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1.0 PROJECT OBJECTIVES

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

Comparison of Military Facilities to Civilian Facilities

Military Facility	Civilian Facility
Battalion/Brigade Headquarters (BH)	Office

1.0.3 1.0.2 It is the Army's objective that these buildings will have a 25-year useful design life before a possible re-use/re-purpose or renovation requirement, to include normal sustainment, restoration, modernization activities and a 50-year building replacement life. Therefore, the design and construction should provide an appropriate level of quality to ensure the continued use of the facility over that time period with the application of reasonable preventive maintenance and repairs that would be industry-acceptable to a major civilian sector project OWNER. The site infrastructure will have at least a 50-year life expectancy with industry-accepted maintenance and repair cycles.The project site should be developed for efficiency and to convey a sense of unity or connectivity with the adjacent buildings and with the Installation as a whole.

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

1.1. SECTION ORGANIZATION

This Section is organized under 6 major “paragraphs”.

(1) Paragraph 1 is intended to define the project objectives and to provide a comparison between the military facility(ies) and comparable “civilian” type buildings.

(2) Paragraph 2 describes the scope of the project.

(3) Paragraph 3 provides the functional, operational and facility specific design criteria for the specific facility type(s) included in this contract or task order.

(4) Paragraph 4 lists applicable industry and government design criteria, generally applicable to all facility types, unless otherwise indicated in the Section. It is not intended to be all-inclusive. Other industry and government standards may also be used, where necessary to produce professional designs, unless they conflict with those listed.

(5) Paragraph 5 contains Army Standard Design Criteria, generally applicable to all facility types, unless otherwise indicated in the Section.

(6) Paragraph 6 contains installation and project specific criteria supplementing the other 5 paragraphs.

2.0 SCOPE

2.1. BATTALION HEADQUARTERS (Bn HQ)

Provide BATTALION HEADQUARTERS (Bn HQ). This project type is to house Battalion administrative and command operations. It is intended to be similar to office type buildings in the private sector community. Assume 20 percent of personnel are female unless otherwise indicated.

The project will include 0 small (14,000 SF), 0 medium (16,400 SF), and 1 large (18,100 SF) stand alone Battalion Headquarters buildings for 52nd Engineer Battalion. The maximum gross area for the Battalion Headquarters in the project is limited to 18,100 square feet.

2.2. SITE:

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

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

Approximate area available for this (these) facility(ies) is shown on the drawings.

Provide all site improvements necessary to support the new building facilities. Refer to Paragraph 6.

Approximate area available 3.10 acres

2.3. GOVERNMENT-FURNISHED GOVERNMENT-INSTALLED EQUIPMENT (GFGI)

Coordinate with Government on GFGI item requirements and provide suitable structural support, brackets for projectors/VCRs/TVs, all utility connections and space with required clearances for all GFGI items. Fire extinguishers are GF/GI personal property, while fire extinguisher brackets and cabinets are Contractor furnished and installed CF/CI. All Computers and related hardware, copiers, faxes, printers, video projectors, VCRs and TVs are GFGI.

The following are also GFGI items: None

2.4. FURNITURE REQUIREMENTS

Provide furniture design for all spaces listed in Chapter 3 and including any existing furniture and equipment to be re-used. Coordinate with the user to define requirements for furniture systems, movable furniture, storage systems, equipment, any existing items to be reused, etc. Early coordination of furniture design is required for a complete and usable facility.

The procurement and installation of furniture is NOT included in this contract. Furniture will be provided and installed under a separate furniture vendor/installer contract. The general contractor shall accommodate that effort with allowance for entry of the furniture vendor/installer onto this project site at the appropriate time to permit completion of the furniture installation for a complete and usable facility to coincide with the Beneficial Occupancy Date (BOD) of this project. The furniture vendor/installer contract will include all electrical pre-wiring and the whips for final connection to the building electrical systems however; the general contractor shall make the final connections to the building electrical systems under this contract. Furthermore, the general contractor shall provide all Information/Technology (IT) wiring (i.e. LAN, phone, etc.) up to and including the face plate of all freestanding and/or systems furniture desk tops as applicable, the services to install the cable and face plates in the furniture, the coordination with the furniture vendor/installer to accomplish the installation at the appropriate time, and all the final IT connections to the building systems under this contract.

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

2.5. NOT USED

3.0 BATTALION HEADQUARTERS

3.1. GENERAL

Provide Battalion Headquarters (HQ) Facility. This project shall provide facilities to accommodate Battalion administrative and command operations. It is intended to be similar to office type buildings in the private sector community. The Battalion Headquarters and its function are more fully described in paragraph 3.2.2 BATTALION HEADQUARTERS - DESIGN REQUIREMENTS. The preferred functional layouts are depicted in the drawings included with this RFP. The extent to which the drawings represent required features and the allowable latitude for changes is as noted on the drawings.

3.1.1. ADAPT-BUILD MODEL

An Adapt-Build Model for a Battalion (HQ) , which contains a fully developed design, including a Building Information Model (BIM), 2-D CADD files, and specifications, can be downloaded from the following FTP site: ftp://ftp.usace.army.mil/pub/sas/BDE-BN_HQ/. This design is provided as a guide that exemplifies a technically suitable product and incorporates mandatory functional/operational requirements for a similar (although perhaps not an exact) facility to be constructed under this solicitation. It will be left to the offerors' discretion if, and how, they will use the sample design provided to satisfy the requirements of this Request for Proposal. This model is not intended to modify or over-ride specific requirements of this RFP and, under all circumstances, it will be incumbent upon the successful offeror to adhere to the site specific scope and functional/operational requirements specified within the RFP. Neither this statement of work, nor the adapt-build model, are intended to diminish the offeror's responsibilities under the clauses titled "Responsibility of the Contractor for Design," "Warranty of Design," and "Construction Role During Design." The successful offeror shall be the designer-of-record and shall be responsible for the final design and construction product, including but not limited to, adherence to the installation architectural theme, building code compliance and suitability of the engineering systems provided. The government assumes no liability for the model design provided and, to the extent it is used by an offeror, the offeror will be responsible for all aspects of the design as designer-of-record.

3.1.2. FACILITY RELATIONSHIPS

Battalion (HQ) Headquarters shall be located within an operations complex along with Company Operations Facilities (COF) and Tactical Equipment Maintenance Facilities (motor pools). The facilities within this complex shall be oriented to support deployment and daily operations, and should also be located within walking distance of associated community facilities such as barracks and dining facilities.

3.1.3. GROSS BUILDING AREA:

Gross areas of facilities shall be computed according to subparagraphs below. Maximum gross area limits indicated in Paragraph 2.0, SCOPE, may not be exceeded. A smaller overall gross area is permissible if all established net area program requirements are met.

(1) Enclosed Spaces. The gross area includes the total area of all floors, including basements, mezzanines, penthouses, usable attic or sloping spaces used to accommodate mechanical equipment or for storage with an average height of 6'-11" measured from the underside of the structural system and with the perimeter walls measuring a minimum of 4'-11" in height, and other enclosed spaces as determined by the effective outside dimensions of the building.

(2) One-Half Spaces. One-half of the area will be included in the gross area for balconies and porches; exterior covered loading platforms or facilities, either depressed, ground level, or raised; covered but not enclosed passageways or walks; covered and uncovered but open stairs; and covered ramps.

(3) Excluded Spaces. Crawl spaces; exterior uncovered loading platforms or facilities, either depressed, ground level, or raised; exterior insulation applied to existing buildings; open courtyards; open paved terraces'; roof overhangs and soffits for weather protection; uncovered ramps; uncovered stoops; and utility tunnels and raceways will be excluded from the gross area.

3.1.4. FUNCTIONAL SPACES:

Net area requirements for functional spaces are included in the drawings. If net area requirements are not indicated, the space shall be sized to accommodate the required function, comply with code requirements, comply with overall gross area limitations and other requirements of the RFP (for example, area requirements for corridors, stairs, and mechanical rooms will typically be left to the discretion of the Offeror).

3.1.5. ADMINISTRATIVE FACILITIES:

Provide centralized areas for photocopier, laser printer and fax machine with waste and paper recycling receptacles and supply cabinet for paper storage in each office area. Hours of operation are normal business hours except where indicated otherwise.

3.1.6. HANDICAPPED ACCESS:

Battalion (HQ) Headquarters are to be handicapped accessible.

3.1.7. ADAPT-BUILD GUIDANCE:

See Appendix entitled ADAPT-BUILD MODEL, which contains a proposal selected as the best value submission for a similar facility to be constructed in the region encompassed by this contract. The functional layout and design approach it demonstrates is provided as a guide for subsequent task orders to be issued against this contract. However, the Contractor must adhere to the specific direction and unique project requirements included within this Request For Proposal. Also, the Contractor shall be responsible for the final design and construction product, including but not limited to, building code compliance and suitability of the engineering systems provided.

3.2. FUNCTIONAL AND OPERATIONAL REQUIREMENTS

3.2.1. Omitted

3.2.2. BATTALION HEADQUARTERS - DESIGN REQUIREMENTS

3.2.2.1. General:

The Battalion Headquarters facility is comprised of administration, special functions, and classroom components as described in the paragraph Functional Space Descriptions and Performance Requirements. In conjunction with these, each site-specific project shall include necessary site amenities such as vehicle service yards, access drives, and exterior utilities. Space will be provided for a command section, S-1, S-2, S-3, S-4, S-6, utilities and support services. Private offices will be provided for the commanding officer, executive officer, command sergeant major, S-1 officer, S-2 officer, S-3 officer, S-4 officer, S-6 officer, Human Resources NCO, chaplain, and assistant chaplain. Space will also be provided for clerical and central files, conference room, staff duty station, message center and mail sorting, reception, secure documents room, showers, supplies, toilet facilities, vending, recycle closet, mechanical room, electrical rooms, telecommunication rooms, and classrooms. A staff duty station shall be provided at primary entrances to the building, whether the battalion headquarters is located in a combined Battalion/Brigade HQ or as a stand-alone building. The stand-alone Battalion Headquarters facility is a two story facility with secure zone 1 spaces on the ground floor and secure zone 2 spaces on the second floor. A separate cluster of classrooms is provided on the ground floor, and is segregated from other building components to minimize disruption to normal headquarters activities.

