

6.0 PROJECT SPECIFIC REQUIREMENTS FORT KNOX, KY <VER>(REV 2.0 – 30 JUN 2012)</VER>

6.1. GENERAL

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

6.2. APPROVED DEVIATIONS

The following are approved deviations from the requirements stated in Paragraphs 3 through 5 that only apply to this project: None.

6.3. SITE PLANNING AND DESIGN

6.3.1. General: The Contractor is responsible for the site planning, design, and construction of all functional and technical requirements listed in this project, including erosion control measures, underground conduit, piping, utility service lines and connections (electrical, communications, cable, water, sewer, stormwater, gas, mechanical), etc. outside the building limits of construction.

6.3.1.1. Refer to Appendix J for Government approved Conceptual Site Plan. Appendix J depicts existing conditions/concept demolition and the proposed conceptual layout based on an evaluation of the site and the project program.

«SITE_PLANNING»

Comment [RBPJ1]: NOTE TO SPECIFIER:
Describe any additional project specific site requirements and improvements.

6.3.2. Site Structures and Amenities:

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

6.3.2.2. Provide Visual Screens with lockable access gates for Dumpsters and Mechanical Equipment in accordance with AT/FP requirements.

(a) **Dumpsters Enclosures.** Dumpster enclosures shall be compatible with the building's architectural theme. Enclosures shall be 3-sided and sized to accommodate both trash (front loading) and recycling (driver-side loading) dumpsters (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.

(b) **Equipment Enclosures.** Provide mechanical equipment horizontal enclosures to allow clearance for maintenance and as required by the equipment manufacturer. Screen wall shall be a minimum of 1-foot above the height of the tallest section of the equipment.

(c) **Utility Pads.** Install all concrete utility pads located outside the building exterior for any mechanical or utility device needed for the building operation and function. Include all necessary piping, wiring, or utility extensions for the device to function as designed. Locate mechanical equipment next to existing or proposed sidewalks, pathways, or parking areas to eliminate the need to construct additional hard surface access.

6.3.3. Site Functional Requirements:

6.3.3.1. **Stormwater Management (SWM) Systems.** Hardin County Water District No. 1 (HCWD1) owns the underground piped stormwater management system. Veolia Water North America is a subcontractor to HCWD1 and operates and maintains the system. DPW is responsible for stormwater surface flow. The Contractor shall provide stormwater management in accordance to federal, state and local regulations, and according to HCWD1 standard specifications and details. Minimize the impact of construction activities on drainage and prevent loss of soils by water and wind erosion. In accordance with the requirements of the Energy Independence and Security Act of 2007, this project shall utilize site planning, design, and construction strategies to maintain or restore the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of storm

water runoff flow. Integrate Low Impact Development (LID) and sustainable design strategies into project site planning, design and construction in order to maintain existing water quality at the site.

Coordinate the stormwater drainage system plan with the Fort Knox Environmental Management Division and HCWD1 / Veolia Water for review and approval prior to finalizing building design. Construct the permanent stormwater drainage system concurrently with the construction of the facility and coordinate with the Installation. HCWD1 standard specifications and details are available on the website, www.hcwd.com. The POC for HCWD1 is Preston Pendley, P.E. (270) 352-4280 ext. 224 and the contact for Veolia Water is Kenny Morley (502) 942-6020.

6.3.3.2. Erosion and Sediment Control. Design for Erosion and Sediment Controls shall comply with KPDES for the limits of the overall construction site. See Appendix J for phasing and extents of each portion of the Construction Site limits. Coordinate the lay down spaces, haul roads, and fabrication areas with the sites Storm Water Pollution Prevention Plan (SWPPP) in coordination with the Fort Knox DPW.

6.3.3.3. Vehicular Circulation. Vehicular Circulation shall promote safe, efficient movement of vehicles and pedestrians within the site area.

- (a) Emergency Vehicle Access. The ground access surface shall accommodate all Fort Knox Fire Department Trucks and Emergency Vehicles in accordance with all applicable criteria.
- (b) Provide fire vehicle access as a minimum to two sides of each facility.
- (c) 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.

Provide access for the following Fort Knox Fire Department equipment:

Vehicle ID	GVW	Height	Length	Width	Turning Radius
ENG #1	39,800 lbs	9'-10"	30'-2"	8'-4"	41'-0"
ENG #2	39,800 lbs	9'-10"	30'-2"	8'-4"	41'-0"
RESCUE	35,000lb	10'-2"	29'-11"	8'-5"	27'-0"
LADDER	62,000lbs	11'-2"	38'-0"	8'-0"	43'-6"
MASEY	29,000lbs	8'-6"	25'-2"	8'-0"	75'-0"
TITAN	52,000lbs	12'-4"	32'-4"	9'-8"	87'-0"

(Note: TITAN is ONLY for airfield operations)

- (d) Fire Lane Dimensions: Fire Lanes shall be a minimum of 20 feet.
- (e) Fire Lane Markings: Delineate Emergency access drives and Fire Lanes with 6-inch wide red striping and the words "FIRE LANE NO PARKING" in 4-inch letters within the stripes.

«VEHICULAR_CIRCULATION»

Comment [RBPJ2]: NOTE TO SPECIFIER:
Describe any additional project specific vehicular circulation requirements and improvements.

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. All surface features and underground utilities on the site shall be identified by this topographic survey. Locations, depth, and status of all underground infrastructure(s) shall be identified as a part of this construction site survey prior to final design. Refer to Appendix J for existing site conditions.

«SITE_EXIST_TOPO»

Comment [RBPJ3]: NOTE TO SPECIFIER:
Describe any additional project specific existing topographical conditions.

6.4.2. Existing Geotechnical Conditions: Refer to 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.

6.4.2.2. Soil Compaction and Foundation Excavations. Each layer of fill placement shall be no greater than 8 inches thick. Compact each layer to not less than the percent of maximum density.

6.4.3. Fire Flow Test. See Appendix D for results of fire flow tests to use for basis of design for fire flow and domestic water supply requirements. Water flow test information was obtained during the preparation of this RFP to provide information for estimating purposes only. Locations of existing fire hydrants are shown on site and utility drawings found in Appendix J. After award, coordinate with HCWD1, owner of the potable water system, to perform a water hydrant flow test to use as a basis for system design. Summary of design parameters of fire suppression system shall be submitted to HCWD1 with design review documents prior to construction.

«SITE_FIREFLOW»

Comment [RBPJ4]: NOTE TO SPECIFIER:
Describe any additional project specific fire flow test information.

6.4.4. Pavement Engineering and Traffic Estimates:

6.4.4.1. Pavement Design. Design pavement to support applicable traffic loads and seasonal frost conditions in accordance with Paragraph 5.2.3.1. and the parameters established in the final Geotechnical Report. Fort Knox minimal pavements sections shall be based on the following:

(a) Flexible Pavement.

(1) 4 inches of asphalt (1 inches of Class I bituminous surface course and 3 inches of Class I bituminous base course)

(2) 8 inches of aggregate subbase and/or base

(b) Rigid Pavement.

(1) 6-inches of concrete and 8 inches of aggregate subbase and/or base

(2) The minimum subbase/base can be neglected if the subgrade has a CBR greater than 30.

6.4.4.2. Sidewalks and Crosswalks. Provide pedestrian circulation improvements within the project boundary. Provide walkway connections to existing sidewalks where appropriate and orient pedestrian traffic to safe, convenient roadway crossings. Design walkways for the project site to provide access to the building entrance, service area, and outdoor site activity areas for convenience and maintenance access. Refer to Appendix J for proposed location of sidewalks, curbs and gutters.

(a) Sidewalks. Sidewalks shall provide an ample functional system of walks connecting structures, parking areas, streets, and other walks as pedestrian traffic demands. Sidewalks shall be a minimum of 6'-wide. In addition, carefully review paths of travel between buildings within this and adjacent complexes to determine a layout of sidewalks that is sufficient to meet the likely paths of travel as well as.

(1) Sidewalks designed to support emergency vehicle traffic shall be a minimum of 20' wide (16' paved with 2' structural turf both sides). Coordinate with the Fire Department for location requirement. Reference 6.3.3.3 (c) for Emergency Vehicle design loads.

(3) Sidewalks designed to support service vehicle traffic shall be a minimum of 10' wide.

