Extinguisher Cabinets and Brackets in accordance with UFC 3-600-01 and NFPA 101 to accommodate Government Furnished/Government Installed Fire Extinguishers. Do not use glass or lockable doors in fire extinguisher cabinets.

6.13.3.2. Government will provide ten-pound portable dry chemical (Class ABC) Fire Extinguishers manufactured by Amerex.

6.14. SUSTAINABLE DESIGN

6.14.1. LEED Rating Tool Version. This project shall be executed using «LEED_VERSION».

Comment [sdn15]: [LEED-NC Version 2.2][LEED-NC Version 3][*text block for other to be filled in by specifier*]

6.14.2. ***<ONLY_EXEMPT>***LEED Minimum Rating. This project includes no facilities that are required to achieve a specific LEED achievement level. Project shall achieve and document all points required by other portions of the RFP and all points that are feasible, but there is no minimum required LEED achievement level.***</ONLY_EXEMPT><NOT_ONLY_EXEMPT>*** The minimum requirement for this project is to achieve LEED «LEED_MIN» level. Each non-exempt facility (building plus sitework) must achieve this level. In addition to any facilities indicated as exempt in paragraph 3, the following facilities are exempt from the minimum LEED achievement requirement: «SD_EXEMPT_FACILITIES».***</NOT_ONLY_EXEMPT>***

Comment [sdn16]: [Silver][Gold][Platinum]

6.14.3. ***<SINGLECO>***Credit Validation: LEED registration, compiling of documentation at LEED OnLine and use of the LEED Letter Templates is required. Registration and payment of registration fees will be by the «FEES_PAID_BY». Administration/team management of the online project will be by the «ADMIN_PERFORMED_BY». ***<USGBC>***Validation of credits will be accomplished by the Government. LEED certification of the project by the Contractor is required. The Contractor will obtain LEED certification prior to project closeout. Application, payment of certification of fees and all coordination with USGBC during the certification process will be by the Contractor. GBCI interim review of design phase data is not required by the Government but is recommended. Government validation during project execution does not relieve or modify in any way the Contractor's responsibility to satisfy all requirements for certification as defined by LEED and GBCI. Contractor is not responsible for design phase LEED documentation of any unaltered portion of the design that is accomplished by others. If the project includes unaltered complete design by others, during the certification process Contractor will coordinate all GBCI comments on LEED credits that fall outside Contractor's scope of responsibility with the Government for coordination with the Designer of Record, and Contractor will not be penalized if project fails to achieve certification at the minimum required level due to loss of credits that are the responsibility of others.***</USGBC><USGBC_NO>***Validation of credits will be accomplished by the Government.

Comment [sdn17]: Select paragraph below if the project includes COS standard design buildings and a single contractor is doing all buildings and site work in the project. Edit for either Contractor or Government fees and administration (PDT choice). Registration is required.

LEED certification of the project by the Contractor is not required. The Government may choose to seek LEED certification of the project, in which case the Government will pay certification fees and coordinate with the GBCI and the Contractor will furnish audit data as requested at no additional cost.*</USGBC_NO>*
*</SINGLECO><SITE_BLDGOTHER>*Credit Validation: The project is the site work *<ADDITIONAL>*and building(s)*</ADDITIONAL>* portion of a multiple contractor Combined Project. LEED registration, compiling of documentation at LEED OnLine and use of the LEED Letter Templates is required Registration and payment of registration fees will be by the «FEES_PAID_BY». Administration/team management of the online project will be *<ADMINGOV>*by the Government*</ADMINGOV><ADMINSHARED>*shared between the Contractor and the Government per Appendix LEED Requirements for Multiple Contractor Combined Projects*</ADMINSHARED>*. *<ADMINCONTRACTOR>*Administration/team management of the online project will be by the Contractor per Appendix LEED Requirements for Multiple Contractor Combined Projects. *</ADMINCONTRACTOR>*Validation of credits will be accomplished by the Government. LEED certification of the project by the Contractor is not required. The Government may choose to seek LEED certification of the project, in which case the Government will pay certification fees and coordinate with GBCI and the Contractor will furnish audit data as requested at no additional cost.*</SITE_BLDGOTHER><STDANDSITE>*Credit Validation: The project is a standard design building(s) portion of a multiple contractor Combined Project. LEED registration, compiling of documentation at LEED OnLine and use of the LEED Letter Templates is required. Registration and payment of registration fees will be by the «FEES_PAID_BY». Administration/team management of the online project will be by the «ADMIN_PERFORMED_BY». See Appendix LEED Requirements for Multiple Contractor Combined Projects for information about registered standard designs. Validation of credits will be accomplished by the Government. LEED certification of the project by the Contractor is not required. The Government may choose to seek LEED certification of the project, in which case the Government will pay certification fees and coordinate with GBCI and the Contractor will furnish audit data as requested at no additional cost.*</STDANDSITE><NSTDMULTI>*Credit Validation: The project is a non-standard design building(s) portion of a multiple contractor Combined Project. LEED registration, compiling of documentation at LEED OnLine and use of the LEED Letter Templates is required. Registration and payment of registration fees will be by the «FEES_PAID_BY». Administration/team management of the online project will be by the «ADMIN_PERFORMED_BY». Validation of credits will be accomplished by the Government. LEED certification of the project by the Contractor is not required. The Government may choose to seek LEED certification of the project, in which case the Government will pay certification fees and coordinate with GBCI and the Contractor will furnish audit data as requested at no additional cost.*</NSTDMULTI><ONLY_EXEMPT>*Credit Validation: LEED registration, compiling of documentation at LEED OnLine and use of the LEED Letter Templates is *<CREDIT_NO>*not required. Contractor has the option to register the project, compiling of documentation at LEED OnLine and use the LEED Letter Templates. In this case, payment of registration fees and administration/team management of the online project will be by the Contractor.*</CREDIT_NO><CREDIT>*required. Registration and payment of fees will be by the «FEES_PAID_BY». Administration/team management of the online project will be by the «ADMIN_PERFORMED_BY». *</CREDIT></ONLY_EXEMPT>*