3.2.2.2. Battalion Headquarters Program Requirements

The programmatic requirements for the Battalion Headquarters are as indicated on the drawings. Note that the Battalion Headquarters structure is similar for all army battalions and the main difference is size. See the Room Size and Furnishings Chart for other room information.

3.2.2.3. Battalion Headquarters Adjacency Matrix

Battalion Headquarters adjacency matrix notes:

1. Personnel: Combined with S4 as a sustainment section.

2. S1/PAC: Personnel Action Center. Provides customer service. Location should avoid cross traffic with the command group.

3. S5 Plans: combined with S3.

4. Chemical, Biological, Radiological, Nuclear and Explosives: collocated with S3.

5. In the consolidated Battalion/Brigade HQ concept, the staff sections for each battalion headquarters shall be consolidated on a single floor, and the brigade staff sections shall be physically separated from battalion staff sections.

6. Security Zone areas shall be segregated from one another by space separation, physical barriers, or placement of spaces on separate floors of the building.

3.2.3. Functional Space Descriptions and Performance Requirements

Command Section	Zone 1	The command section corresponds to the office of the CEO of a corporation. It needs to be located away from heavy traffic activities and must provide a means for support personnel to control the flow of visitors. It also needs to be located with proximity to the main entrance that allows visitors to have access to the reception area without moving through operational areas of the building such as SCIF, BOC, and the work areas of the S-2 and S-3. The legal staff, public affairs staff and the chaplain are outside the area controlled by the commander's assistants. They need ready access to the commander on a recurring basis, but they also have their own visitors who normally should not come inside the command suite.
S-1	Zone 1	The S-1 office (Human Resources) is equivalent to the human resources department of a corporation. While the S-1 has representatives who support operational activities in the building, they serve a clientele that often does not have a requirement for access to operational areas. While it corresponds to the human resources department, it generally does not provide customer service to individual soldiers. Rather, the S-1 serves human resource specialists from subordinate organizations and agencies. The S-1 section frequently provides the personnel who control access to the commander and so proximity to the command suite is recommended as long as traffic to the S-1 does not invade the privacy of the command suite.
S-2	Zone 2	The S-2 office (Intelligence Surveillance and Reconnaissance) supports the commander in the areas of opposition research, terrain analysis and weather. The activity of the S-2 section involves a variety of secure communications capabilities and much of their workspace is inside of the SCIF (Brigade Headquarters only) portion of the building and requires strict access control. They also require direct access to a secure exterior vehicle compound adjacent to the SCIF. It should be located away from areas that have customer service activities related to other sections.
S-3	Zone 2	The S-3 (Coordinating Staff Office – Operations, Plans and Training) officer's functions are similar to those of the chief of operations officer of a corporation. The S-3 section is responsible for planning, coordinating and supervising the mission functions of the brigade. Because the S-3 integrates the operational functions of the other staff sections as they relate to the mission, it should be as centrally located as possible consistent with other requirements and constraints. The S-3 is responsible for managing the brigade operations center (BOC) (Brigade Headquarters Only), which is a restricted area. Much of the work of the

		S-3 involves dealing with classified information and communications means and, as such, it should be isolated from activities that generate traffic that is not related to the operational function of that section.
S-3	Zone 2	The S-3 Special Staff Office houses a variety of staff elements that are generally autonomous from one another, but which work under the direction of the S-3 office. Each section is aligned with a special function that directly supports the operations of the brigade or battalion and which must be carefully integrated into the S-3 office. Each section is aligned with a special function that directly supports the operations of the headquarters and which must be carefully integrated into the overall operations of the command. When the BOC is active each of these sections provides support staff inside the BOC. Within the section the aviation, fires and effects, and air defense elements have a high degree of interaction. The engineer and chemical elements are more independent of the other sections. Like the S-3 coordinating staff they should be located in a manner that isolates them from activities that generate traffic that is not related to the operational function of that section such as the S-1 and S-4.
S-4	Zone 1	The logistics operations office is responsible for the administration of the logistics, transportation and maintenance functions and programs within the brigade. It does not perform any industrial type functions. It generates traffic that should be excluded from operational areas. It does not provide direct customer service. Most of the traffic it generates will be logistics, transportation and maintenance managers from subordinate organizations.
S-7	Zone 2	The S-7 Information Operations office plans and conducts sensitive operations involving the relationship between the military and the civilian populations when the brigade is deployed. They have a high correlation to the S-3 Operations and Plans officers, the BOC and the SCIF. They should be located away from high traffic areas. The S-7 section needs to have ready access to the SCIF and the BOC. The personnel spaces in this section are from other organizations.
Battalion Headquarters Organizational Classrooms	Zone 1	Classrooms (Battalion Headquarters only) shall be provided for training and other ceremonial and gathering functions for all battalions. Organizational classrooms are authorized for individual battalions when battalion HQs are built as stand-alone or consolidated with a Brigade. There will be a maximum of three classrooms per battalion. The classrooms should be built as a contiguous area with partitions to allow the facility to provide maximum flexibility. When multiple battalion classrooms are consolidated in a single building, i.e. consolidated brigade/battalion headquarters, they shall be reduced in number by 50% since the consolidated headquarters option enables alternating use of classrooms by battalions.

3.3. TECHNICAL REQUIREMENTS

3.3.1. Site Design

The following site design requirements are applicable to the design of the Battalion Headquarters (HQ) Facility. :

(1) Omitted

(2) Exterior Lighting. Sidewalks, service yards and parking areas shall have exterior lighting. See Chapter 6 for additional information and requirements.

(3) Privately Owned Vehicles (POV) Parking. POV parking shall be provided at a ratio of one space for 90% of the intended HQ staff capacity.

3.3.2. Architecture Design

Exterior architectural features of the building shall be designed based on the following and in accordance with the Installation Design Guide.

(1) Natural Lighting. Provide windows for natural lighting and ventilation in all office areas, ensuring compliance with Anti-Terrorism/Force Protection requirements.

(2) Building Entrance. Provide attractive entry features such as canopies and large glass wall surfaces, ensuring compliance with Anti-Terrorism/Force Protection requirements.

(3) Sound Insulation. Provide sound insulation to meet a minimum rating at doors, walls and floor/ceiling assemblies of STC 45 in the Command Conference Room for the Battalion (HQ) Headquarters as required per ASTM E413-04, Classification for Rating Sound Insulation. Provide sound insulation in all other areas of the Battalion (HQ) Headquarters to meet a minimum rating of STC 42 at walls and floor/ceiling assemblies, and a rating of STC 33 for doors, which are to be solid core wood in a metal frame. In addition to the sound insulation required, video teleconferencing areas shall meet a Noise Criteria (NC) 30 rating in accordance with ASHRAE Fundamentals Handbook.

(4) Office and Administrative Areas. The open office areas for staff sections (S-1, and S-2, etc.) in different security zones should be separated from one another by physical separation, walls, or floors. The intent is to provide visual separation between staff sections within a headquarters, with maximum flexibility for future change within open office areas. A similar preference exists for private offices within the staff section, with the exception that they will require doors for privacy. The command section offices shall be constructed to provide privacy and sound control in accordance with SOUND INSULATION paragraph above. The intent for the command section offices is to provide a more permanent type of construction, but still to minimize load-bearing walls so as to accommodate future reconfiguration. This same construction requirement exists for walls between headquarters in a consolidated headquarters facility.

(5) Message Center. Construct the Message Center / Mail Sorting Room to provide adequate security for mail storage and distribution. Structural requirements are as follows: Provide doors with suitable locks and door hinges. Lock shall be a key-operated, mortised, or rim-mounted lock; have a dead bolt throw of one inch; be of double cylinder design; have five pin tumbler cylinders; with two of mushroom or spool-type drive pin design; have 10,000 key changes; have no master key and contain hardened saw resistant steel inserts if the bolt is visible when locked. The strike shall be made of steel. A high security padlock and hasp may be used in lieu of above. Mount the hinges inside to prevent their removal from the outside. Door hinges mounted on the outside shall have non-removable or spot welded pins. Access doors shall be of sheet metal material not less than 16 gauge in thickness, or a solid wooden door covered on the outside with a steel plate not less than 12 gauge in thickness. Ground level windows shall have bars. Cover above ground level windows with wire mesh security screen. Walls and ceilings shall be constructed of material to prevent forcible entry. Minimum requirements shall be to provide expanded steel fabric behind gypsum board walls and ceiling. Provide provisions for ICIDS (Internal Commercial Intrusion Detection System) in facilities that are not operational on a 24-hour basis. AT/FP requirements for Mail Rooms as specified in UFC 4-010-01 are not applicable for the Message Center / Mail Sorting Room.

3.3.3. Fire Protection

(1) Standards and Codes. All fire protection and life safety features shall be in accordance with UFC 3-600-01 and the criteria referenced therein. Battalion (HQ) Headquarters Facilities shall be classified as mission essential and shall be provided with complete sprinkler protection.

(2) Fire Protection and Life Safety Analysis. A fire protection and life safety design analysis shall be provided for all buildings in the project. The analysis shall be submitted with the interim design submittal. The analysis shall include classification of occupancy (both per the IBC and NFPA 101); type of construction; height and area limitations (include calculations for allowable area increases); life safety provisions (exit travel distances, common path distances, dead end distances, exit unit width required and provided); building separation or exposure protection; specific compliance with NFPA codes and the IBC; requirements for fire-rated walls, doors, fire dampers, etc.; analysis of automatic suppression systems and protected areas; water supplies; smoke control

systems; fire alarm system, including connection to the base-wide system; fire detection system; standpipe systems; fire extinguishers; interior finish ratings; and other pertinent fire protection data. The submittal shall include a life safety floor plan for all buildings in the project showing occupant loading, occupancy classifications and construction type, egress travel distances, exit capacities, areas with sprinkler protection, fire extinguisher locations, ratings of fire-resistive assemblies, and other data necessary to exhibit compliance with life safety code requirements.