(4) Construct non-vehicular sidewalks with a minimum thickness of 4" and design joint patterns uniformly that do not exceed the length to width ratio of 1.25.

(5) Slope sidewalks to meet all requirements for ADAAG.

(b) Crosswalks. Provide improved crosswalks in street areas adjacent to the site where appropriate. If patron parking cannot be designed to avoid pedestrians crossing travel lanes due to site constraints, provide crosswalks to connect all sidewalks to the main building entrance. Paint crosswalks with striping, or other improvements, to identify the pedestrian area in the street travel lanes. Divert drainage ways at roadway swales or provide culverts to prevent area drainage from crossing walkways. Slope sidewalks at all crosswalks, parking lots, and other grade changes to meet ADAAG requirements.

«SITE_PAVEMENT_ENGINEERING_AND_TRAFFIC»

6.4.5. Traffic Signage and Pavement Markings:

6.4.5.1. Traffic Signals. Use LED traffic sign bulbs .

Comment [RBPJ5]: 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.

«SITE_TRAFFIC_SIGNAGE»

Comment [RBPJ6]: NOTE TO SPECIFIER:
Describe any additional project specific traffic signage information.

6.4.6. Base Utility Information:

6.4.6.1. General: The Installation's DPW Fort Knox supervises infrastructure and utilities and in some cases they are owned and operated by private entities. Provide fire and domestic water, natural gas, storm sewers, storm sewer detention, sanitary sewers, electric, and communications (Cable Television Service, Telephone and Communications lines) to the facility for utility rerouting or new service. Reference existing and proposed base utility information in Appendix J. Field verify all existing and proposed locations of utilities and coordinate with the Installation's DPW.

(a) Maintain water and gas service to existing buildings during construction. When this is not possible, provide a 2-week notice of the required outage to the utility owner. Water is owned by HCWD1, and gas is owned by DPW Fort Knox.

(b) Existing utility services such as potable water, sanitary sewer, electric, natural gas, and COMM are all located: «SITE_BASE»

Comment [U7]: NOTE TO SPECIFIER:
Describe any additional project specific base site requirements.

(c) Metering Utilities. In addition to paragraph 5.2.5 requirements, provide metering in accordance with Public Service Commission (PSC) and Fort Knox standards. For privatized utilities, coordinate with the privatization utility(ies) for the proper meter base and meter installation (Nolin RECC Electric, HCWD1). Connect the pulse initiators to the building Direct Digital Control system so that the data is transmitted to the building controls and to the Post BAS.

(d) Building Near Existing Utilities: 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 utility provider to determine final routing of lines, and locations of connections points.

(e) Utility Permits. Include adequate time in the project schedule for the acquisition and approval of permits. Required permits are listed in Paragraph 6.16.

(f) Existing utility service lines and mains serving other buildings adjacent to the site which remain occupied during construction shall remain in service, uninterrupted, until those buildings are abandoned or until the Government/HCWD1 accepts new water distribution line(s).

6.4.6.2. Water Distribution System: Coordinate with HCWD1 to complete the water system design. Install the water distribution piping, including the connection to the existing main piping, and including the relocation or demolition of existing water distribution lines. Provide 2-week notice to HCWD1 prior to tie-ins to existing water mains. Design and construct facilities in accordance with HCWD1 standard specifications and details. Perform hydrostatic testing separately from the piping disinfecting. Place chlorine in mains during installation and HCWD1 will perform disinfection testing and bacteriological testing. Perform flushing after disinfection testing and bacteriological testing. Loop new lines and provide a valve with box at all new or existing lines intersections. HCWD1 will inspect all construction of water distribution piping. POCs for HCWD1 are Brett Pyles (270) 352-4280 ext 215 or Preston Pendley, P.E. (270) 352-4280, ext. 224.

(a) Design and construct the water distribution system in accordance with the Kentucky KRS, which requires the use of the latest edition of the Ten State Standards, with AWWA standards, and with all policies, procedures, standards, specifications and details required by HCWD1. Standard specifications and details are available on the website, www.hcwd.com.

(b) Install, test and document fire service mains, hydrants, and appurtenances in accordance with all applicable criteria. Use of new hydrants is preferred. If existing hydrants must be relocated, install new hydrants. Protect hydrants located in areas subject to vehicular damage with barriers. New fire hydrants shall meet HCWD1 standard specifications and details and be faced toward the hard surfaced area immediately adjacent to the hydrant.

(c) Determine the following for each building: the required capacity of domestic water required for the building; the domestic water service line size; the required capacity of the fire water service line for the building; the fire water service line size; and the location of the entrances to the building of the domestic water and fire water service lines. Coordinate with Fort Knox/HCWD1 to determine the routing of any new or relocated water distribution lines, the routing and locations of service lines, the locations of connection points to the existing water distribution system, the locations of existing water distribution lines to be removed, and the locations of fire hydrants and post indicator valves. Include the following on the contract drawings of site utilities: the routing of water distribution and water service lines outside the buildings' five foot lines and noted as "existing" or "new"; the locations of all fire hydrants on the site noted as "existing fire hydrant", or "new fire hydrant"; the location of post indicator valves; existing water distribution and service lines to be removed or replaced; and include water flow test information, including the available static water pressure, the residual pressure and the associated flow, and the location and identification of the test hydrant and flow hydrants. Residual pressures below 20 psi are not be allowed for the system. Contract drawings shall include material quantities of all pipe (by size, material, and class), valves, fire hydrants, and service lines.

(d) Coordinate the sequence and timing of all water line construction activities with Fort Knox and HCWD1. Do not begin any work associated with the water system before obtaining all required permits and approvals for the water system in coordination with Fort Knox and HCWD1.

6.4.6.3. Sanitary Sewerage System: HCWD1 owns the sanitary sewer system. As a subcontractor to HCWD1, Veolia Water North America maintains it. Design and install the sanitary sewer for the facility in accordance with HCWD1 Standard Wastewater System Design Guidelines. Obtain the HCWD1 Standard Wastewater System Design Guidelines from the HCWD1 website, www.hcwd.com. Contact for HCWD1 is Preston Pendley, P.E. at (270) 352-4280 ext. 224. Contact for Veolia Water Kenny Morley at (502) 942-6020. Submit an application for connection to HCWD1 as soon as possible after contract notice to proceed. The application shall include proposed demand data and a rough draft of the proposed utility layout for the site. Design the sewer system with approval by HCWD1, Provide information to HCWD1 about the building sewer systems and coordinate with them during the sewer design. Determine the following for the building(s)/project: the projected wastewater flow from the building, the required sewer line size, and the location of the entrances to the building of the sewer lines.

(a) Coordinate with HCWD1 / Veolia Water to determine the routing of any new or relocated trunk lines, the routing and locations of sewer lines, the locations of connection points to the existing sewer system, the locations of existing sewer lines to be removed, and the locations of manholes. Comply with the Hardin County Water District No. 1 (HCWD1) and State of Kentucky design and installation guidelines, and all HCWD1 policies, procedures, standards, specifications and details. After acceptance by the government, Fort Knox will request HCWD1 to take acceptance. Connections to Sewage Collection Mains and Building Service Lines: Establish the location for the connection based upon economics and site design parameters. Connect the new system to the existing gravity mains at a new manhole.

(b) Field Quality Control for Sanitary Sewer Distribution System: HCWD1 / Veolia Water reserves the right to inspect all construction of the sanitary sewer system. The contracting officer and HCWD1 / Veolia Water representatives will conduct field inspections and witness field tests specified. Perform field tests, and provide labor, equipment, and incidentals required for testing. HCWD1 will not provide water needed for field tests. For force mains, do not begin testing on any section of a pipeline where concrete thrust blocks have been provided until at least 5-days after placing of the concrete. During construction, keep all silt and sediment out of the existing sanitary system.

6.4.6.4. Gas Distribution System: Fort Knox owns and operates the gas distribution system. The design and construction of the required building service lines and modifications to any distribution lines shall be in accordance with Fort Knox standards and Department of Transportation standards. Coordinate with Fort Knox to determine the routing of any new or relocated gas distribution lines, the routing and locations of service lines, the locations of connection points to the existing gas distribution system, the locations of existing gas distribution lines to be removed, as well as the sequence and timing of construction activities. The Fort Knox standards are available for review at Building 80. Points of contact for Fort Knox are Wesley Prather (502) 624-5954, and Bob Ender (502) 624-5252.