6.14.4. Commissioning: See Appendix M for Owner's Project Requirements document(s).

6.14.5. LEED Credits Coordination. The following information is provided relative to Sustainable Sites and other credits. *<MULTI_NOT>*

SS Credit 1 Site Selection:

Project site **«FARMLAND»** considered prime farmland.

*<FLOOD1>*Project site is five feet or more above 100-year flood elevation.*</FLOOD1><FLOOD2>*Delineation of 100-year flood elevation is shown on site drawings provided in this CONTRACT.*</FLOOD2>*

*<HABITAT1>*Project site contains no habitat for threatened or endangered species.*</HABITAT1><HABITAT2>*Delineation of threatened or endangered species habitat is shown on site drawings provided in this CONTRACT.*</HABITAT2>*

*<WETLAND1>*No portion of project site lies within 100 feet of any water, wetlands or areas of special concern.*</WETLAND1><WETLAND2>*Delineation of water, wetlands and areas of special concern is shown on site drawings provided in this CONTRACT.*</WETLAND2>*

Project site **«PARKLAND»** previously used as public parkland.

Comment [sdn18]: Select paragraph below if the project includes the site work for COS standard design buildings by others. Include bracketed text in first sentence as applicable if project also includes standard design and/or non-standard design buildings in addition to site work for COS buildings by others. Registration and fees may be either by Contractor or Government (PDT choice). Administration may be by Government or shared - Contractor administers until construction phase, when Government must take over administration in order to compile and summarize data from the other contractors (PDT choice).

Comment [sdn19]: Select paragraph below if the project includes COS standard design building(s) only and site work is by others. If only a single contractor will ever be working on all the projects for a particular standard design, the COS may require the Contractor to register the standard design as part of the initial project and administer the online standard design on all subsequent projects. If multiple contractors will be working on projects for a particular standard design, registration and administration must be by the Government (COS).

Comment [sdn20]: Select paragraph below if the project includes non-standard design building(s) only and site work and COS standard design buildings are by others. Edit for either Contractor or Government fees and administration (PDT choice).

Comment [sdn21]: Select paragraph below if the project ONLY has exempt facilities and is not required to achieve LEED Silver.

Comment [sdn22]: Attach Owner Project Requirements (OPR) document for each climate controlled facility/facility type in the project. Obtain OPR for Standard Designs from COS. Develop OPR for each non-standard facility using USACE template at http://en.sas.usace.army.mil. Refer to SOW whenever possible in this document to avoid conflict with SOW.

Comment [sdn23]: If site work and building(s) are by separate contractors, this is a MULTIPLE CONTRACTOR COMBINED PROJECT and you should skip to the MR2 section (edit to indicate whether buildings or site is by others and identify the buildings by others).

SS Credit 2 Development Density & Community Connectivity.

Project site **«DENSITY»** meets the criteria for this credit.

SS Credit 3 Brownfield Redevelopment.

Project site **«BROWN»** meets the criteria for this credit.

SS Credit 4.1 Public Transportation Access.

Project site **«TRANS»** meets the criteria for this credit.

EA Credit 6 Green Power.

35% of the project's electricity **«GREEN»** will be provided through an Installation renewable energy contract. Do not purchase Renewable Energy Credits (REC's) to earn this credit.