(3) Sprinkler System. The Facility shall be fully protected with automatic sprinkler systems. All floors and all areas of the facilities shall be protected. The sprinkler system design shall be in accordance with UFC 3-600-01 and NFPA 13. The sprinkler hazard classifications shall be in accordance with UFC 3-600-01, NFPA 13, and other applicable criteria. Design densities, design areas and exterior hose streams shall be in accordance with UFC 3-600-01. The sprinkler systems shall be designed and all piping sized with computer generated hydraulic calculations. The exterior hose stream demand shall be included in the hydraulic calculations. A complete sprinkler system design, including sprinklers, branch lines, floor mains and risers, shall be shown on the drawings. The sprinkler system plans shall include node and pipe identification used in the hydraulic calculations. All sprinkler system drains, including main drains, test drains, and auxiliary drains, shall be routed to a 2-foot by 2-foot splash block at exterior grade.

(a) Sprinkler Service Main and Riser. The sprinkler service main shall be a dedicated line from the distribution main. Sprinkler service and domestic service shall not be combined. The sprinkler service main shall be provided with an exterior post indicator valve with tamper switch reporting to the fire alarm control panel (FACP). The ground floor entry penetration shall be sleeved per NFPA 13 requirements for seismic protection. The sprinkler entry riser shall include a double check backflow preventer, a fire department connection, and a wall hydrant for testing of backflow preventer. The sprinkler system shall include an indicating control valve for each sprinkler system riser, a flow switch reporting to the FACP, and an exterior alarm bell. All control valves shall be OS&Y gate type and shall be provided with tamper switches connected to the FACP. Facilities with multiple floors shall be provided with floor control valves for each floor. The floor control valve assembly shall be in accordance with UFC 3-600-01, Figure 4-1..

(b) Exterior Hose Stream. Exterior hose stream demand shall be in accordance with UFC 3-600-01. Exterior hose stream demand shall be included in the sprinkler system hydraulic calculations.

(c) Backflow Preventer. A double check backflow preventer shall be provided on the fire water main serving each building. This shall be located within the building. An exterior wall hydrant with dual hose connections with OS&Y valve shall be provided to allow testing of backflow preventer at design flow as required by NFPA 13.

(d) Fire Department Connection. A fire department connection shall be provided for each building with sprinkler protection. These shall be located to be directly accessible to the fire department.

(4) Elevators. The fire protection features of elevators, hoist ways, machine rooms and lobbies shall be in accordance with UFC 3-600-01, ASME A17.1, NFPA 13 and NFPA 72.

(5) System Components and Hardware. Materials for the sprinkler system, fire pump system, and hose standpipe system shall be in accordance with NFPA 13 and NFPA 20.

(6) Protection of Piping Against Earthquake Damage. Sprinkler and fire pump piping systems shall be protected against damage from earthquakes. Seismic protection shall include flexible and rigid couplings, sway bracing, seismic separation assemblies where piping crosses building seismic separation joints, and other features as required by NFPA 13 for protection of piping against damage from earthquakes.

(7) Fire Water Supply. Fire flow test data is provided in Appendix D.

(8) Fire Pump. The requirement for a fire pump installation shall be determined by the Contractor based on fire flow test data from the project site and fire protection system design requirements for the project. If required a complete fire pump installation shall be provided for the facility. It shall comply with the requirements of UFC 3-600-01, NFPA 13 and NFPA 20. The Contractor shall submit fire pump design analysis and drawings in the design requirements.

(9) Fire Alarm and Detection: Refer to 3.3.5, Electrical and Communication Systems, for requirements.

(10) Building Construction. Construction shall comply with requirements of UFC 3-600-01, the International Building Code, NFPA 101, and NFPA 75.

(a) Fire Extinguishers Cabinets and Brackets. Fire Extinguisher cabinets and brackets shall be provided when fire extinguishers are required by UFC 3-600-01 and NFPA 101. Placement of cabinets and brackets shall be in accordance with NFPA 10. Semi-recessed cabinets shall be provided in finished areas and brackets shall be

provided in non-finished areas (such as utility rooms, storage rooms, shops, and vehicle bays). Fire extinguishers shall not be provided in this contract.

(b) Interior Wall and Ceiling Finishes. Interior wall and ceiling finishes and movable partitions shall conform to the requirements of UFC 3-600-01 and NFPA 101.

(c) Server rooms and other portions of the facility which house MISSION CRITICAL electronic equipment installations (as defined in section 6-8 of UFC 3-600-01), shall be separated from surrounding occupancies by fire-resistance rated construction in accordance with NFPA 75.

3.3.4. Mechanical

(1) Omitted

(2) Design Data

(a) Actual internal equipment loads (i.e. heat dissipation) for finalized HVAC system sizing purposes shall be acquired from the USER or applicable point-of-contact (POC), and is the responsibility of the Design/Build Contractor. For baseline purposes, estimated internal equipment loads (i.e. heat dissipation) shall be as follows: For Communication-type rooms/areas (Tele/Comm, SIPRNet, etc), use 585 watts. For administrative/office type areas with the exception of the Classroom areas, it shall be assumed that each personnel/workstation area, cubicle, and office space is assigned a personal computer (desktop) for HVAC load calculation purposes. For the Classroom areas, it shall be assumed that each personnel is assigned a laptop computer for HVAC load calculation purposes. The overall quantity of personnel within each Classroom area shall be based on one person per 20 square feet of floor area. The quantity of personnel within each Conference room/area shall also be based on one person per 20 square feet of floor area.

TABLE II: INDOOR DESIGN DATA

Heating	
General Indoor Design Temperature	70°F
Communication Room	72°F
Mechanical Rooms (freeze protection)	40°F
Cooling	
General Indoor Design Temperature	75°F
Communication Room	72°F

(3) HVAC System Requirements for Critical Areas and Classrooms

(b) Omitted.

(c) Communications room will each be served by an independent and dedicated air-handling system. Air handling unit system(s) shall not be floor-space mounted within the actual space served.

(d) Omitted.

(e) Omitted.

(f) Each classroom area shall be individually temperature-controlled by the DDC System. Temperature setpoint adjustment shall be accomplished via DDC System by authorized personnel.

(g) Omitted.

(4) HVAC System Requirements for Administrative Areas

The capability of extending the regularly-scheduled operating hours of the HVAC systems (Administrative and Classroom areas) shall be provided. A pass-word protected control device (i.e. control panel) located within the staff duty station is the preferred design approach and arrangement. A separate, dedicated HVAC unit independent of the main building HVAC system shall be provided for the staff duty station, and shall be scheduled for after-normal hour operation only. Administrative areas shall be temperature-controlled by the DDC System. Temperature setpoint adjustment shall be accomplished via DDC System by authorized personnel.

3.3.5. Electrical and Communication System

See Paragraph 6 for clarifications and additional requirements for the electrical and communication systems.

(1) Omitted

(2) Omitted

(3) Interior Electrical and Communications

(a) Electrical

i. Characteristics. Select electrical characteristics of the power system to provide a safe, efficient, and economical distribution of power, based upon the size and types of loads to be served. Use distribution and utilization voltages of the highest level that is practical for the load to be served.

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

iii. Lightning Protection System and Transient Voltage Surge Protection. Design shall be in accordance with NFPA 780 and other referenced criteria. Provide transient voltage surge protection.

iv. Receptacles. Power receptacles shall be provided per NFPA 70 and in conjunction with the proposed equipment and furniture layouts. Provide power, data and telecommunications connectivity to each workstation. A duplex receptacle shall be accessibly located adjacent to each voice, data and CATV outlet. Power poles shall not be used.

v. Omitted

vi. Omitted

vii. Provide a minimum of 20% spare circuit and load capacity at all levels of the power distribution system.

(b) Lighting. Lighting and lighting controls shall comply with the recommendations of the Illumination Engineering Society of North America (IESNA) and the requirements of ASHRAE 90.1. Lighting shall be compatible with security cameras and security requirements.

i. Interior Lighting. Interior ambient illumination shall provide a generally glare free, high quality lighting environment and conform to IESNA RP-1-04.

ii. Interior Lighting Controls. Local manual controls shall supplement automatic controls in offices and specialized areas including all conference rooms. Occupancy sensor controls shall be provided in restrooms, electrical rooms, telecommunications rooms, and similar spaces.

iii. Special Lighting Circuits. All classrooms and conference rooms shall have a circuit for general lighting, a circuit, to focus light on the speaker, and a dimmable circuit to focus light over student desks (or conference table) without glare on audio-video displays. Dimming ballasts shall be capable of dimming to 5 percent. A single lighting system with control capability of meeting all these requirements may be used.

(c) Telecommunications

An acceptable building telecommunications system encompasses, but is not limited to, copper and fiber optic (FO) entrance cable, protectors, termination equipment, racks, cable management, patch panels, copper and fiber backbone cable, conduits, cable tray, cable ladder, copper and/or fiber horizontal distribution cable, outlets, grounding, and labeling. Telecommunications infrastructure shall meet the Installation Information Infrastructure Architecture (I3A) Criteria and ANSI/TIA/EIA requirements

i. Telecommunications Rooms (TR)

Telecommunications rooms and telecommunications entrance facilities shall be provided for the network and voice equipment, and cabling infrastructure. There shall be a minimum of one telecommunications room on each floor, located near the center of the building, and preferably stacked between floors. Additional telecommunication rooms shall be provided as necessary to insure that the horizontal copper cable length does not exceed the 295 foot limitation. The telecommunications rooms shall be designed and provisioned in accordance with I3A and ANSI/TIA/EIA-569-B. A main TR with telecommunications entrance capability shall be provided for each facility, and shall be located on the first floor. The main TR shall serve as the hub for the interior backbone single mode fiber cable and copper riser cable to each of the other TRs. Backbone cabling shall be provided in accordance with I3A.

Each TR shall also have the following requirements:

- Access shall be from a centralized corridor within the building: (No exterior access shall be allowed).
- Door shall be three foot wide opening outward.
- Room shall be a minimum of 8 feet wide to accommodate working clearances around data equipment and racks. Odd shaped TR's (e.g. "L" shaped) that decreases the useable area for backboards, racks, etc. shall be avoided.
- A fire-rated A-C plywood backboard (3/4 inch thick) around interior perimeter.
- Illumination shall be 50 foot-candles (average).