(d) The main pressure in the system is approximately 50 psig. Regulator stations are installed throughout the system to regulate the gas pressure to 15 psig. If a new regulator station is required in the gas distribution system, construct the regulator station in a duplex arrangement so that either regulator can be isolated for maintenance without interrupting gas service. Gas is regulated to low pressure at buildings. Remove existing lines not used back to where the main line is and cap.

(e) Determine the size and location of pressure regulating stations; the required capacity of gas required for each building; the low pressure gas service line sizes for each building; and the location of the entrances to the buildings of the gas service lines and locations of the building gas regulators and meters.

(f) Gas piping shall be polyethylene (PE) pipe, SDR 11 or SDR 11.5. Underground valves shall be polyethylene. Install a tracer wire and warning tape above the piping. Install anodeless risers where piping rises above grade.

(g) Drawings shall depict the routing of gas distribution and gas service lines outside the buildings; the location of gas meters and regulators; and existing gas distribution and service lines to be removed or replaced.

6.4.6.5. Electrical: Nolin RECC ownsthe electrical distribution system at Fort Knox. Coordinate exterior electrical work Nolin RECC and Fort Knox DPW, Electrical Utility Section. Existing Drawings are available from both Nolin RECC and Fort Knox.

(a) Points of Contact are Vince Heuser, Vice President – System Operations Office: Nolin RECC, 411 Ring Road, Elizabethtown, KY 42701, (270) 765-6153, vheuser@nolinrecc.com and Mark Richerson, Engineering & Services Division, DPW, (502) 624-4541, mark.s.richerson.civ@mail.mil

(b) Meter: Nolin RECC will furnish and install the secondary service meter and meter cabinet at service activation under separate contract with the Government.

Comment [JTH8]: You didnt say who would pay for the meter and cabinet. I am assuming that it is under separate contract with Nolin. Please confirm.

6.4.6.6. Telecommunications: The Network Enterprise Center (NEC) formally known as the Department of Information Management (DOIM), oversees the telephone and communication service at Fort Knox. Design, 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. Coordinate with NEC during the design process. Point of Contact is Steven P. Kirkman, Chief, Telephone Switch Branch, Network & Switch Division, Network Enterprise Center (NEC), Comm: (502) 624-6313, Fax: (502) 624-2410, Email: steven.p.kirkman.civ@mail.mil.

6.4.6.7. Cable Television (CATV): Insight Cable provides and maintains cable television service. Provide cable television outlets in areas as described in Paragraph 3. Provide an empty 4 inch conduit from the closest outside Insight source cable into the building communications closet. Design, furnish, and install all interior conduit, wiring, outlet boxes, jacks and wall plates from the communications room(s) within the facilities. Coordinate cable television work with Insight Cable and Fort Knox NEC (reference 6.4.6.6. for NEC point of contact). Insight Cable Points of Contact are: Nathan Howerton, Construction Supervisor, 4701 Commerce Crossing Dr, Louisville, Ky 40229, Office: (502) 357-4318, Cell: (502) 639-6838, Email: howerton.n@insightcom.com or Wes Vasey, Engineering Supervisor, Office: (502) 357-4608, Cell: (502) 379-3648, Fax: (502) 357-4327, Email: vasey.w@insightcom.com and the field representative is C.W. Hesler, Field Engineer, Office: (502) 357-4381, cell: (502) 817-5009, Email: hesler.c@insightcom.com

6.4.7. Cut and Fill:

Comment [sdn9]: NOTE TO SPECIFIER: DO NOT SPECIFY MINIMUM COMPACTION REQUIREMENTS. THE IBC COVERS THIS AND THE GEOTECH REPORT MUST INCLUDE THE COMPACTION REQUIREMENTS.

6.4.7.1. Grading. All Fort Knox 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 to prevent loss of soils by water and wind erosion. Site designs should minimize the disturbance of land, utilize natural drainage paths where possible, and take into account future construction in the area. The difference in grade between the Finished Floor Elevation (FFE) and the ground surface immediately adjacent to the buildings shall be a minimum of 6 inches, except at personnel and overhead doors. The ground outside the buildings shall have a minimum of 5% slope away from all exterior walls for the first 10-feet and positive drainage thereafter.

(a) Confirm off-site drainage areas that will contribute to the site drainage system.

(b) Divert this drainage around or through the site and outlet downstream of the on-site drainage discharge outlet point.

(c) Site contours and drainage features shall ensure reasonable runoff volumes and travel times into individual catch basins and ditches, etc.

(d) 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.

(e) Designs that improve on existing water quality by incorporating sustainable design principles are encouraged, and consistent with budget constraints and activity requirements.

6.4.7.2. Soil Compaction: Contractor's project Geotechnical Engineer shall approve soil compaction equipment. Moistened or aerate material as necessary to provide the moisture content necessary to obtain the compaction specified with the equipment used. Each loose layer of fill placement shall be no greater than 8-inches thick.

6.4.7.3. Sink Holes: Historically, the potential for sinkholes does exist at Fort Knox. The preliminary site characteristics for this particular site are located in Appendix A. Geotechnical Information.

6.4.8. Borrow Material: Coordinate borrow material required for construction with the contracting officer and obtain from sources on government if available, and as close to the construction site as possible. Strive to achieve a balanced cut and fill for earthwork.

6.4.9. Haul Routes and Staging Areas: Use the Brandenburg Station Road gate for inspected access for commercial vehicles. Use Baker Road gate as a secondary commercial vehicle access point from 0600 – 0900 hrs, Monday thru Friday. For specific routing to the site refer to Appendix J, Borrow/Disposal Area Plan for Haul Route.

«SITE_HAUL_ROUTES»

Comment [rbpj10]: NOTE TO SPECIFIER:
Describe any additional project specific Haul Route Information.

6.4.10. Clearing and Grubbing: Clear and grub all trees and vegetation necessary for construction; but, save as many trees as possible. Protect trees to be saved during the construction process from equipment.

«SITE_CLEAR_GRUB»

Comment [rbpj11]: NOTE TO SPECIFIER:
Describe any additional project specific clear and grub requirements for the site.

6.4.11. Landscaping: Landscaping must meet the AT/FP requirements and in accordance with the Standard Appendix I, Acceptable Plants List. Design landscaping using the services of a qualified Landscape Architect, experienced in site planning and planting design. Provide a complete, integrated landscape-planting plan for the overall project. The design shall reflect appropriate groupings, foundation plantings, and street tree plantings to define the open spaces to ensure a complete landscaped project. Choose plant materials on the basis of plant hardiness, climate, soil conditions, low maintenance, and quality. Selected 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. Plant varieties shall be nursery grown or plantation grown stock. They shall be grown under climatic conditions similar to those in the locality of the project.

(a) Confirm off-site drainage areas that will contribute to the site drainage system. Divert this drainage around or through the site and outlet downstream of the on-site drainage discharge outlet point.

(b) Quality. Provide well-shaped, well-grown, vigorous, healthy plants having healthy and well-branched root systems. Plants shall be free from disease, harmful insects and insect eggs, sunscald injury, disfigurement, and abrasion. Provide plants that are typical of the species or variety.

(c) Shade and Flowering Trees. Provide a height relationship to caliper. Height of branching should bear a relationship to the size and variety of tree specified, and with the crown in good balance with the trunk. Do not "pole" or remove the leader from trees.

(d) Single Stem. Trunk shall be reasonably straight and symmetrical with crown and have a persistent main leader.

(e) Multi-Stem. All countable stems, in aggregate, shall average the size specified. To be considered a stem, there should be no division of the trunk, which branches more than 6 inches from the ground level.

(f) Specimen. Provide a plant that is well branched and pruned naturally according to the species. The form of growth desired, which may not be in accordance with natural growth habit, shall be as indicated.