</MULTI_NOT>**MR Credit 2 Construction Waste Management.**

The Installation ***<DOESNOT>***does not have an on-post recycling facility available for Contractor's use.***</DOESNOT><DOES>***has an on-post recycling facility.***</DOES> <CONTACT_KNOWN>***Contact «CONSTRUCTION_WASTE_CONTACT» for information about materials accepted.***</CONTACT_KNOWN><LEED3>***

Regional Priority Credits (Version 3 only)

The project zip code is «ZIP_CODE».***</LEED3>***

<MULTIPLE>See LEED Multiple Contractor Responsibilities Table(s) for additional information.***</MULTIPLE>***

6.14.6. LEED Credit Preferences, Guidance and Resources. See Appendix L LEED Project Credit Guidance for supplemental information relating to individual credits.

6.14.7. ***<MULTI_NOT>***Not Used***</MULTI_NOT><MULTIPLE>***Multiple Contractor Combined Project. When site work and building(s) are accomplished by separate contractors, it is a Multiple Contractor Combined Project for purposes of LEED scoring and documentation. This project is part of a Multiple Contractor Combined Project that includes site work and building(s) accomplished by separate contractors. See Appendix LEED Requirements for Multiple Contractor Combined Projects and Appendix LEED Multiple Contractor Responsibilities Table(s) for special requirements for this project.***</MULTIPLE>***

6.14.8. Additional Information

«MR2»

6.15. ENVIRONMENTAL

6.15.1. Solid Waste Disposal/Diversion Practices:

6.15.1.1. Solid Waste Disposal/Diversion Practices shall be in accordance with Appendix E, Environmental information. All construction activities at Fort Campbell shall require at least a 50% diversion of construction materials such as excess lumber, roofing, drywall, carpet, piping, cardboard, etc to be diverted from the landfill. Reference Appendix J, for Borrow/Disposal Area Plan.

6.15.1.2. Government policy shall apply to sound environmental principles in the design, construction and use of facilities. As part of the implementation of that policy, the Contractor shall: (1) Practice efficient waste management when sizing, cutting, and installing products and materials, (2) use all reasonable means to divert construction, and demolition waste from landfills and incinerators and to facilitate their recycling or reuse. Recycling Construction and Demolition Debris guidance and documentation requirements can be found on the

Comment [sdn24]: If site work and building(s) are accomplished by separate contractors, identify the project as a Combined Project

If site work and building(s) are accomplished by separate contractors, include general instructions on how LEED is handled for Combined Projects (standard text appendix LEED Requirements for Multiple Contractor Combined Projects), (STANDARD APPENDIX "N" IN WIZARD)

If site work and building(s) are accomplished by separate contractors, include LEED Strategy Tables (STANDARD APPENDIX "O" IN WIZARD), which indicate the status of site selection points, establish the number of points each contractor must earn relative to each building, and establish each contractor's requirements for shared building/site points.

If site work and building(s) are by separate contractors, add the MULTIPLE CONTRACTOR COMBINED PROJECT paragraph below.

Comment [sdn25]: Indicate here all project-specific differences from the default assumptions in Appendix L. For Multiple Contractor Combined Projects, describe here the other contacts and buildings in the combined project.

Fort Campbell Environmental Web Site:
(http://www.campbell.army.mil/campbell/directorates/DPW/envdiv/Pages/RecyclingConstructionDemo.aspx).

6.15.1.3. Submit a Waste Management Plan (WMP) within 15 days after Notice to Proceed (NTP) and prior to initiating any site preparation work. Include the following:

(a) Name of individuals on the Contractor's staff responsible for waste prevention and management.

(b) Actions that will be taken to reduce solid waste generation.

(c) Description of the specific approaches to be used in recycling/reuse of the various materials generated, including the areas and equipment to be used for processing, sorting, and temporary storage of wastes.

(d) Characterization, including estimated types and quantities, of the waste to be generated.

(e) Name of landfill and/or incinerator to be used and the estimated costs for use, assuming that there would be no salvage or recycling on the project.

(f) Identification of local and regional reuse programs, including non-profit organizations such as schools, local housing agencies, and organizations and accept used materials such as materials exchange networks and Habitat for Humanity.

(g) List of specific waste materials that will be salvaged for resale, salvaged and reused, or recycled. Recycling facilities that will be used shall be identified.

(h) Identification of materials that cannot be recycled / reused with an explanation or justification.

(i) Anticipated net cost savings determined by subtracting Contractor program management costs and the cost of disposal from the revenue generated by sale of the materials and the incineration and/or landfill cost avoidance.