Battalion Headquarters				
	Main TR (1st Floor)		TR (2nd Floor)	
Building	Width Feet (min)	Square Feet (min)	Width Feet (min)	Square Feet (min)
Small	8	90	8	100
Medium	8	125	8	80
Large	8	125	8	80
Extra Large	8	125	8	80

Notes

1. Width is a minimum inside edge of wall to inside edge of wall dimension inside the room. Length shall be greater than or equal to width.

2. Standard Drawings may be adjusted as needed, but the Telecommunications rooms shall not be less than the minimum width and square feet indicated above.

3. Telecommunications rooms shall be rectangular in shape.

ii. Telecommunications Outlets. Telecommunications outlets shall be provided per I3A based on functional purpose of the various spaces with the facility as modified by user special operational requirements and herein. Each headquarters workstation shall have voice and data connection capability. Each conference room and classroom shall have voice capability (minimum one outlet per room) and data connection capability (minimum one outlet per person) in accordance with I3A. A data outlet shall be provided at each copier location. A wall mounted telephone outlet with a single jack shall be provided in each mechanical, electrical, telecommunication rooms, and secure storage rooms. For controlled access areas, provide outlets for wall mounted (GFGI) phones at access points. Additional locations shall be provided based on coordination with the facility user and where required for HVAC, other equipment and as required by I3A.

iii. Cable Trays. Provide cable tray pathways through-out the facility to support the systems required for the construction of the facility as well as user's computer networks, video integration system, telecommunication systems and other specialized electronic systems.

iv. Raised Access Flooring. Areas with high concentrations of cabling will have raised access flooring to accommodate flexibility and growth. Signal grounds shall be provided in a grid pattern under all raised floor areas in accordance with MIL-HDBK 419A. Minimum height of raised flooring shall be 6 inches.

(d) Secure Communications

i. Secure Communications Rooms. The SIPNET room(s) shall be designed and constructed in accordance with the "Building SIPRNET Communications Room – New Construction Guidance", paragraph on the Technical Guide for the Integration of the Secret Internet Protocol Router Network (SIPRNET). These rooms shall be separate dedicated rooms (minimum size shall be 6'X6') and shall include a communication signal ground busbar, connected

to the main telecom room signal busbar via properly sized ground wire (see MIL-HDBK-419-A), and one dedicated 20-amp circuit for the SIPRNet rack/safe, in addition to convenience outlets. The connection to the main telecommunications room will be via a single 2-inch trade size steel conduit in accordance with the I3A Criteria. As an alternative, the space allocated for the SIPRNET room may be incorporated into the telecommunications room if an approved SIPRNET Information Processing System Security Container (IPS) is provided within the combined SIPRNET/telecommunications room.

ii. Secret Internet Protocol Router Network (SIPRNet). The distribution infrastructure shall be designed and constructed in accordance with the Technical Guide for the Integration of the Secret Internet Protocol Router Network (SIPRNET). The word "shall" shall be substituted for the word "should" or “will” in the paragraph “Protective Distribution System” and the referenced publication NSTISSI 7003. A secure outlet box shall be provided in each private office, conference room, and other areas as directed. A Protective Distribution System (PDS) shall be provided in all limited and uncontrolled access areas. Specifications Section 27 05 28.39, Surface Raceways for Communications Systems shall be incorporated into this project. **.** (This section can be obtained at the following URL: ftp://ftp.usace.army.mil/pub/sas/Surface_Raceways/). Surface mounted raceway shall be used instead of the surface mounted conduit unless otherwise directed by the local NEC?DOIM or Physical Security Officer. Category 6 UTP copper cables with red cable jacket shall be included and shall be terminated at both ends in accordance with the I3A Technical Guide for data cables. Where cable runs exceed 295 feet, see guidance in SIPRNET Tech Guide, paragraph “Building SIPRNET Communication Room – New Construction Guidance”.

iii. Secure Videoteleconferencing (VTC). Secure VTC shall be provided in each Battalion Headquarters Command Conference Room , and each . Provisions generally consist of a power connection and two RJ45 SIPRNET outlets (in a secure outlet box).

(e) Cable Television (CATV). CATV shall be provided in all private offices, classrooms, and conference rooms. The cable television system shall consist of cabling, pathways, and outlets. All building CATV systems shall conform to APPLICABLE CRITERIA to include I3A Criteria and the UFC 3-580-01 Telecommunications Bldg Cabling Systems Planning/Design.

(f) Audio/Visual Systems

i. GFGI Projectors. Provisions (consisting of a power receptacle and conduit for signal wiring) for a GFGI projector shall be provided in each conference room and classroom.

ii. Paging systems. A zoned paging system shall be provided throughout eachfacility and integrated with the telephone system.

iii. Video Teleconferencing (VTS) provisions. Video teleconferencing (non-secure) provisions shall be provided in all conference rooms and classrooms. Provisions generally consist of a power connection and two RJ45 data outlets in a double gang outlet faceplate.

(g) Security Infrastructure (Security Equipment NIC). The security infrastructure shall be installed to support Government-furnished equipment including cameras, door alarms, and motion sensors. ICIDS systems, CCTV surveillance systems, and restricted access systems. Provisions shall include dedicated power circuits, communications connections, raceways, and signal wiring for user installed devices. System requirements shall be coordinated with the installation security office.

i. Intrusion Detection and Security Systems. Provision for user provided ICIDS intrusion detection and security systems are required for secure and restricted areas including the Secure Document vaults and the SIPRNet rooms.

ii. TEMPEST Requirements. TEMPEST requirements shall be met on a per site basis dependent on the facility zone type and the equipment NSTISSAM level. All unclassified telecommunications systems and associated infrastructure shall be electrically and physically isolated from all classified telecommunications systems in accordance with NSTISSAM requirements.

(h) Mass Notification System (MNS). A mass notification system shall be provided as required by UFC 4-010-01.

(i) Grounding. The ground counterpoise shall be provided around the building perimeter and shall be utilized for grounding incoming service, building steel, telephone service, piping, lightning protection, and internal grounding requirements. Ground straps shall be provided where required by function and will be connected to the building grounding system. A grounding point shall be provided under each raised access floor. Additional grounding may be provided based on project requirements. Systems shall conform to NFPA 70 National Electrical Code, local codes, and the US Army I3A Criteria.

(j) Fire Detection and Alarm

i. A fire alarm and detection system shall be provided for this facility. It shall comply with the requirements of UFC 3-600-01 and NFPA 72. The system shall be addressable and fully compatible with and integrated with the local installation wide central monitoring system.

ii. Server rooms and other portions of the facility which house MISSION CRITICAL electronic equipment installations (as defined in section 6-8 of UFC 3-600-01), and utilize raised floor systems shall have smoke detectors installed in the space beneath the flooring panels in accordance with NFPA 75. Under-floor detectors shall be connected to the fire alarm system and shall be wired so as to immediately cut power to the electronic equipment in the protected room upon activation.

iii. All initiating devices shall be connected to signal line circuits (SLC), utilizing Class A, Style 6 wiring . All alarm appliances shall be connected to notification appliance circuits (NAC), Class A. A looped conduit system shall be provided so that if the conduit and all conductors within are severed at any point, all NAC and SLC shall remain functional.

iv. Breakglass pull stations shall not be used.

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

3.3.6. Structural Design

(1) Structural Floor Load Requirement for Brigade Secure Documents Room. The floor system for the Secure Documents room of the Brigade Headquarters Facility shall be designed to store up to 12 safe/file-cabinets. The empty shipping dead load of the cabinet is approximately 1021 lbs each. The live load of the safe/file-cabinet will be based on the latest approved addition of IBC for a “Heavy Storage” of 250 psf.

3.3.7. Energy Conservation

(1) Energy Performance. The building, including the building envelope, HVAC, ventilation and exhaust systems, service water heating, power, and lighting systems shall be designed to achieve an energy consumption that is at least 40% below the consumption of a baseline building meeting the minimum requirements of ANSI/ASHRAE/IESNA Standard 90.1 (see paragraph 5.9 Energy Conservation). (Note: Plug loads shall be included in building energy modeling but are subtracted in the final calculation of Energy Performance. See section “Design After Award” for additional guidance.)

(2) Required Energy Conservation Features. All items listed in the required energy conservation features table shall be provided as a minimum. Additional energy conservation features may be required to meet the above energy performance. The contractor is responsible for determining and providing additional energy conservation features to meet the energy performance requirement. Where equipment types are indicated, only minimum efficiencies apply.

(3) Compliance Documentation. The required energy conservation features shown in the table above contributes to the achievement of the above energy performance and are life cycle cost effective for a Battalion and Brigade facility. Use of the required energy conservation features does not eliminate the requirement for energy analysis calculations documenting compliance. The D-B contractor must document compliance with the above energy performance utilizing the methodology described in ASHRAE 90.1, Appendix G as discussed in section 01 33 16 Design After Award. The design analysis shall document each of the features selected to achieve the specified energy performance.