- (g) Deciduous Shrub. Provide plants having the height and number of primary stems as recommended by the agency having jurisdiction. An acceptable plant shall be well shaped with sufficient well-spaced side branches recognized by the trade as typical for the variety grown in the region.
- (h) Coniferous Evergreen. Provide the height-to-spread ratio as recommended by the agency having jurisdiction. Do not "pole" or remove the leader from trees. An acceptable plant shall be exceptionally heavy, well shaped and trimmed to form a symmetrical and tightly knit plant. The form of growth desired shall be as indicated.
- (i) Broadleaf Evergreen. Provide the ratio of height-to-spread as recommended by the agency having jurisdiction. An acceptable plant shall be well shaped and recognized by the trade as typical for the variety grown in the region.
- (j) Ground Cover. Provide plants with the minimum number of runners and length of runner as recommended by the agency having jurisdiction. Furnish plants that have heavy, well-developed, and balanced top with vigorous well developed root system, furnished in containers.
- (k) Measurement. Plant measurements shall be in accordance with the agency having jurisdiction.
- (l) Percolation Test. Perform percolation test to determine positive drainage of plant pits and beds. Identify soil and drainage conditions detrimental to the growth of plant material submit plan to correcting the conditions.
- (m) Soil Test. Perform a soil test for pH, chemical analysis, and mechanical analysis to establish the quantities and type of soil amendments required to meet local growing conditions for the type and variety of plant material specified.
- (n) Installation. Verify the location of underground utilities. When obstructions below ground or poor drainage affect the planting operation, submit proposed adjustments to plant location, type of plant, and planting method or drainage correction. Install plant material during appropriate planting times and conditions recommended by the trade for the type and variety of plant material specified. Excavate and backfill plant pits as recommended by the agency having jurisdiction. Perform the planting operation only during periods when beneficial results can be obtained. When special conditions warrant a variance to the planting operations, submit proposed planting times.
- (o) Pruning. Prune the total amount of foliage by one-fourth to one-third on installed trees and shrubs to compensate for loss of roots and transplanting shock. Retain the typical growth habit of individual plants. Do not "pole" or remove the leader from trees. Do not leader prune or "top-off" the leader.
- (p) Passive Barriers. 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.
- (q) 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.
- (r) 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.
- (s) 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.
- (t) 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. Remove unhealthy or dead plants immediately and replace as soon as seasonal conditions permit in accordance with the following warranty paragraph.

(u) Warranty. Guaranty furnished plant material to be in a vigorous growing condition for a period of 12 months regardless of the contract time period. A plant shall be replaced one time under this guarantee. Transplanting existing plants requires no guarantee.

6.4.12. Turf:

(a) Seed. Provide state approved seed of the latest season's crop 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. Fort Knox Environmental must approve the submitted selection. Contact the Environmental Division at (502) 624-3629.

(b) Sod. Provide State approved sod 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 two (2) 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 will 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. Measurement for thickness shall exclude top growth and thatch. The limitation of time between harvesting and placing sod shall be 36 hours.

(c) Sprig Quality. Provide the cultivar as healthy living stems, stolons, or rhizomes with attached roots, including two (2) or three (3) nodes, from four (4) to (6) inches long, without adhering soil. Provide sprigs which have been grown under climatic conditions similar to those in the locality of the project. Obtain sprigs 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 will 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, seed the areas designated for turf with a temporary seed. When no other turfing materials have been applied, apply the quantity of one-half of the required soil amendments and till the area.

(e) Final Turf. Install turf during appropriate planting times and conditions recommended by the trade for the type and variety of turf specified. Perform turf operations only during periods when beneficial results can be obtained. Maintain drainage patterns. Install turf by using the methods as recommended by the trade for the type and variety of turf specified. Immediately after turfing, protect the area 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. Repair an unsatisfactory stand of turf 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. Place sod 5 feet +/- of the center line in all ditch flow lines and slopes, around each building, and in a 2-foot strip adjacent to all structures such as curbs, sidewalks, roads, catch basins (yard inlets), 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.

(d) Maintenance During Establishment Period.: Maintenance of turfed areas includes 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 Knox will not furnish potable water for irrigation.

6.5. ARCHITECTURE

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 Knox 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 palettes, as described herein.

6.5.1. Design:

6.5.1.1. 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 Knox'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.

6.5.1.2. The design should address Fort Knox'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 identified 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.

6.5.1.3. Priority #1. Visual Compatibility. Facility Massing (Size, Height, Spacing, Architectural Theme, etc.) Exterior Aesthetic Considerations: The building's 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»

6.5.1.4. 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.

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

6.5.1.6. 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 or masonry unit wall systems 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 repellent 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) Day lighting is acceptable in most cases for roofs and walls if applicable to replace artificial lighting. Prismatic Day Lighting is desired for roof skylight systems. Optimize lighting performance with occupancy and photocell control through prismatic lenses to maximize light transmittance to eliminate undesirable hot spots, glare and UV damage to the daylighted space.

Comment [JTH12]: 6.5.2.3. NOTE TO SPECIFIER: See instructions under 6.5. Architecture, Design-Theme tab of the RFP Wizard for instructions.

(d) Provide a removable Interchangeable Core (IC) (A2 FORMAT) integrated keying system for all door lock hardware. IC's shall be compatible with the existing key system used at Fort Knox (Stanley/Best part number: 1CF77P-1-626). All panic hardware and door closers shall be through bolted. The use of YALE brand and Hager brand lock/panic hardware shall not be used. All lock hardware shall be Grade 1. Combination locks used in secured areas shall be Mass Hamilton X09 type. Electric (card reader type) locks shall be stand alone Best BASIS "G" system with encoders and Kiosh. Coordinate installation with the DPW Locksmith Shop. Point of contact is Scott Atwater, Office: (502) 626-2637, mobile: (270) 268-0930.

6.5.1.7. Exterior Building Signage.

(a) Building Number Identification Signage. Provide Building Number Identification Signage per the following criteria. Contact DPW for example if needed.

- Size – 8" x 20" x ¼" thick with ¼" raised characters. Material/Finish – ¼" thick cast aluminum, plain border, black leatherette background with 6" raised characters centered on plaque. Typestyle – Helvetica Medium. Placement/Installation – Minimum of two signs per building located on the front and rear of the structure at the two most prevalent corners for viewing from the street. Verify locations with the COR. Mount not less than 7'-0" from finish grade and secure with four theft-proof anchors.

(b) Multiple Building Number Identification Signage. Provide Building Number Identification Signage per the following criteria. Contact DPW for example if needed.

- Complex identification sign - For projects that include multiple buildings in a complex, such as a barracks complex, provide masonry (match building exterior) complex identification signage, in addition to the individual building signs referenced above. Contact DPW for example if needed.

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

(a) Where required, provide infrastructure for a hard-wired keyless access entry control system to meet remote unlocking requirements related to access/entry control functions for the facilities; to include junction boxes, conduit, pull wires, and electric strikes wired back to a junction box. Coordinate with DPW for specific system requirements. The user provided keyless access control system will provide controlled keyless entry to all regularly used exterior and interior door locations in each facility.

«PROGRAMMABLE_KEY_CARD»</UEPH_NOT>

6.5.3. INTERIOR DESIGN:

6.5.3.1. Communication Room Closets: COMM Closet locks shall be a SIMPLEX PUSHBUTTON LOCK with key over ride. Provide PART # SIL L1021B626, for left hand doors and SILR1021B626 for right hand doors.

6.5.3.2. Interior Building Signage Requirements:

Coordinate review of signage with Fort Knox Fire Department at the 100% design phase review (Michael Tucker, (502) 624-4208, michael.e.tucker26.civ@mail.mil. The Fire Department shall review the correct placement, quantity of signage and the proposed path of egress that will be graphically illustrated on the sign.

«INTERIOR_SIGNAGE»

6.5.3.3. Interior Design Considerations.

(a) Interior Partitions and Walls. Where moisture or moisture infiltration from the wall cavity cannot be eliminated or sufficiently reduced, consider wall coverings with higher permeability ratings. The use of wall coverings that do not breathe such as vinyl wall coverings is not permitted due to the tendency for mold to develop.

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

6.6. STRUCTURAL DESIGN

6.6.1. 6.6.1 Site Specific

Comment [sdn13]: 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

Comment [rbpj14]: NOTE TO SPECIFIER:
Describe any additional project specific requirements for Interior Signage.

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: $S_s = 0.26g$; $S_1 = 0.11g$

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.

6.6.3. Extend bearing portions of substructure to levels below the frost line. Frost penetration is 32 inches below grade.

6.6.4. 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.

6.6.5. Radon Mitigation: Ensure that the building prevents/mitigates the accumulation of radon gas. Fort Knox 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. Route radon piping out through the roof of the building and contain a gooseneck. Provide a 120 volt receptacle in the attic space to provide power for any necessary radon exhaust fan in the future. Point of contact for these items is Bobby Barker, Fort Knox Environmental Division (502) 624-3629, bobby.g.barker.civ@mail.mil.