6.15.2. Sediment and Erosion Control:

Design and construct the project in accordance with the Fort Campbell Policy for Stormwater Erosion and Sediment Control at Construction Sites. This policy can be found on the Fort Campbell Environmental Web Site: (http://www.campbell.army.mil/envdiv/en1.htm)

6.15.3. Ban on use of asbestos containing materials, lead based paint and PCB's.

6.15.3.1 Do not use asbestos containing materials (ACMs), lead based paint (LBP), or PCBs.

6.15.3.2 Provide the required No Asbestos – Containing Material (ACM) Certification in accordance with the following.

(a) Design Phase. Before final payment of the project design fee, the designer of record (DOR) shall submit to the government, on their firm's letterhead, a signed, stamped and dated copy of the following statement:

"I hereby certify that no asbestos-containing material (ACM) was specified as a building material in any construction document for this project. Furthermore, I certify that no product containing mineral fibers was specified as a building material in any construction document for this project unless I either

-'Have on file and have submitted to the Government, the manufacturer's certification that the material does not contain asbestos,' or

- 'Have supplied to the Government documentation to show that the material has been microscopically examined by an AIHA- or NVLAP-certified laboratory and the lab has determine that it does not contain asbestos.' "

(b) Construction Phase. Before final payment to the Contractor, the Contractor's project engineer/manager will sign and submit to the Government, on the Contractor's letterhead, a dated copy of the following statement:

"I hereby certify that to the best of my knowledge no asbestos-containing material (ACM) was used as a building material during this project. I understand that the building Owner presumes that all materials marked 'May contain mineral fibers' are asbestos unless I either:

- 'Have on file and have submitted to the Government the manufacturer's certification that the material does not contain asbestos,' or

- ‘Have supplied to the Government documentation to show that the material has been microscopically examined by an AIHA- or NVLAP-certified laboratory and the lab has determine that it that it does not contain asbestos.’ “

6.15.4. Air pollution restrictions applicable to this project do not allow materials to be burned on Government premises.

6.15.5. The Installation Forrester must complete a survey before any trees with diameters greater than 6 inches are removed. This is in addition to Section 3.1 Land Resources under Section 01 57 20.00 10.

6.15.6. Maintain all excavations, stockpiles, access roads, waste areas, and all other work ares free from excess dust to such a reasonable degree as to avoid causing hazard or nuisance.

6.15.7. Underground Storage Tanks (USTs):

Do not install UST’s without approval from the DPW Environmental Dvision. If permitted, USTs shall be double walled steel fiberglass coated with interstial monitoring and automatic tank gauging. The monitoring system shall be compatible with the systems already in use and capable of being remotely montitored by the Environmental Division. Do not install used oil USTs.

6.15.8. Aboveground Fuel Storage Tanks (ASTs).

6.15.8.1. ASTs shall conform to all Federal, State, Local regulations and guidelines and these design requirements.

6.15.8.2. ASTs shall be double-walled type tanks. Provide means to establish the integrity of the secondary containment.

6.15.8.3. ASTs shall rest on foundations, made of concrete, masonry, piling, or steel. Design tank foundations to minimize the possibility of uneven settling of the tank and to minimize corrosion in any part of the tank resting on the foundation.

6.15.8.4. The Directorate of Public Works , Environmental Division, Petroleum Storage Tank Manager is the Installation Local Authority Having Jurisdiction (AHJ) who must approve any design proposal and construction before any installation of an AST.

6.15.8.5. Location of Aboveground Fuel Storage Tanks (ASTs). The local AHJ must approve all proposed installations sites of ASTsin writing prior to installation.

(a) No AST shall be installed closer than 5-feet from any type of an electrical disconnect device.

(b) Locate ASTs between the size of 60 U.S. gallons and 2,000 U.S. gallons no closer than 10-feet from any building, lean-to, or property line.

(c) ASTs shall have at the minimum of 5 ft of unobstructed clearance on all sides to facilitate refueling, maintenance and serviceability.

(d) No AST shall be installed without having at least a 15-foot aerial clearance from overhead or underground electrical lines, which includes but limited to weather heads, transformers, and fuses.

(e) The minimum distance between any two ASTs shall be 3-feet.

(f) The minimum distance between an AST with Gasoline or Diesel fuel and a LP tank shall be 20-feet.

(g) Locate Used Oil tanks close to the source of generation, i.e., just outside the building.

6.15.9. Aboveground Fuel Lines.

6.15.9.1. Below ground fuel lines are not permitted for use with an AST.

6.15.9.2. Aboveground supply and return lines. Suspend fuel lines a minimum of 6 inches off the ground and support every 3-feet with some type of approved support. Protect fuel lines against corrosion with protective features that prohibit any collision from motor vehicles. All fuel lines shall be of black carbon-type steel. All AST supply fuel lines shall be ½-inch inside diameter and all return fuel lines shall be ¾-inch inside diameter, unless otherwise directed by Local Authority having Jurisdiction. All supply fuel lines shall have a shut off valve located as close as possible to the AST. There shall be no traps of check valves in the return fuel line to the AST. All pipe joints shall be of the threaded type, no welding of pipes or of the joints shall be permitted. Joints shall be made liquid tight and shall be threaded, except that listed flexible connectors are permitted where installed with prior written approval of the Local AHJ. All threaded joints shall be made up tight with a suitable thread sealant or lubricant. Joints in piping systems handling Class I liquids shall be welded when located in concealed spaces within buildings.