BHQ Climate Zone 5B, Energy Conservation Features Table(7)

Item	Component	Minimum Requirements	
		Assembly Max (2)	**Min R-Value (2)**
Roof	Insulation Entirely Above Deck	U-0.0325	R-30ci
	Attic and Other		R-49
	Solar Reflectance (3)		Cool Roof for Low Slope & Light color all others
Walls	Mass	U-0.0676	R-13
	Steel Framed		R-13 + R-7.5ci

Item	Component	Minimum Requirements	
		Assembly	
		Max (2)	Min R-Value (2)
	Wood Framed and Other		R-13 + R-3.8ci
Floors Over Unconditioned Space	Mass	0.0521	R-16.7ci.
	Steel Joist		R-19
	Wood Framed and Other		R-19
Slab-on-Grade	Unheated	F-0.520	R-15.0 for 24 in.
Doors	Swinging	U-0.50	Insulated
	Non-Swinging	U-0.50	Insulated
Infiltration		0.25 cfm/ft^2 @ 75 Pa (5)	
Vertical Glazing	Window to Wall Ratio (WWR)	10% to 20% – east/west 10% to 40% – north/south	
	Thermal transmittance	U-0.42	
	Solar heat gain coefficient (SHGC)	0.39	
	South Overhangs	Yes; Projection Factor = 0.4	
Interior Lighting	Lighting Power Density (LPD)	≤ 0.9 W/ft^2	
	Occupancy Controls	Manual On/Auto Off (all periodically occupied spaces)	
	Daylighting Controls	Perimeter Zones	
	Plug Load Lighting	Compact Fluorescent (CFL) with electronic ballast	
	All Ballasts	Electronic	
Ducts	Friction rate	0.08 in. w.c./100 feet	
	Sealing	Seal class B	
	Location	Interior only	
	Insulation level	R-6 (6)	
Service Water Heating	Gas hot water storage	90% Et	
	Pipe Insulation(d < 1.5in. / d ≥ 1.5 in.)	1 in. / 1.5 in. (6)	

Notes:

1. **Omitted.**
2. **U-values and R-values** for assemblies and their definitions, requirements, and determinations can be found in ANSI/ASHRAE/IESNA Standard 90.1.
3. **Light colored and cool roofs**: reflect and emit the sun's heat back to the sky instead of transferring it to the building below. "Coolness" is measured by two properties, solar reflectance and thermal emittance. Both properties are measured from 0 to 1 and the higher the value, the "cooler" the roof. A high reflectance keeps much of the sun's energy from being absorbed, while a high thermal emittance radiates away any solar energy that is absorbed, allowing the roof to cool more rapidly. Cool roofs are typically white and have a smooth surface. Commercial roof products that qualify as cool roofs fall into three categories: single-ply, liquid-applied, and metal panels. The solar reflectance and thermal emittance property values represent initial conditions as determined by a laboratory accredited by the Cool Roof Rating Council.

   Cool roofs are cost effective over air-conditioned spaces for buildings located in climate zones 1 - 5. In these locations, a minimum of 75% of the entire roof surface not used for roof penetrations shall be covered with roofing products that comply with one or more of the following:

   - Have a minimum initial SRI of 78 for a low-sloped roof (a slope less than or equal to 2:12) and a minimum initial SRI of 29 for a steep-sloped roof (a slope of more than 2:12).

- Comply with the criteria for the US EPA's Energy Star Program Requirements for Roof Products – Eligibility Criteria.

For industrial buildings with only heating and ventilation, cool roofs can improve the comfort conditions (and hence productivity) in the space.

In order to be considered a cool roof, a solar reflectance of 0.67 when tested in accordance with ASTM C1549, ASTM E903, or ASTM E1918 and, in addition, a minimum thermal emittance of 0.75 when tested in accordance with ASTM C1371 or ASTM E408, or a minimum Solar Reflective Index of 78 when determined in accordance with the Solar Reflectance Index method in ASTM E1980 where standard white is SRI = 100 and standard black has SRI = 0. An SRI can be determined by the following equations:

$$SRI = 123.97 - 141.35(x) + 9.655(x^2)$$

Where

Where α is the solar absorptance (= 1 – solar reflectance) and ε is the thermal emissivity, which were derived from ASTM E1980 assuming a medium wind speed.

The limited color choices available for cool roofs may not be acceptable to the installation. When this conflict cannot be resolved, the designer shall use the highest reflectance available in the roofing type/color acceptable to the installation.

Characteristics of reflective roofing materials.

Roofing Type	Color	New Solar Reflectance	Aged Solar Reflectance	New Thermal Emittance	SRI (ASTM E1980
Roof Coatings	White	0.70 – 0.85	0.50 –0.65	0.85	84 – 106
Roof Coatings	Grey or Tan	0.70	0.50	0.85	84
Roof Coatings	Terra Cotta or Brown	0.40	0.30	0.85	43
Roof Coatings	Aluminized	0.50	0.40	0.50	42
Metal Paint	Red	0.25	0.25	0.83	22
Metal Paint	Terra Cotta	0.35	0.35	0.83	36
Metal Paint	Bright Red	0.35	0.35	0.83	36
Metal Paint	Beige/Off White	0.55	0.55	0.83	63
Metal Paint	Tan	0.45	0.45	0.83	49
Metal Paint	Dark Blue	0.25	0.25	0.83	22
Metal Paint	Medium to Light Blue	0.32	0.32	0.83	32
Metal Paint	Dark Brown	0.25	0.25	0.83	22
Metal Paint	Medium to Light Brown	0.32	0.32	0.83	32
Metal Paint	Dark Green	0.25	0.25	0.83	22
Metal Paint	Medium to Light Green	0.32	0.32	0.83	32
Metal Paint	White	0.65	0.65	0.83	77
Metal Paint	Bright White	0.70	0.70	0.83	84
Metal Paint	Black	0.25	0.25	0.83	22
Metal Paint	Dark Grey	0.25	0.25	0.83	22
Metal Paint	Medium to Light Grey	0.35	0.35	0.83	36
Metal Paint	Pearlescent Colors	0.35	0.35	0.75	32
Galvalume	Unpainted	0.65	0.55	0.05	45
Copper Metal	Unpainted	0.85	0.18	0.03	89
Galvanized Steel	Unpainted	0.40	0.20	0.50	26
EPDM Membrane	Black	0.05	0.10	0.85	0
TPO Membrane	White	0.80	0.60	0.85	99

Roofing Type	Color	New Solar Reflectance	Aged Solar Reflectance	New Thermal Emittance	SRI (ASTM E1980
TPO Membrane	Grey	0.50	0.40	0.85	57
PVC Membrane	White	0.80	0.60	0.85	99
PVC Membrane	Grey	0.50	0.40	0.85	57
Asphalt Shingle	Dark Color	0.10	0.10	0.85	4
Asphalt Shingle	Light Color	0.25	0.25	0.85	23
Modified Bitumen Cap Sheet	Dark Color	0.10	0.10	0.85	4
Modified Bitumen Cap Sheet	Light Color	0.25	0.25	0.85	23
Modified Bitumen Cap Sheet	White	0.50-0.60	0.40 – 0.45	0.85	57 - 71

4. **NR** means there is no requirement or recommendation for a component in this climate zone.
5. **Increased Building Air tightness**. Building air leakage (measured in cfm/ft^2) is the average volume of air(measured in cubic feet per minute) that passes through a unit area of the building envelope (measured in square feet) when the building is maintained at a specified internal pressure (measured in Pascals). ASHRAE has proposed a building air tightness requirement of 0.4 cfm/ft^2 @ 75 Pa as an addendum to Standard 90.1-2004. ASHRAE has also proposed an approach to complying with the new requirement with a pressurization test to show that the building leakage does not exceed 0.4 cfm/ft^2 at 75 Pa. This air tightness requirement provides a number that can be used for the energy simulations and was assumed to be the baseline leakage rate. The air tightness requirement adopted by the U.S. Army for new construction is more stringent than the one proposed by ASHRAE and requires that the leakage rate must not exceed 0.25 cfm/ft^2 at 75 Pa, and was assumed for the energy efficient building models. To convert the values used for building leakage tests at the pressure difference of 75Pa to the values which can be used to calculate required excessive outdoor air supply rates, the following equation can be used $\Delta Q = Q75 * (5/75)^{0.65} = 0.172 * Q75$. The excessive airflow rate for the building complying with the new ASHRAE 90.1 Standard air leakage requirement is 0.069 cfm/ft^2. Respective number for the building built to the Army model RFP requirement is 0.043cfm/ft^2.
6. **Duct and pipe insulation,** values are from the ASHRAE Advanced Energy Design Guide for Small Offices.
7. **Energy Conservation Features tables.** The tables above apply to Battalion and Brigade Headquarters buildings.
8. Schedules. The following facility schedules must be used in all facility energy simulations for purposes of documenting compliance with energy performance requirement.

Battalion and Brigade Headquarters Internal Load Schedules

Hr	Occupancy			Lighting			Plug Loads			Service Hot Water		
	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun

Hr	Occupancy			Lighting			Plug Loads			Service Hot Water		
1	0.00	0.00	0.00	0.05	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
2	0.00	0.00	0.00	0.05	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
3	0.00	0.00	0.00	0.05	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
4	0.00	0.00	0.00	0.05	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
5	0.00	0.00	0.00	0.05	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
6	0.00	0.00	0.00	0.05	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
7	0.00	0.00	0.00	0.10	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
8	0.20	0.00	0.00	0.30	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
9	0.95	0.00	0.00	0.90	0.05	0.05	0.90	0.30	0.30	0.00	0.00	0.00
10	0.95	0.00	0.00	0.90	0.05	0.05	0.90	0.30	0.30	0.00	0.00	0.00
11	0.95	0.00	0.00	0.90	0.05	0.05	0.90	0.30	0.30	0.00	0.00	0.00
12	0.95	0.00	0.00	0.90	0.05	0.05	0.90	0.30	0.30	0.00	0.00	0.00
13	0.50	0.00	0.00	0.90	0.05	0.05	0.80	0.30	0.30	0.00	0.00	0.00
14	0.95	0.00	0.00	0.90	0.05	0.05	0.90	0.30	0.30	0.00	0.00	0.00
15	0.95	0.00	0.00	0.90	0.05	0.05	0.90	0.30	0.30	0.00	0.00	0.00
16	0.95	0.00	0.00	0.90	0.05	0.05	0.90	0.30	0.30	0.00	0.00	0.00
17	0.95	0.00	0.00	0.90	0.05	0.05	0.90	0.30	0.30	0.00	0.00	0.00
18	0.30	0.00	0.00	0.50	0.05	0.05	0.50	0.30	0.30	0.00	0.00	0.00
19	0.00	0.00	0.00	0.30	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
20	0.00	0.00	0.00	0.30	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
21	0.00	0.00	0.00	0.20	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
22	0.00	0.00	0.00	0.20	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
23	0.00	0.00	0.00	0.10	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
24	0.00	0.00	0.00	0.05	0.05	0.05	0.30	0.30	0.30	0.00	0.00	0.00
Peak	See Note 1 Below for occupancy info			1.0 W/ft^2 (10.8 W/m^2)			0.75 W/ft^2 (8.1 W/m^2)			0 gal/hr (0 L/hr)		

Note 1: See “Standard Design Program Areas & Unit costs” table at the COS Website for staff (i.e. occupancy quantities) based on applicable facility sizes.