6.6.6. 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.

6.6.7. 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.

6.6.8. Termite Prevention: Fort Knox has an approved Installation Pest Management Plan (IPMP). Use the current IPMP's approved list of pesticides. All insecticide and pesticide work on Fort Knox must comply with the IPMP. Report the quantity, location and products used to Environmental Management Division, Mike Brandenburg, (502) 624-7368, Michael.g.brandenburg2.civ@mail.mil.

6.7. THERMAL PERFORMANCE

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

6.8. PLUMBING

6.8.1. Piping: Do not use copper pipe for domestic water supply.

6.8.2. Water Heaters: Storage type domestic water heaters greater than 75,000 BTU/hr input shall be direct-vent type and shall have a minimum thermal efficiency of 90% when rated in accordance with ANSI Z21.10.3 and shall have standby losses not exceeding the maximum allowed by ASHRAE 90.1.

6.8.3. Boilers: If a boiler is required to prevent low water temperature in water-source heat pump systems or in ground-coupled heat pump systems, the boiler shall be condensing type and shall have an efficiency of 92% at all conditions at which the boiler will operate.

6.8.4. Heat Recovery: Provide drain heat recovery from showers and kitchen dishwashing equipment using copper vertical-drain heat exchangers when acceptable. Exception; Shower drain fixtures located on slab-on-grade floors.

6.8.5. Low Flow Fixtures: Lavatory faucets shall flow 0.50 GPM maximum at 80 psi supply pressure. Shower heads shall flow 1.50 GPM maximum at 80 psi supply pressure. Shower heads shall be equipped with manual shutoff valve.

6.9. SITE ELECTRICAL AND TELECOMMUNICATIONS SYSTEMS

6.9.1. Electrical Distribution: Perform trenching and backfilling and provide and install ducts on the primary side. Primary ducts shall be PVC with steel 90-degree elbows. Primary ducts under roadways shall be concrete encased. Nolin RECC shall provide and install primary cabling.

6.9.2. New Distribution System: The point of connection for the primary feed to the site shall be

«SITE_ELECTRICAL».

Coordinate connections with Nolin RECC and DPW, Electrical Utility Section. Reference 6.4.6.4. for Nolin points of contact.

(a) Primary distribution. Provide and install PVC ducts on the primary side. Primary ducts under roadways shall be concrete encased. Nolin RECC shall provide and install primary cabling.

(b) Secondary distribution. System shall consist of direct buried conduit and conductors.

6.9.3. Transformers: Nolin RECC will provide and install transformers under separate contract with the Government (NIC). Contractor shall provide concrete pad per Nolin specifications.

6.9.4. Service Entrance: Service entrance equipment shall consist of low voltage switchboard utilizing molded case circuit breakers or switchgear using air circuit breakers. Fused main or distribution sections are not allowed. Equipment shall be sized for the projected use of the building plus 25% (min) for future expansion. Provide secondary surge arrestors at each facility.

6.9.5. Street and Area Lighting: Provide lighting design 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; common area walks, and at all steps in area walkways. Exterior lighting (parking lot, street, building, etc.) shall be HPS. Provide parking lot and security lighting at a maintained level of 0.5 to 1.0 foot-candles and shall have a uniformity ratio, maximum to minimum, of 20:1 or less. Use induction or LED lamps if possible, and park lot lights away from entrances should have occupancy sensors on parking lot lights. Provide photocell control on the exterior of all buildings. Illuminate building entrances to 10 footcandles. Nolin RECC will provide and install street and parking lot lighting (NIC). Contractor to provide and install conduits and concrete bases within the contract price. Nolin RECC will provide and install wiring, poles, and fixtures. POC is Vince Heuser, (270) 765-6153, vheuser@nolinrecc.com.

6.9.5.1. Provide and install photocell control on with external disconnect the exterior of all buildings and street lighting to meet Fort Knox or Nolin RECC street light standards.

6.9.6. Telecommunications: See Appendix J for utility drawings with approximate locations for manholes and services. Coordinate all telecommunications work Fort Knox NEC. POC is Cindi Durham, (502) 624-4169, cynthia.a.durham4.civ@mail.mil or Steve Kirkman, (502) 624-6313, steven.p.kirkman.civ@mail.mil.

6.9.6.1. Commercial telephone, Fort Knox telephone, and cable television wiring may occupy the same trench, but not the same duct/manhole system.

(a) Rotary trenchers or plowing are not allowed during trenching or excavation, except in rear 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. Minimum of 36" cover must be provided for all direct buried and top of duct systems unless directed by NEC.

Comment [JTH15]: 6.9.1. NOTE TO SPECIFIER: Describe the point of connection for the primary feed to the site below.

Comment [JTH16]: Please verify this assumption or clearly state whether the cost is in or not in contract.

Comment [JTH17]: Please verify this assumption or clearly state whether the cost is in or not in contract.

6.9.6.2. Provide and install cabling and duct for the Fort Knox telephone system from the existing exterior system to the building for administrative telephone support. Terminate service entrance cables on protected terminal blocks and all Fiber Optic cables on service entrance termination hardware located in the main communications room. Label Fiber Optic Cables terminated in the facility LIU using the NEC label scheme. The one line label shall consist of the following: «TELECOMMUNICATIONS_CABLE_SELECTION»; Determine the number of copper pairs required to the support facility. Contact NEC POC for availability and location to obtain fiber/copper required. Extend outside plant copper to the racks by a feeder cable. Extend exact pair count to the racks/cabinets and terminated on CAT 6 RJ45 patch panels utilizing 110 connection style terminations. Terminate all riser cables on 110 blocks on backboard in main Telecommunication Room. Terminate Remote Telecommunication Closet's copper riser on RJ45 CAT 6 110 block panels in the racks. Mark outside plant cable with cable number, terminal # and buildings it supports. the Fort Knox NEC or their approved Contractor with compensation by the General Contractor will perform final connections in manhole system, unless prior approval is granted by the NEC. Contractor shall perform all building terminations.

Comment [rbpj18]: NOTE TO SPECIFIER:
Describe the project specific cable requirement.

6.9.6.3. The premises distribution shall consist of inside-plant horizontal, riser, and backbone cables and connecting hardware to transport telephone and data (including LAN) signals among equipment items in a building.

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

6.9.6.5. Do not implement Free Space Optic (FSO) systems unless approved by the NEC.

6.9.6.6. Coordinate with the NEC for a list of areas where 48" of cover is required above the top of the duct or duct encasement.

6.9.6.7. Splice cable either in manholes or pedestals. Do not make buried splices unless NEC approves in writing. No splicing of either fiber or copper in manholes shall occur unless approved by the NEC.

6.9.6.8. Do not use aerial cable, without express Ft Knox NEC agreement and approval for isolated circumstances.

6.9.6.9. 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. Submit 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.

6.9.6.10. Install warning signs in accordance with the following:

- (a) Sign mounted to steel PSP stake; orange in color
- (b) 4' below ground in concrete; rising 5' above ground
- (c) No closer than 2 feet from the center of the ditch
- (d) If there is a change in direction, position a sign immediately at the turn showing the line
- (e) 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.

6.10. FACILITY ELECTRICAL AND TELECOMMUNICATIONS SYSTEMS

6.10.1. Telecommunications:

6.10.1.1. Coordinate all telecommunications work Fort Knox NEC. POC is Cindi Durham, (502) 624-4169, cynthia.a.durham4.civ@mail.mil or Steve Kirkman, (502) 624-6313, steven.p.kirkman.civ@mail.mil

6.10.1.2. Provide dual jacks in lieu of single jacks. Voice/NIPRNET dual jacks shall be two CAT 6 RJ45 type with blue inserts. Provide a common wiring structure. Utilize all jacks as voice or data. Labeling scheme shall consist of patch panel-port # (Ex P1-1/patch panel 1, port 1). Provide and locate Room # of the

Communications Room that supports the jack at the bottom of each faceplate. Label patch Panels in the Communication Closet P1, P2, P3, etc, regardless of panel density. Labeling of the ports internal to the patch panels is not required.