6.15.10. Normal Venting for Aboveground Tanks.

6.15.10.1. Venting requirements shall be in accordance with current Unified Facilities Guide Specifications, Section 13202, Fuel Storage Systems requirements. Stage I vapor recovery is the process of recovering vapors when a storage tank is filled. Stage I vapor recovery is mandatory on all Army Facilities.

6.15.10.2. Prevent the development of vacuum or pressure sufficient to exceed the design pressure due to filling or emptying and the atmospheric temperature changes.

6.15.10.3. If any tank has more than one fill or withdrawal connection and simultaneous filling or withdrawal can be made, base the vent size on the maximum anticipated simultaneous flow.

6.15.10.4. Arrange the outlet of all vents and vent drains on tanks equipped with venting to permit pressures exceeding 2.5 psig to discharge in such a way as to prevent localized overheating of, or flame impingement on, and part of the tank, in the event vapors from such vents are ignited.

6.15.10.5. Where vent pipe outlets for tanks storing Class I liquids are adjacent to building or public ways, locate them so that the vapors are released at a safe pint outside of buildings and not less than 12 ft. above the adjacent ground level. In order to aid their dispersion vapors shall be discharged upward or horizontally away from closely adjacent walls. Locate vent outlets so eaves will not trap the flammable vapors or other obstructions and at least 5 ft from building openings**.**

6.15.10.6. Emergency Venting for Fire Exposure for Aboveground Tanks.

(a) Every aboveground tank shall have some form of construction or device that will relieve excessive internal pressure caused by exposure fires. This requirement shall also apply to each compartment of a compartmented tank, the interstitial space of a secondary containment type tank, and the enclosed space of tanks of closed top dike construction.

(b) Arrange the outlet of all vents and vent drains on tanks, equipped with emergency venting to permit pressures exceeding 2.5 psig to discharge in such a way as to prevent localized overheating of or flame impingement on any part of the tank, in the event vapors from such vents are ignited.

6.15.11. Miscellaneous AST Requirements.

6.15.11.1. All ASTs permanently installed shall have a device(s) for fuel leak detection, fuel level, and all other monitoring requirements.x

6.15.11.2. Mark ASTs in accordance with NFPA. 704.

6.15.11.3. Mark ASTs in accordance with NFPA. 704.

6.15.11.4. All ASTs shall have some type of spill containment that will hold 110% of the AST capacity.

6.15.11.5. All ASTs that have filling and emptying connections for any Class I or Class II, flammable liquids shall be closed and liquid tight when not in use and shall be properly identified.

6.15.11.6. All ASTs fill caps shall have an AHJ approved means of locking when not being refueled.

6.15.11.7. All ASTs shall have some device of fire-fighting equipment in the immediate area. (Contact Fort Campbell Fire Prevention Section for further details).

6.15.11.8. Provide means for determining the level of liquid in the tank. This means shall be accessible to the delivery operator

6.15.11.9. Take precautions to prevent the ignition of flammable vapors. Sources of ignition include, but are not limited to:

- OpenFlames
- Lightning
- Hot surfaces
- Radiant heat
- Smoking
- Cutting and welding
- Spontaneous ignition
- Frictional heat or sparks
- Static electricity
- Electrical sparks-
-Stray currents-
-Ovens, furnaces, and heating equipment

6.15.11.10. Install bollards around all ASTs to prevent vehicular collision with the tank.

6.15.11.11. Construction of secondary containment structures for mobile fuel tankers or storage tanks shall be concrete construction and have sufficient capacity to hold 110% of the largest tank / mobile fuel tanker that it will hold. The secondary containment stormwater discharge valve or valves must be capable of completely draining a containment in 2 hours or less. Four-inch values are recommended. Locate the outlet drain(s) valves and piping at the lowest evevation of the containment. The bottom of the outlet drain pipe shall be flush with bottom of the containment. Berm control expansion/contraction joints shall be filled with a fuel-resistant sealant. If the concrete berm is placed upon existing concrete, then seal the joint between the new and old concrete with a fuel-resistant sealant. Seal storm water drain piping with fuel resistant sealant. Provide an adequate amount of reinforced concrete above and below the drain pipe(s) to prevent crack formation in the concrete at this location.