Battalion Headquarters West Zone Internal Load Schedules
(2 occupants continuously)

Hr	Occupancy			Lighting			Plug Loads			Service Hot Water		
	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun	Wk	Sat	Sun

Hr	Occupancy			Lighting			Plug Loads			Service Hot Water		
1	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.00	0.00	0.00
2	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.00	0.00	0.00
3	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.00	0.00	0.00
4	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.00	0.00	0.00
5	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.00	0.00	0.00
6	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.10	0.10	0.10
7	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.40	0.40	0.40
8	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.20	0.20	0.20
9	0.95	0.417	0.417	0.90	0.50	0.50	0.90	0.30	0.30	0.00	0.00	0.00
10	0.95	0.417	0.417	0.90	0.50	0.50	0.90	0.30	0.30	0.00	0.00	0.00
11	0.95	0.417	0.417	0.90	0.50	0.50	0.90	0.30	0.30	0.00	0.00	0.00
12	0.95	0.417	0.417	0.90	0.50	0.50	0.90	0.30	0.30	0.00	0.00	0.00
13	0.50	0.417	0.417	0.90	0.50	0.50	0.80	0.30	0.30	0.00	0.00	0.00
14	0.95	0.417	0.417	0.90	0.50	0.50	0.90	0.30	0.30	0.00	0.00	0.00
15	0.95	0.417	0.417	0.90	0.50	0.50	0.90	0.30	0.30	0.00	0.00	0.00
16	0.95	0.417	0.417	0.90	0.50	0.50	0.90	0.30	0.30	0.00	0.00	0.00
17	0.95	0.417	0.417	0.90	0.50	0.50	0.90	0.30	0.30	0.00	0.00	0.00
18	0.417	0.417	0.417	0.50	0.50	0.50	0.50	0.30	0.30	0.10	0.10	0.10
19	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.10	0.10	0.10
20	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.10	0.10	0.10
21	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.00	0.00	0.00
22	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.00	0.00	0.00
23	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.00	0.00	0.00
24	0.417	0.417	0.417	0.50	0.50	0.50	0.30	0.30	0.30	0.00	0.00	0.00
Peak	5 occupants			1.0 W/ft^2 (10.8 W/m^2)			0.75 W/ft^2 (8.1 W/m^2)			6.4 gal/hr (24 L/hr)		

3.4. BATTALION HEADQUARTERS BUILDINGS – FURNITURE REQUIREMENTS

3.4.1. Furniture Systems

The criterion contained on the following pages describes the furnishing requirements for all room types and for all headquarters building(s). Furnishings, other than installed equipment, are to be GFGI unless otherwise specified in this document. The following furnishings list is provided for coordination of room and office layouts to ensure suitability for their intended function. Large interior spaces such as open office areas can be subdivided into smaller areas by using office partitions, storage units and file cabinets or similar devices. In general, the interior design shall provide a comfortable, efficient and flexible work environment. All open office workstations in the headquarters are predicated on 6-foot by 8-foot cubicles.

3.4.2. Room Size and Furnishings Chart

Room Size and Furnishings Chart			
ROOM TYPE	**MIN. SF**	**COMMENTS**	**FURNITURE REQUIRED**
Senior Executive Office	200	Private Office	U-shaped desk unit executive single pedestal desk w/ center drawer, box/box/file pedestal, full modesty panel; executive bridge 42” min.; credenza unit w/ two drawer lateral file and hutch unit w/ door storage, 4-drawer lateral files, one conference table, four conference chairs, two guest chairs, one executive chair.

Room Size and Furnishings Chart			
ROOM TYPE	MIN. SF	COMMENTS	FURNITURE REQUIRED
Executive Office	150	Private Office	L-shaped executive desk unit with single pedestal desk w/ center drawer and storage pedestal w/ box/box/file configuration, full modesty panel; executive return with storage pedestal box/box/file configuration, two 4-drawer lateral files, two guest chairs, one executive chair.
Office	110	Private Office	L-shaped executive desk unit with single pedestal desk w/ center drawer and storage pedestal w/ box/box/file configuration, full modesty panel; executive return with storage pedestal box/box/file configuration, one 4-drawer lateral file, one guest chairs, one task chair.
Open Workstation	48	Open Workstation	Systems furniture workstation, approx. 48 SF, with work surfaces, file drawers and overhead storage.
Brigade Command Conference Room	600		Conference table with 18 chairs and 18 side chairs.
Battalion Command Conference Room	330		Conference table with 14 chairs and 8 side chairs.
Medium Conference Room	300 - 200		Conference table with 12 chairs and 4 side chairs.
Small Conference Room	180 - 110		Conference table with 8 chairs and 2 side chairs.
Reception Area	Varies	Executive Reception Area	Systems furniture open office area for one staff member and 5 visitors (5 guest chairs).
Classroom	Varies		1 desk and chair for each 20 SF. Provide movable partitions to divide large classroom space into three equally-sized spaces.
Lobby	Varies	Building Reception Area	Lounge seating if space allows. Provide one recessed building directory near each main entrance, and in a multiple-story building, provide one recessed building directory near elevators doors above the first floor. Provide one 4'-0" x 6'-0" wall mounted bulletin board for each headquarters unit. Provide one glass front 4'-0" wide min. built in display cabinet for unit memorabilia, awards, trophies, etc.
Message Center	Varies		Provide 24" deep counter equivalent to the length of the room.
File Room	Varies		Minimum of 1 linear foot of 4-drawer lateral file cabinet for every 4 SF of room (250 SF room = min 62.5 LF 4-drawer horizontal base files; (1) 36"(w), 4-drawer file cabinet = 12 LF)
Break Room	Varies		Contractor furnished, contractor installed minimum 20 LF base and wall cabinets, dishwasher and space for a full size refrigerator with ice-maker. Note that in BG HQ- S-1 Break Room also supports Command group. Provide recessed space for two vending machines per building (machines are not in the contract) not in view of the lobby.

Room Size and Furnishings Chart			
ROOM TYPE	MIN. SF	COMMENTS	FURNITURE REQUIRED
Shower	Varies		Contractor furnished, contractor installed lockers with benches will be provided on a 3:1 ration of lockers/shower. Minimum locker size shall be 12”(w) x 18”(d) x 36”(h).
Secured Documents Room	Varies	Secure Documents Room conforming to requirements in AR 380-5	2 four drawer safes per authorized company within each battalion secure document room. 2 four drawer safes per coordinating staff section within each battalion and/or brigade secure documents room, not to exceed a total of 12 safes per the battalion document room.
BOC	Varies	Brigade Operations Center	Provision for Government-Furnished, Government-Installed television monitors (wall of knowledge). Systems furniture workstations, 30"D x 60"W, with 42"-48"H powered panels, and one stationary box/box/file pedestal and task chair per workstation as indicated on standard floor plans. Modular conference tables and chairs for 10 persons (with side chairs as space allows) at conference room. Contractor furnished, contractor installed raised flooring.
SCIF	Varies	Sensitive Compartmented Information Facility conforming to DCID Manual 6/9 and Office of the Director of National Intelligence – DRAFT Intelligence Community Standard Number 2009-705-1	50 - 52 total systems furniture workstations, 30"D x 60"W, with 42"-48"H powered panels, and one stationary box/box/file pedestal and task chair per workstation as indicated on standard floor plans. Modular conference tables and chairs for 12 persons (with side chairs as space allows) at conference room. Contractor furnished, contractor installed raised flooring to accommodate weight of 7 four drawer safes. Primary entry vestibule (interior) shall accommodate (1) 24” D x 36” W standing height table. Provide (1) cell phone storage locker to accommodate 50 individual phones adjacent to primary SCIF entry at corridor side.
NOC	Varies	Network Operations Center	Systems furniture workstation, approx. 48 SF, with work surfaces, file drawers and overhead storage as indicated on standard floor plans. Space for GFGI communication racks, equipment, and 3 each work benches in server room. Contractor furnished, contractor installed raised flooring.

3.5. REFERENCES

(1) Applicable Industry Criteria

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

ANSI/EIA/TIA 568A Commercial Building Telecommunications Cabling Standard and all applicable Addendums)

EIA/TIA 568-B Commercial Building Telecommunications Cabling Standards (Addendums 561-B.1, 568-B.2, 568-B.2-1)

ANSI/EIA/TIA 606A Administration Standard for Commercial Telecommunications Infrastructure

ASHRAE 55 Thermal Environmental Conditions for Human Occupancy

ASHRAE Hdbk-IP Handbook, Refrigeration I-P Edition

ASHRAE Hdbk-IP Handbook, HVAC Applications I-P Edition

ASHRAE Hdbk-IP Handbook, HVAC Systems and Equipment I-P Edition

ASME B31.1 Power Piping

ASHRAE Underfloor Air Distribution (UFAD) Design Guide, 2003

ASTM E413-04, Classification for Rating Sound Insulation

Clean Air Act Amendment of 1990

Discount Factors for Life-Cycle Cost Analysis, Annual Supplement to NIST Handbook 135

Memorandum of Agreement (MOA) on Criteria/Standards for Economic Analyses/Life Cycle

Costing for MILCON Design (March 1996)

NIST Handbook 135 (with the annual supplement of discount factors)

SMACNA Seismic Restraint Manual: Guidelines for Mechanical Systems

Testing and Balancing Bureau (TABB)

Underwriters Laboratories (UL)

UL 1440 Transient Voltage Surge Suppressors

(2) Applicable Military Criteria

Army Regulation (AR)

AR 190-51, Security of Unclassified Army Property (Sensitive and Nonsensitive), 30 September 1993

AR 380-381 Special Access Programs (SAPS) and Sensitive Activities

AR 380–5, Information Security Program

Department Of Defense (DOD)

DOD MIL-HDBK-419A Grounding, Bonding, and Shielding for Electronic Equipment and Facilities