6.10.1.3. Building Cabling Systems Planning/Design. An acceptable BCS encompasses, but is not limited to, copper and fiber optic (FO) entrance cable, termination equipment, copper and fiber backbone cable, copper and fiber horizontal distribution cable, workstation outlets, racks, cable management, patch panels, cable tray, cable ladder, conduits, firestopping, grounding, and labeling. Items under Outside Plant (OSP) Cabling infrastructure encompass, but are not limited to, manhole and duct infrastructure, copper cable, FO cable, cross-connects, terminations, cable vaults and copper and FO entrance cable.

6.10.1.4. Terminate copper distribution on 110 type rack mounted patch panels only. Do not install 110 type patch panels on backboards. Racks/cabinets shall contain an L6-30R and L5-30R electrical outlet mounted at the bottom of the rack. Place a Quad 20Amp NEMA 5-20R circuit directly behind the cabinet/racks on the wall. Provide at least 1 quad 20A per every 2 racks. Racks/cabinets shall contain 6" vertical and 3" horizontal cable management. The NEC POC must approve layout of the wiring within the racks/cabinets. If cable management and patch panels utilize in excess of 50% of rack space, then provide additional rack(s) for installation of house data/voice network equipment (GFE).

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

- (a) Green – Voice and NIPRnet data
- (b) Red – SIPRnet (Secret) data
- (c) Orange – JWICS (Top Secret) data
- (d) Faceplates shall be neutral color. Inserts shall be the same color as the wiring used for that jack.

6.10.1.6. Install Fiber Optic patch panels in cabinets or racks that house the LAN equipment. Do not install fiber optic patch panels on backboards. All new fiber optic terminations shall use LC connectors.

6.10.1.7. Key telecommunication Room doors separate from other locks in the building IAW DPW standards. Provide two copies of the key to the NEC POC. Reference section 6.5.1.6, (d) for additional lock requirements.

6.10.1.8. In case of exterior access to Telecommunication rooms, install equipment cabinet(s) instead of racks. Cabinet(s) shall be dust rated with glass front door and accessible rear panel.

6.10.1.9. Switches. Provide and install switching for partial area lighting for small area use within large areas (i.e. Cafeteria's, Conference Areas, Maintenance Areas). Provide occupancy and light level sensor, on every high bay fixture; time set shall be 0-30 minutes, factory installed is preferred.

6.10.2. Intrusion Detection Systems (IDS): Where applicable to the facility type) the Government will install IDS Point of contact for Fort Knox Physical Security coordination is Mike Kiely at (502) 624-3085 or email michael.s.kiely.civ@mail.mil.

6.10.3. Electronic Security Surveillance (ESS): Where applicable to the facility type, the Government will install ESS Systems. Point of contact for Fort Knox Physical Security coordination is Mike Kiely at (502) 624-3085 or email michael.s.kiely.civ@mail.mil.

6.11. HEATING, VENTILATING, AND AIR CONDITIONING

6.11.1. Integrate the control system to the installation's existing UMCS. Building controls, HVAC controls, and meters shall be compatible with the existing base wide wireless, building automation, Trane Tracer System. All building automation systems installed on post must seamlessly integrate back to the base wide Tracer Summit System. This should include complete interface software capable of programming, configuring, and monitoring the digital controllers. Interface of the new DDC system with the site's existing server and operator workstation and software including graphic creation, scheduling, alarming, and trending. Graphics should be similar to the existing base standard graphics illustrating: map location, building exterior picture, floor plans including drill down buttons,

equipment graphics, comparable points list to existing graphics, and diagnostics. Coordinate with Installation Energy Manager during the design process.

6.11.2. Point of contact for Fort Knox UMCS's is R.J. Dyrdek, Project Manager/Energy Manager Office: ENG & SVCS DIV (IMSE-KNX-PW), [125 6th Ave, Bldg 1110B RM 301, Fort Knox, KY 40121-5719](#), (502) 624-2604, robert.d.dyrdek.civ@mail.mil

6.11.3. Ground Coupled Heat Pump Systems: Give ground-coupled heat pump systems primary consideration. If this system is not used, submit an energy simulation and life cycle cost analysis demonstrating that the proposed system is more life cycle cost effective with the contract proposal. Ground source heat pump units shall have a cooling mode Energy Efficiency Ratio (EER) of 14.0 minimum when rated in accordance with ISO 13256-1 with 77°F entering water.

6.11.4. Fire Protection: Refer to Paragraph 6.13.for additional HVAC Fire Protection requirements.

6.11.5. Outdoor Design Conditions

«HVAC»

6.12. ENERGY CONSERVATION

6.12.1. General: The Government has determined that 30% domestic solar hot water heating is not life cycle cost effective, therefore is not required. There is no need for proposers or the Contractor to perform life cycle cost analysis to justify including or excluding this feature.

6.12.2. 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»

6.12.3. Design Review. Coordinate with Installation Energy Manager during the design process. Point of contact for Fort Knox FMCS's is R.J. Dyrdek at (502) 624-2604 or email robert.dyrdek@us.army.mil.

6.13. FIRE PROTECTION

6.13.1. Fire Alarm Systems

6.13.1.1. The fire alarm control panel shall be fully compatible with Monaco transmitter and the existing Monaco D-21 Central Station. The protected premises Monaco transmitter shall be Contractor furnished/ installed and equipped for 52 reporting zones and Mass Notification ready.

6.13.1.2. SimplexGrinnell, Gamewell FCI, and Notifier 3030 are the only Fire Alarm and Mass Notification systems authorized for installation in Fort Knox facilities based on demonstrated ability to meet UFC 4-021-01 (9 April 2008) and Fort Knox criteria and in order to reduce training, maintenance, and reserve parts cost. The Fire Department may approve specialized systems, depending on the hazard, on a case by case basis. Contact Michael Tucker, (502) 624-4208, michael.e.tucker26.civ@mail.mil

6.13.2. Automatic Sprinkler System: Provide separate fire sprinkler service connection for each facility. On main riser and floor control valve assemblies, install a vane type water flow alarm switch with a maximum delay of 90 seconds, to include a minimum 20 second delay difference between main riser and floor control. Switch will be monitored by building fire alarm system. Summary of system requirements to be provided to HCWD1 during design phase. If system fire flow tests are inadequate for facility requirements, on-site storage and/or other fire pump may be required.

6.13.2.1. Install floor control valve assembly as illustrated in UFC 3-600-01, figure 4-1 for each riser on each floor or space with fire separation (vertical or horizontal orientation). All tampers and water flow switches shall be monitored by fire alarm system via the Signal Line Circuit (SLC).

Comment [sdn19]: NOTE TO SPECIFIER:
In accordance with paragraph 5.9.2, provide the outdoor design conditions that are referred to in paragraph 2.2 in UFC 3-410-01FA.

Comment [sdn20]: Indicate here all renewable energy features that are included in project DD1391 and supported by LCCA. Be specific in description of features.

6.13.2.2. Install remote inspector test valve on the end of the most remote branch line on each floor or space with control valve assembly. Locate inspector test valve in an accessible location, not over 7-feet off the floor that is not exposed to freezing. Terminate the test drain outdoors with appropriate splash guard protection as required.

6.13.2.3. Locate Fire Department Connection (FDC) at readily accessible location on the front of the building. Terminate the backflow preventer test connection to the exterior of the building in a similar manner as the FDC and locate not less than 5-feet away from the FDC. Provide signage using the words "TEST HEADER" in similar manner as for FDC. Locate the test header near the sprinkler backflow preventer.

6.13.2.4. Electrically supervise all sprinkler system water control valves to include sectional control and isolation valves and floor control valves. Electrically supervise backflow preventer test connection water control valves in the closed position. Install a Post Indicator Valve with a tamper switch monitored by fire alarm system.

6.13.3. Standpipe System: Install combination standpipe and sprinkler system in any building regardless of height when the length or width of the building is 200-feet or more. Provide hose cabinets of adequate size to accommodate 100-feet of 2.5-inch, NST fire hose at each hose connection. Provide hose connections at the highest intermediate landings between floor levels in exit stairways.

6.13.4. Combination Fire Alarm and Mass Notification System

6.13.4.1. Provide a combination fire alarm and mass notification system with Monaco (BTX-M) receiver for each facility. Provide transmitter and associated components to accommodate 52 zones. Provide all programming codes, passwords, and associated components required to access, update, modify, and maintain the system shall be provided with training, no later than the date of final system acceptance.