6.15.12. Contractor Site Specific Spill Plan (CSSSP). Prepare and submit CSSSP through the COR to Fort Campbell Environmental Division. Develop the CSSSP as outlined in the Fort Campbell Environmental Handbook. A link to the fill-in-the-blank version of the CSSSP is located on the Fort Campbell Web site at: (http://www.campbell.army.mil/campbell/directorates/DPW/envdiv/Pages/Spills/aspx).

6.15.13. Green Procurement. Purchase, supply, and use environmentally referable products and services to the maximum extent practicable. Consider Green products as the “first choice” for procurement. Additional information can be obtained in the applicable Appendix.

6.15.14. Sustainable Installation Management System (SIMS). Fort Campbell has implemented an environmental management system entitled SIMS to proactively deal with the environmental impacts of its processes, activities, and services. Fort Campbell’s approved Significant Environmental Aspects are located on the DPW Environmental Division web page (http://www.campbell.army.mil/campbell/directorates/DPW/envdiv/Pages/default.aspx) under “Sustainable Installation Management System (SIMS/EMS)” on the left menu.

6.15.14.1. Fort Campbell uses the ISO 14001:2004 as the standard for its SIMS. All personnel performing work for or on behalf of Fort Campbell should be aware of and understand Fort Campbell Environmental Policy. Fort Campbell offers SIMS General Awareness Training in the form of an 8 minute video. This video can be found on the Fort Campbell Environmental web site (http://www.campbell.army.mil/campbell/directorates/DPW/envdiv/Pages/default.aspx) under “Sustainable Installation Management System (SIMS/EMS)” on the left menu. Ensure that all subcontractors receive SIMS General Awareness Training.

6.15.14.2. Ensure that all goods and services used by the contractor or any of its subcontractors do not deviate from the installation Environmental Policy, objectives and targets of the EMS. Perform work in a manner

that conforms to all appropriate Environmental Management Programs and Operational Controls identified by Installation's SIMS, including pollution prevention, waste reduction, energy use, and natural resource protection. Provide monitoring and measurement information as necessary for the organization to address environmental performance relative to the environmental and energy management goals. In the event of non-compliance with Fort Campbell's legal or other requirements or non-conformance with the installation SIMS, take immediate corrective action, perform a root-cause analysis of the non-compliance/non-conformance and develop preventive action to keep the non-compliance/non-conformance from recurring. In the event of any noncompliance with any federal, state, or local environmental law, regulation or requirement, immediately respond by taking all appropriate corrective action and notify the Contracting Officer's Representative (COR) and the DPW Environmental Division. Ensure that employees and subcontract employees are aware of their roles and responsibilities with regard to the SIMS and how these requirements affect the work performed under this contract. Additionally, when ordering supplies for use on Installation, all contractor personnel must favor energy-efficient, recycled or reclaimed material whenever practicable.

6.15.14.3. The responsibility of all contractor personnel include, but are not limited to:

(a) Recycling all eligible material, including glass, paper (including magazines), plastic, aluminum, and cardboard to the maximum extent practicable;

(b) Reducing the amount of hazardous material and/or solvent used by purchasing fewer hazardous materials and by increasing the use of products with recycled content;

(c) Reducing the amount of solid waste from construction and demolition debris, and scrap metal sent to municipal and rubble landfills by reducing, reusing, and recycling; and

(d) Conserving energy and water usage by turning off lights and equipment when not in use and using only the necessary amount of water needed to complete the required tasks. Continuous conservation of our natural resources is a must.

6.15.15. Direct any questions regarding SIMS to the Installation SIMS Action Officer (Karen Kopp-Voshel, phone 270-798-9597, e-mail karen.kopp@us.army.mil) or Contracting Officer's Representative. For more information regarding environmental compliance requirements contact DPW-Environmental at (270) 798-9645.

6.15.16. Inadvertent Disturbance and Discovery of Cultural Resources. If a previously unidentified historic property or archaeological site is disturbed or if any archaeological remains, including human skeletons, are discovered during construction, immediately halt all activity within in a one hundred (100) foot radius of the disturbance and/or discovery, notify the Fort Campbell Cultural Resources Program 270-412-8174, and implement interim measures to protect the site and/or discovery from looting and vandalism.

6.15.16.1. The Fort Campbell Cultural Resources Program will evaluate the disturbance and/or discovery and provide interim recommendations to the contractor within two working days of notification if the contractor can proceed with the planned activities. In accordance with the current Programmatic Agreement of Operations the Cultural Resources Program will then consult with the appropriate Tribal Nations and State offices to meet the Installation's legal obligations.

«ENVIRONMENTAL»

Comment [JTH26]: 6.15.6. NOTE TO SPECIFIER: See 6.15. Environmental tab in the RFP Wizard for further instructions.