DoD Regulation 5200.1-R, Information Security Program, dated January 1997, Appendix 7 –Physical Security for Vault and Secure Room Construction Standards

Information Systems Engineering Command (ISEC)

National Security Telecommunications and Information Systems Security (NSTISS)

NSTISSAM Tempest 2-95 Red/Black Installation Guidance

NSTISSI 7003 Protective Distribution Systems (PDS)

Office of the Director of National Intelligence – DRAFT Intelligence Community Standard Number 2009-705-1

Technical Guide for the Integration of Secret Internet Protocol Router Network (SIPRNet)

Unified Facilities Criteria UFC

UFC 3-580-01 Telecommunications Bldg Cabling Systems Planning/Design Manual 22 June 2007

UFC 4-140-01, Brigade Operations Complex, Brigade and Battalion Headquarters

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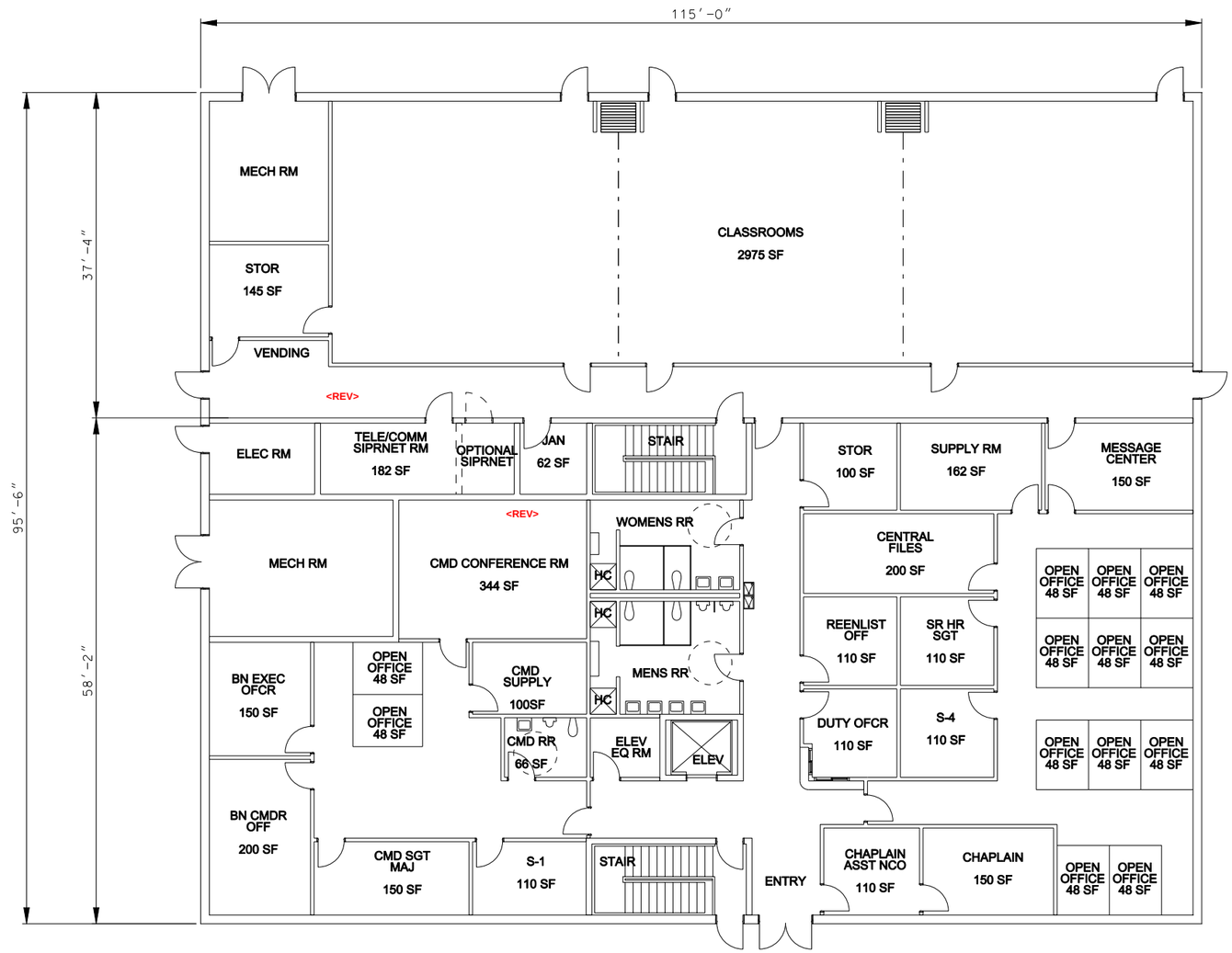

LARGE BATTALION FIRST FLOOR PLAN

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

FIRST FLOOR	10985 GSF
CLASSROOM AREA	4300 GSF
SECOND FLOOR	6730 GSF
TOTAL SF SHOWN	17715 GSF
MAXIMUM ALLOWABLE GROSS AREA	18100 GSF

FLOOR PLAN INDICATES THE ARMY STANDARD SOLUTION IN SCHEMATIC FORM. THE DESIGNER-OF-RECORD IS ALLOWED TO MAKE ADJUSTMENTS FOR EXTERIOR FACADE/ARCHITECTURAL THEME, AND/OR TO ACCOMMODATE SPECIFIC BUILDING ENGINEERING SYSTEMS (STRUCTURAL, MECHANICAL, ELECTRICAL, FIRE PROTECTION, AND SUSTAINABLE DESIGN). THESE ADJUSTMENTS WILL BE EVALUATED BY THE CENTER OF STANDARDIZATION (COS) DURING ITS COMPLIANCE REVIEW. INNOVATIVE, COST SAVING SOLUTIONS WILL BE GIVEN PROPER CONSIDERATION BY THE COS, AND WILL BE ADOPTED AS APPROPRIATE.

AREAS SHOWN ON THE FLOOR PLAN ARE TO BE CONSIDERED NET PROGRAM REQUIREMENTS. THE MAXIMUM ALLOWABLE GROSS BUILDING AREA IS THE MAXIMUM GROSS SPACE PERMISSIBLE FOR THE FACILITY. A REDUCED OVERALL GROSS AREA IS ACCEPTABLE IF ALL NET PROGRAM REQUIREMENTS AND ADJACENCIES ARE MET.

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

0 4' 8' 16' 24'

US ARMY CORPS OF ENGINEERS SAVANNAH

SYMBOL	DESCRIPTION	DATE	BY

DESIGNED BY: DATE:
DWN BY: CKD BY: SOLICITATION NO.:
SUBMITTED BY: CONTRACT NO.:
FILE NAME: CATEGORY CODE:
SIZE: PLOT SCALE: PLOT DATE:

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH DISTRICT

ANY PROJECT
ANYWHERE

FIRST FLOOR PLAN

PLATE REFERENCE NUMBER
A–101
SHEET

$$DGNSPEC$$
$$SYSTIME$$
$$USERNAME$$

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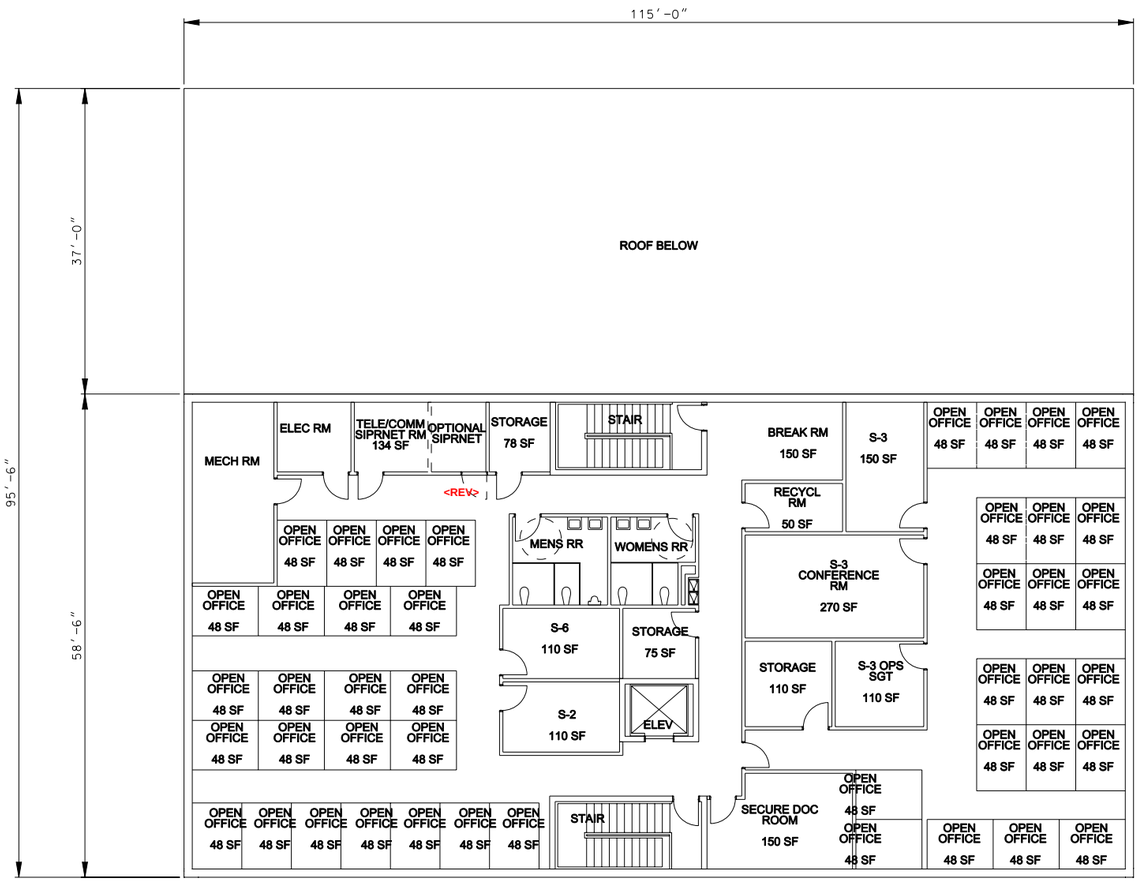

LARGE BATTALION SECOND FLOOR PLAN

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

FIRST FLOOR	10985 GSF
CLASSROOM AREA	4300 GSF
SECOND FLOOR	6730 GSF
TOTAL SF SHOWN	17715 GSF
MAXIMUM ALLOWABLE GROSS AREA	18100 GSF

FLOOR PLAN INDICATES THE ARMY STANDARD SOLUTION IN SCHEMATIC FORM. THE DESIGNER-OF-RECORD IS ALLOWED TO MAKE ADJUSTMENTS FOR EXTERIOR FACADE/ARCHITECTURAL THEME, AND/OR TO ACCOMMODATE SPECIFIC BUILDING ENGINEERING SYSTEMS (STRUCTURAL, MECHANICAL, ELECTRICAL, FIRE PROTECTION, AND SUSTAINABLE DESIGN). THESE ADJUSTMENTS WILL BE EVALUATED BY THE CENTER OF STANDARDIZATION (COS) DURING ITS COMPLIANCE REVIEW. INNOVATIVE, COST SAVING SOLUTIONS WILL BE GIVEN PROPER CONSIDERATION BY THE COS, AND WILL BE ADOPTED AS APPROPRIATE.