6.13.4.2. Locate fire alarm/mass notification panels and Monaco transmitter in electrical room and provide a remote fire panel annunciator and Local Operator Console (LOC) near the building main entrance. Provide automatic smoke detection at each remote annunciator and Local Operating Console (LOC). Provide manual pull stations at all exterior entrances/exits to include such rooms as mechanical, electrical, and communication rooms. Provide audio/visual notification appliances in such like rooms. Provide exterior speakers around building entrances/exits and other outdoor areas commonly used by building occupants such as smoke shelters and picnic areas. All panel boxes, junction (pull) boxes, and covers shall be "red" in color. Where conduit is required or used, it shall be "red". Whenever possible, all associated panel boxes shall be keyed alike. Detection devices that operate independent from fire alarm system are prohibited. The Signal Line Circuit (SLC) shall be Class A, Style 6. Notification Appliance Circuit shall be Class A, Style Z, and Initiating Device Circuits Class A or B.

6.13.4.3. Each audio amplifier shall be constantly supervised for any condition that could render the amplifier inoperable at its maximum output. Failure of any component shall cause automatic transfers to a designated backup amplifier, illumination of a visual trouble indicator and audible alarm on the control panel.

6.13.4.4. Coordinate Monaco transmitter programming with Fort Knox Fire Department. Contact Michael Tucker, (502) 624-4208, michael.e.tucker26.civ@mail.mil.

6.13.4.5. Provide all administrative areas with both strobes and speakers. Provide a minimum audio level of 70-dba. All measurements are collected with all doors closed.

6.13.4.6. Provide all sleeping rooms with both strobes and speakers.

6.13.4.7. Conductors shall go from device to device and appliance to appliance without splices. Use terminal boards when wire splices are unavoidable. Electrical wire nuts are prohibited. All panels and associated equipment shall operate on the secondary power source for 72-hours in the non-alarm (supervisory) state and 15-minutes in alarm status.

6.13.4.8. Smoke detectors/alarms shall be single station type and connected to the building fire alarm panel via the SLC loop(not via the building electrical system). Provide sleeping rooms, dwelling units, and suite rooms with system smoke detectors with a sounder base. Initially, smoke activates the sounder base on the

detector and the upper level activates the building alarm after 180 seconds. Alarm activation shall annunciate at the fire alarm panel and transmit to the fire department via the Monaco transmitter.

6.13.5. Mass Notification Messages:

6.13.5.1. Pre-program seven messages for the MNS as follows: (MALE VOICE) Repeat all messages twice. Activation names in **bold**.

- (1) **Hazardous Material Emergency – Shelter in place:** C3Tone 2 rounds (Fire Alarm Sound Clips on Wheelock Website): "Attention, Attention. A HAZARDOUS material or other emergency has been reported. Immediately take shelter inside a facility. Accomplish required shelter in-place actions and await further instructions."
- (2) **Hazardous Material Emergency – Evacuate:** C3Tone 2 rounds (Fire Alarm Sound Clips on Wheelock Website): "Attention, Attention. A HAZARDOUS material or other emergency has been reported. Stand by for evacuation instructions."
- (3) **All Clear:** Verbal: "May I have your attention please. May I have your attention please, all clear, the emergency has ended."
- (4) **Routine Test:** Stutter (File 13): 5 seconds "May I have your attention please. This is a test of the Fort Knox Mass Notification System, this is only a test." *POC for Message Steve Robertson, 305 CES/CEX*
- (5) **Force Protection Threat Condition Alert: ; Label as: "FPCON ALERT":** Siren 5 seconds (Fire Alarm Sound Clips from Wheelock Website): "Attention, Attention. The Force Protection Condition for Fort Knox has changed. Tune your television to the commander's access channel or access the base intranet for further information."
- (6) **Tornado Warning:** (tornado wail) Label as: "Tornado Warning", 5 seconds: "Your attention please. A tornado warning has been issued for Fort Knox and the local area. Implement your tornado plan and take shelter immediately."
- (7) **Fire Evacuation:** Two cycles of the temporal 3 pattern, then the evacuation message (twice), then two more cycles of the temporal 3 pattern. The message: "May I have your attention please. A fire emergency has been reported in the building. Proceed clammily calmly to the nearest exit and leave the building immediately. All handicap occupants shall use the building evacuation plan". NOTE: The temporal 3 pattern shall only be used for FIRE EVACUATION messages.

6.13.5.2. **NOTE:** The pre-recorded message alert tone level shall be equal to or not more than 3 DBA above the audio DBA level.

6.13.5.3. Label the LOC buttons as follows:

- (a) HAZMAT SIP (Amber strobes)
- (b) HAZMAT EVAC (Amber strobes)
- (c) ALL CLEAR (Amber strobes)
- (d) ROUTINE TEST (Amber strobes)
- (e) TORNADO (Amber strobes)
- (f) FPCON (Amber strobes)
- (g) FIRE (Clear strobes)
- (h) SPARE
- (i) AMBER VISUAL SWITCH (Amber strobes)

6.13.5.4. Rules:

- (a) When the first button is pushed it shall have priority over any sequential buttons pushed, regardless of message.
- (b) Buttons 1-6 will play the respective MNS message and activate the amber strobes.

- (c) Button 7 will play the fire message and activate the clear strobes, but will not perform any other fire alarm control features as a normal fire would.
- (d) The microphone at the LOC will have priority over any prerecorded message button.
- (e) When activating or keying the microphone at the LOC or ACU, the amber strobes shall activate.
- (f) FACP (ACU) microphone shall take priority over the live voice message from fire dispatch.
- (g) The LOC microphone shall take priority over the live voice message from fire dispatch.
- (h) The LOC microphone located by remote annunciator shall take priority over any other LOC microphone or the live voice message from fire dispatch or prerecorded messages.
- (i) Activation of the "Amber Visuals" switch will turn on or turn off the amber strobes, provided no other button or the microphone has been activated.

6.13.6. Knox Box: Provide and install a 3200 series hinged door recess mounted "Knox Box" part number 3275, manufactured by "The Knox Company" or approved equal. Install the vault in accordance with the manufacturer directions. The vault shall be dark bronze and recess mounted on the exterior wall near the main entrance or near the closest door that leads to the fire alarm/mass notification panels of each building. Equip the vault with a supervisory switch connected to the fire alarm system. Coordinate with the Fire Department for ordering information and compliance. Install the "KNOX" company stainless steel 2.5-inch male NST locking FDC caps or approved equal on each fire department connection. Submit "KNOX" FDC locking caps keys the day the FDC caps are installed.

6.13.7. Portable Fire Extinguishers:

6.13.7.1. 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. .

6.13.7.2. Government will provide ten-pound portable dry chemical (Class ABC) Fire Extinguishers manufactured by Amerex. Government will also provide 6-liter wet chemical portable fire extinguishers in all kitchenettes and commercial kitchens equipped with fixed wet chemical suppression system.

6.13.8. Electromagnetic Door Holders: When required, provide magnetic fire door hold open devices. The electromagnetic holding devices shall be designed to operate on 24-volts. Under normal conditions, the device shall attract and hold the doors open. The initiation of any fire alarm shall cause the release of the electromagnetic door holding device permitting the door to be closed by the door closer. Operation shall be fail safe with no moving parts.

6.13.9. Kitchen Suppression System:

6.13.9.1. Water type suppression systems are prohibited in kitchenette and commercial cooking hood applications.

6.13.9.2. Provide means of manual activation at every means of egress from the area for each system.

6.13.9.3. Provide portable fire extinguishers in commercial and kitchenette cooking areas for fires other than cooking fires in accordance with Paragraph 6.13.7.

6.13.9.4. Submit complete drawings of the system installation, including the hood(s), exhaust duct(s), and appliances, along with the interface of the fire-extinguishing system detectors, piping, nozzles, fuel shutoff devices, agent storage container(s), and manual actuation device(s). Drawings and plans shall be professionally prepared, reproducible and drawn to an indicated scale.

- (a) Illustrate all appliances on drawing.
- (b) Illustrate all nozzles and lines such as plenum, duct, and appliance nozzles including supply and branch lines with dimensions.
- (c) Illustrate all access panels

- (d) Illustrate all heat links and manual pull stations
- (e) Illustrate all fuel shut-off valves and/or electrical circuit breakers.
- (f) Illustrate reset button and system cylinders.