6.16. PERMITS

6.16.1. Permits.

Obtain all permits (local, state and federal) required for design and construction of all site features and utilities. Provide information, as described below, to obtain all necessary permits.

6.16.2. Air Permits.

Provide air permit information to Fort Campbell Environmental Division. Two types of permits are required: (1) A construction permit; and (2) An operating permit. Obtain a construction permit based on the design prior to

construction. Obtain an operating permit when the equipment is installed. Provide information for both types of permits to Fort Campbell using the Checklist for Non-Process Source and the Vent Stack Checklist. Each checklist is available from the Fort Campbell Environmental Division and shall be completed for each piece of fuel-burning equipment. The lead time for these permits is approximately 30 days, thus submit all information as soon as possible. Point of contact for these items is Patty Lockard, Fort Campbell Environmental Division, and (270) 798-9603.

6.16.2.1. Fort Campbell (Christian (KY) and Montgomery (TN) Counties) was designated an ozone "maintenance" area in 2005. The installations maintenance plan requirements are designed to maintain the average ozone concentration levels at or below the maximum allowed to sustain compliance with the National Ambient Air Quality Standards. The redesignation as an "attainment maintenance area" will be in effect for 12 years. Section 176(c)(1) of the Clean Air Act (CAA) mandates the General Conformity Rule (GCR) analysis be completed by Fort Campbell to establish that any construction activity will not impede the continuation of the attainment status and ensure the action does not impede Kentucky or Tennessee air pollution control efforts in ozone "attainment maintenance areas". The rule requires that an analysis and other procedures (if required as a result of the analysis) be completed prior to the commencement of any of the project activities.

6.16.2.2. Review is required for all proposed construction activity which will result in the emission of surface ozone precursors (volatile organic compounds and nitrogen oxides) to ensure the action does not impede Tennessee air pollution control efforts to gain attainment of the NAAQS for ozone. Non attainment designations for particulate matter (PM) are based on 3-year averages of either each years' annual average concentration (annual average) or on a 24 hour average basis (rolling 24 hour avg.).

(a) PM2.5. Exceedance of either standard can result in an area being classified as non-attainment for PM2.5. If that should occur, PM2.5 will be considered and added to the GCR process as stated above.

6.16.2.3. Data is required to enable the Air Quality Program of the Fort Campbell Environmental Division to calculate the estimated emissions of ozone precursors resulting from construction equipment (mobile and stationary) burning fossil fuels and other Contractor vehicles (Contractor or private owned) operated on Fort Campbell as a result of the construction contract. To obtain this data representatives of the Fort Campbell Air Quality Program will need to contact either a Contractor representative and/or the Resident Office project manager, as designated by the Fort Campbell Resident Office. See 6.16.2.6 for examples of construction equipment and activities, which need to be identified as to their usage.

6.16.2.4. The primary source of the ozone precursors at Fort Campbell during construction activities is the burning of fossil fuels by mobile non-road construction equipment and other vehicles, including privately owned vehicles operated by construction Contractor personnel and Government supervising personnel (this applies only to that portion of usage directly applicable to the construction activity, which includes the commute to the construction site). In addition, stationary and/or portable units such as fossil fuel fired boilers, space heaters, and electric generators must be considered. Additional sources of concern that may be part of major construction activities include, but are not limited to, coating operations (spray booths), solvent cleaning operations, volatile organic fluids (fuels, etc.) dispensing and storage operations, and site remediation activities.

6.16.2.5. In addition to the data concerning ozone precursor emissions during the construction phase, data are also required to estimate what the emissions will be after the completion of the construction project. This includes evaluations to determine emission increases of ozone precursors resulting from any new permanent stationary sources; any potential increase in vehicle miles traveled by fossil fueled tactical, other federal Government owned, and private owned vehicles; and any increase in demands on current utility services (boiler plants, water plants, etc.). This data will be compiled from review of construction plans, drawings, and by interviews of points of contact other than the Contractor or the Fort Campbell Resident Office.

(a) Fuel Burning Equipment (Natural Gas and/or Fuel Oil): For boilers > 10 MBTU or for any boiler that uses fuel oil, contact the Air Quality Program with specifications for boilers. For hot water heaters > 120 gallons, contact the Air Quality Program with specifications for hot water heaters. The Air Quality Program will submit the Boiler NESHAP Notification to EPA.

(b) Concrete/ Asphalt: Describe whether operations of concrete batch plant/asphalt plant (including any use of a pug mill) will be on or off post. If on post, provide capacity and other design data to determine if air permits

would be required and to determine other CAA related compliance issues. Approximately 120 day lead time to obtain state operating permit.