6.13.10. Heating, Ventilation, Air Conditioning (HVAC) Fire Protection Requirements:

6.13.10.1. Provide fire alarm system and duct smoke detectors by same manufacturer.

6.13.10.2. Detection activation shall not activate the building general evacuation notification appliances; however, it shall generate a special supervisory alarm that is transmitted to the Fire Department via the fire alarm/mass notification control panel.

6.13.10.3. Where duct smoke detectors are installed in concealed locations or more than 10' above the finish floor, or in arrangement where the detector's alarm or supervisory indicator is not visible, provide remote indicator and test switch in location that is visible, accessible, and indicates the location of the device.

6.13.11. Elevator Hoistways and Machine Rooms: Provide heat detectors within 2-feet of all sprinklers installed in machine room and hoist way when sprinklers are required. Heat detectors shall have both a lower temperature rating and a higher sensitivity as compared to sprinklers. Heat detectors shall activate prior to sprinkler activation and shut down elevator power via a shunt trip breaker thru the FACP. Program a time delay equal to the amount of time for the elevator to travel from the top of the hoist way to the lowest recall level before activation of the power shunt trip in conjunction with heat detector activation. Water flow or pressure switch shall shut down elevator power immediately upon activation. Water flow or pressure switch shall be connected directly to elevator shunt-trip breaker to shut down elevator power to fire alarm control panel for notification purposes only. The use of devices with time delay switches or time delay capability is not permitted.

6.14. SUSTAINABLE DESIGN

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

Comment [sdn21]: [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 [sdn22]: [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. 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

Comment [sdn23]: 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.

Comment [sdn24]: 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).

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». <ADMININGOV>Administration/team management of the online project will be by the Government. <ADMININGOV><ADMINSHARED>Administration/team management of the online project will be 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 «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.

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 [sdn25]: 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 [sdn26]: 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 [sdn27]: Select paragraph below if the project ONLY has exempt facilities and is not required to achieve LEED Silver.

Comment [sdn28]: 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 [sdn29]: 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» 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. Safety and Health Requirements for Construction Activities:

6.15.1.1. Provide a site specific Accident Prevention Plan for all work performed in accordance with IAW EM 385-1-1 Appendix A.

6.15.1.2. Provide the Installation Safety Office with employee training certification documents if equipment containing a radioactive source is needed. Information provided should consist of equipment use and the duration.

6.15.1.3. Contractors conducting subsurface work shall evaluate the construction area for possible Unexploded Ordinance (UXO). If a possible UXO is discovered notify 911 immediately.

Comment [sdn30]: 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 [sdn31]: 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.

6.15.1.4. Contact both the Fire Department and Installation Safety Office prior to entering a confined space.

6.15.2. Spill Response Procedure and Plan:

6.15.2.1. Notify the Fire Department immediately in the event of a hazardous spill by calling 911. The first person on-scene that identifies the hazard must notify the Fire Department – this may or may not be the designated POC.

6.15.2.2. After notifying the Fire Department, call the DPW Environmental Branch, the Army Corps of Engineers' Administrative Contracting Officer, and the Installation Safety Office.

6.15.2.3. The Fort Knox Fire Department and DPW Environmental Branch are responsible for any off-installation notification.

6.15.2.4. For the spill control (Spill Response) plan, as part of the Environmental Protection Plan required by Section 01 57 20.00 10, also include a listing of the hazardous materials stored on site, and a site diagram outlining where the storage sites are located. Train all supervisors on site in the execution of the Spill Plan. Document all training.

6.15.3. Solid Waste Disposal/Diversion Practices: Solid Waste Disposal/Diversion Practices shall be in accordance with Appendix E, Environmental information. All construction activities at Fort Knox 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.

6.15.3.1. 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 cost 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 that 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 for disposal from the revenue generated by the sale of materials and the incineration and/or landfill cost avoidance.

6.15.4. Contaminated Soils: In the event that abnormalities, discolorations, odors, oil or other signs of potential contamination by hazardous materials are encountered during excavation, soil borings or other construction activities, stop work, and notify the Government immediately. Follow with written notice within 24 hours, indicating

date, time and location of potential contaminants encountered. In the event contaminated soil is encountered, all field and laboratory technicians must be trained and certified for handling hazardous materials.

6.15.5. Installation Forester: The Installation Forester must complete a survey before any trees with diameters greater than 6 inches are removed between April 1 and October 15. Trees 6-inches and above diameter at breast height provide habitat for endangered species. This is in addition to Section 3.1 Land Resources under Section 01 57 20.00 10.

6.15.6. Wetlands: No jurisdictional wetlands have been identified on the project site.

6.15.7. Solid Waste: There is no record of landfill or solid waste management areas present at the project site.

«ENVIRONMENTAL»

Comment [JTH32]: 6.15.6. NOTE TO SPECIFIER: See 6.15. Environmental tab in the RFP Wizard for further instructions.

6.16. PERMITS

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

6.16.1. Excavation Permit. Obtain approved excavation permits prior to digging. Request for excavation permits shall be in accordance with installation policies. Coordinate all excavation activities with the Project Engineer. Coordinate with the appropriate utility service to mark underground utilities (gas/water/sewer/electric/steam/chill water/storm/fuel lines/drain, and telephone and cable) in the vicinity of the excavation no earlier than three days prior to work being started.

6.16.2. Air Permits (Fuel Burning Equipment). Provide air permit information through the COR to Fort Knox Environmental Division. Obtain a construction/operation permit prior to construction. Provide information for the permits using the Checklist for Non-Process Source and the Vent Stack Checklist. Checklists are included at the end of this specification in Appendix C of this specification. Complete each checklist for each piece of fuel-burning equipment. Fort Knox has requested that they be informed of the size and type of units to be installed as soon as it is known. Fort Knox will forward generic permit applications to the State to expedite the process. When the specific equipment information is known, forward it to Fort Knox for completion of the applications. No construction may begin until these permits are obtained. Point of contact for these items is Lu Jenkins, Fort Knox Environmental Division ([502](tel:624-8379)) 624-8379, luther.v.jenkins.civ@mail.mil.

6.16.3. Air Permits (Cooling Equipment). Provide air permit information through the COR to Fort Knox Environmental Division. Obtain a construction/operation permit prior to construction. Provide cooling equipment information (chillers, heat pumps, cooling towers, condensing units, etc.), including equipment type, equipment capacity, refrigerant type in each piece of equipment, and amount of refrigerant in each piece of equipment. Submit information as soon as possible. No construction may begin until these permits are obtained. Point of contact for these items is Eric Brown, Fort Knox Environmental Division.

6.16.4. Water Permits. Any changes to the water distribution system require a permit from the Commonwealth of Kentucky. Prepare the application for permit for work involving the water distribution system. Submit four (4) copies of the application to the State. HCWD1 can provide information on the required permit. POC for HCWD1 is Preston Pendley, P.E. at (270) 352-4280, ext 224.

6.16.5. Sanitary Sewer Permits. Any changes to the sanitary sewer system require State approval. Prepare the application for permit for work involving the sanitary sewer system. The utility owner, Hardin County Water District No. 1 (HCWD1), and Fort Knox will review the permits. Submit four (4) copies of the application to the State. HCWD1 can provide information on the required permit. POC for HCWD1 is Preston Pendley, P.E. at (270) 352-4280, ext 224 and Veolia Water is Kenny Morley (502) 942-6020. Point of Contact for Fort Knox is Warren Clifford, (502) 624-7917.

6.16.6. Erosion and Sediment Control Permit. No ground disturbing activities will occur without first securing a National Pollution Discharge Elimination System (NPDES) permit. Submit a Storm Water Pollution Prevention Plan through the COR to the Fort Knox Environmental Management Division for review and approval. When approved, this SWPPP becomes an addendum to the Knox KPDES permit. The project contract drawings shall

include Pollution Prevention Plans to be undertaken by the Contractor and in accordance with the NPDES permit. No Notice of Intent from the State is required.

6.17. DEMOLITION

«DEMOLITION»

Comment [JTH33]: 6.17. NOTE TO SPECIFIER: Describe all aspects of demolition requirements.

6.18. ADDITIONAL FACILITIES

«ADDITIONAL_FACILITIES»

Comment [JTH34]: 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.

End of Section 01 10 00<TO>.«TONUM»</TO>

SAMPLE