(c) Debris Burning: Air pollution restrictions applicable to this project do not allow materials to be burned on the Government premises.

(d) Debris Disposal: If construction debris is to be sent to a grinder for recycling, describe if the grinding equipment will be on or off post and if on-post, providegrinder capacity (tons/hour) and design in order to determine if air permitting and other CAA related compliance issues apply. Approximately 120 day lead time to obtain state operating permit.

(e) Dust: Maintain all excavations, stockpiles, access roads, waste areas, and all other work areas free from excess dust to such a reasonable degree as to avoid causing a hazard or nuisance.

(f) Ozone Depleting Chemicals: Refrigerants shall have an ozone depleting potential (ODP) of 0.05 or less.

(g) Construction Equipment Listing. The list is not purported to be a complete list. It is based on some of the operations conducted during past major construction activities at Fort Campbell.

- Bulldozers
- Graders
- Excavators
- Backhoes
- Dump Trucks
- Fuel/Service Trucks
- Tractors
- Pug Mills (on site Fort Campbell)
- Concrete Batch Plant fossil fuel usage (on site Fort Campbell)
- Scrapers
- Ready-Mix Trucks
- Screed, Concrete, (if fossil fuel powered)
- Portable paint sprayers and any associated fossil fuel powered air compressors
- Fossil fuel fired powered air compressors used for activities other than powering paint applicators
- Fossil fuel powered electric generators,
- Lay Down Machines used in paving activities
- Rollers
- Compactors
- Water Trucks
- Pavement Stripping Machines
- Traffic road striping (vehicle and product applied)
- Loaders
- Compactors
- Curb and Gutter Pavers

6.16.2.6. The analysis must be completed prior to commencement of any of the construction project activities.

6.16.3. Water Permits.

Any change to the water distribution system requires an Approval from the State Government. The Contractor and the utility owner, CH2MHill, shall have shared responsibility in the coordination of the application for permit for work involving the water distribution system. Provide information as necessary during the design of the project to CH2M Hill for preparation of the permit application. Point of Contact for CH2M Hill at Fort Campbell is Chris Semler, (931) 431-2015. Alternate contact for CH2M HILL is Robert Neath (314) 421-0313.

6.16.4. Sanitary Sewer Permits.

Any change to the sanitary sewer system requires State approval. The Contractor and the utility owner, CH2MHill, shall have shared responsibility in the coordination of the application for permit for work involving the sanitary sewer system. Provide information as necessary during the design of the project to CH2M Hill for preparation of

the permit application. Point of Contact for CH2M Hill at Fort Campbell is Chris Semler, (931) 431-2015. Alternate contact for CH2M HILL is Robert Neath (314) 421-0313.

6.16.5. Erosion and Sediment Control Permits.

Coordinate with the Fort Campbell Environmental Division to obtain the latest guidance on the Erosion and Sediment Control Permits. The point of contact is Mr. Dan Etson at phone number (270) 798-9784. No ground disturbing activities shall be made without first securing coverage under Fort Campbell's National Pollution Discharge Elimination System (NPDES) Permit and secondly ensuring all storm water controls are in place. DPW-Environmental maintains a blanket storm water discharge coverage under the applicable state permit for all projects constructed during a calendar year. DPW- Environmental will issue the permit in each state to the Contractor once the Storm Water Manager has reviewed and approved all required environmental submittals. Submit all required submittal documents thirty (30) days prior to start of the project.

6.16.6. Fort Campbell Permits.

No electric equipment shall be installed within or on any Fort Campbell building, structure, or premises, nor shall any alteration or addition be made in any such existing equipment without first securing an Electrical Permit from the Fort Campbell Electrical Inspector in accordance with CAM Regulation 420-4 (Quality Assurance "Electrical" Inspection Standards). An Electrical Contractor Registration Form shall be completed. This form will be attached to the back of the copy of the CAM Regulation. The Contractor's license shall be validated against the Fort Campbell Review Board list of State Electrical Licenses valid on Fort Campbell KY before a permit can be obtained. Copies of CAM Regulation 420-4 and permits shall be obtained at DPW, Utilities Maintenance Building 868, Bastogne & 16th Street, Fort Campbell, Kentucky.

6.17. DEMOLITION

«DEMOLITION»

Comment [sdn27]: 6.17. NOTE TO SPECIFIER: Describe all aspects of demolition requirements.

6.18. ADDITIONAL FACILITIES

«ADDITIONAL_FACILITIES»

Comment [JTH28]: 6.18. NOTE TO SPECIFIER: Describe all aspects of requirements for additional facilities. Include all functional requirements. Include technical requirements and applicable references that vary from those in Paragraphs 4 and 5 for the additional facilities. Create a separate paragraph for each additional facility.