AREAS SHOWN ON THE FLOOR PLAN ARE TO BE CONSIDERED NET PROGRAM REQUIREMENTS. THE MAXIMUM ALLOWABLE GROSS BUILDING AREA IS THE MAXIMUM GROSS SPACE PERMISSIBLE FOR THE FACILITY. A REDUCED OVERALL GROSS AREA IS ACCEPTABLE IF ALL NET PROGRAM REQUIREMENTS AND ADJACENCIES ARE MET.

SCALE: 1/8" = 1'-0"
0 4' 8' 16' 24'

US ARMY CORPS OF ENGINEERS SAVANNAH

SYMBOL	DESCRIPTION	DATE	BY

DESIGNED BY: | DATE:
DWN BY: | CKD BY: | SOLICITATION NO.:
SUBMITTED BY: | CONTRACT NO.:
FILE NAME: | CATEGORY CODE:
SIZE: | PLOT SCALE: | PLOT DATE:

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
SAVANNAH DISTRICT

ANY PROJECT
ANYWHERE

SECOND FLOOR PLAN

PLATE REFERENCE NUMBER
A-102
SHEET

$$DGNSPEC$$
$$SYSTIME$$
$$USERNAME$$

4.0 APPLICABLE CRITERIA

Unless a specific document version or date is indicated, use criteria from the most current references, including any applicable addenda, unless otherwise stated in the contract or task order, as of the date of the Contractor's latest accepted proposal or date of issue of the contract or task order solicitation, whichever is later. In the event of conflict between References and/or Applicable Military Criteria, apply the most stringent requirement, unless otherwise specifically noted in the contract or task order.

4.1. INDUSTRY CRITERIA

Applicable design and construction criteria references are listed in Table 1 below. This list is not intended to include all criteria that may apply or to restrict design and construction to only those references listed. See also Paragraph 3 for additional facility-specific applicable criteria.

Table 1: Industry Criteria

Air Conditioning and Refrigeration Institute (ARI)	
ARI 310/380	Packaged Terminal Air-Conditioners and Heat Pumps
ARI 440	Room Fan-Coil and Unit Ventilator
ANSI/ARI 430-99	Central Station Air Handling Units
ARI 445	Room Air-Induction Units
ARI 880	Air Terminals
Air Movement and Control Association (AMCA)	
AMCA 210	Laboratory Methods of Testing Fans for Rating
American Architectural Manufacturers Association (AAMA)	
AAMA 605	Voluntary Specification Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels
AAMA 607.1	Voluntary Guide Specifications and Inspection Methods for Clear Anodic Finishes for Architectural Aluminum
AAMA 1503	Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors, and Glazed Wall Sections
American Association of State Highway and Transportation Officials (AASHTO)	
	Roadside Design Guide [guardrails, roadside safety devices]

	Standard Specifications for Transportation Materials and Methods of Sampling and Testing [Road Construction Materials]
	Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals
	Guide for Design of Pavement Structures, Volumes 1 and 2 [pavement design guide]
	A Policy of Geometric Design of Highways and Streets
American Bearing Manufacturers Association (AFBMA)	
AFBMA Std. 9	Load Ratings and Fatigue Life for Ball Bearings
AFBMA Std. 11	Load Ratings and Fatigue Life for Roller Bearings
American Boiler Manufacturers Association (ABMA)	
ABMA ISEI	Industry Standards and Engineering Information
American Concrete Institute	
ACI 302.2R	Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials
ACI 318	Building Code Requirements for Structural Concrete
ACI SP-66	ACI Detailing Manual
ACI 530	Building Code Requirements for Masonry Structures
ADA Standards for Accessible Design	
See US Access Board	ADA and ABA Accessibility Guidelines for Buildings and Facilities, Chapters 3-10.
American Institute of Steel Construction (AISC)	
	Manual of Steel Construction – 13th Edition (or latest version)
American Iron and Steel Institute	
AISI S100	North American Specification for the Design of Cold-Formed Steel Structural Members

American National Standards Institute 11 (ANSI)	
ANSI Z21.10.1	Gas Water Heaters Vol. 1, Storage water Heaters with Input Ratings of 75,000 Btu per Hour or less
ANSI Z124.3	American National Standard for Plastic Lavatories
ANSI Z124.6	Plastic Sinks
ANSI Z21.45	Flexible Connectors of Other Than All-Metal Construction for Gas Appliances
ANSI/IEEE C2-2007	National Electrical Safety Code
ANSI/AF&PA NDS-2001	National Design Specification for Wood Construction
American Society of Civil Engineers (ASCE)	
ASCE 7	Minimum Design Loads for Buildings and Other Structures
ASCE 37	Design and Construction of Sanitary and Storm Sewers, Manuals and Reports on Engineering Practice [sanitary sewer and storm drain design criteria]
ASCE/SEI 31-03	Seismic Evaluation of Existing Buildings [Existing Building Alteration/Renovation]
ASCE/SEI 41-06	Seismic Rehabilitation of Existing Buildings [Existing Building Alteration/Renovation]
American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)	
ASHRAE 90.1	ANSI/ASHRAE/IESNA 90.1, Energy Standard for Buildings Except Low-Rise Residential Buildings
ASHRAE Guideline 0	The Commissioning Process
ASHRAE Guideline 1.1	The HVAC Commissioning Process
ASHRAE Handbooks	Fundamentals, HVAC Applications, Systems and Equipment, Refrigeration (Applicable, except as otherwise specified)
ASHRAE Standard 15	Safety Standard for Refrigeration Systems
ASHRAE Standard 62.1	Ventilation for Acceptable Indoor Air Quality

ASHRAE Standard 55	Thermal Environmental Conditions for Human Occupancy (Design portion is applicable, except where precluded by other project requirements.)
American Society of Mechanical Engineers International (ASME)	
ASME BPVC SEC VII	Boiler and Pressure Vessel Code: Section VII Recommended Guidelines for the Care of Power Boilers
ASME A17.1	Safety Code for Elevators and Escalators
ASME B 31 (Series)	Piping Codes
American Water Works Association (AWWA)	
	Standards [standards for water line materials and construction]
American Welding Society	
	Welding Handbook
	Welding Codes and Specifications (as applicable to application, see International Building Code for example)
Architectural Woodwork Institute (AWI)	
Latest Version	AWI Quality Standards
Associated Air Balance Council (AABC)	
AABC MN-1	National Standards for Testing and Balancing Heating, Ventilating, and Air Conditioning Systems
	AABC Associated Air Balance Council Testing and Balance Procedures
ASTM International	
ASTM C1060-90(1997)	Standard Practice for Thermographic Inspection of Insulation Installations in Envelope Cavities of Frame Buildings
ASTM E 779 (2003)	Standard Test Method for Determining Air Leakage Rate by Fan Pressurization
ASTM E1827-96(2002)	Standard Test Methods for Determining Airtightness of Buildings Using an Orifice Blower Door

Builders Hardware Manufacturers Association (BHMA)	
ANSI/BHMA	The Various BHMA American National Standards
Building Industry Consulting Service International	
	Telecommunications Distribution Methods Manual (TDMM)
	Customer-Owned Outside Plant Design Manual (CO-OSP)
Code of Federal Regulations (CFR)	
49 CFR 192	Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards
10 CFR 430	Energy Conservation Program for Consumer Products
Consumer Electronics Association	
CEA 709.1B	Control Network Protocol Specification
CEA 709.3	Free-Topology Twisted-Pair Channel Specification
CEA 852	Tunneling Component Network Protocols Over Internet Protocol Channels
Electronic Industries Association (EIA)	
ANSI/EIA/TIA 568	Structured Cabling Series
ANSI/EIA/TIA 569	Commercial Building Standard for Telecommunications Pathways and Spaces (includes ADDENDA)
ANSI/TIA/EIA-606	Administrative Standard for the Telecommunications Infrastructure of Commercial Buildings
J-STD EIA/TIA 607	Commercial Building Grounding and Bonding Requirements for Telecommunications
Federal Highway Administration (FHWA)	
	Manual on Uniform Traffic Control Devices for Streets and Highways [signage and pavement markings for streets and highways]
FHWA-NHI-01-021	Hydraulic Engineering Circular No. 22, Second Edition, URBAN DRAINAGE DESIGN MANUAL

Illuminating Engineering Society of North America (IESNA)	
IESNA RP-1	Office Lighting
IESNA RP-8	Roadway Lighting
IESNA Lighting Handbook	Reference and Application
Institute of Electrical and Electronics Engineers Inc. (IEEE)	
	Standard for Use of the International System of Units (SI): the Modern Metric System
Standard 1100	Recommended Practice for Powering and Grounding Sensitive Electronic Equipment
International Code Council (ICC)	
IBC	International Building Code Note: All references in the International Building Code to the International Electrical Code shall be considered to be references to NFPA 70. All references in the International Building Code to the International Fuel Gas Code shall be considered to be references to NFPA 54 and NFPA 58. All references in the International Building Code to the International Fire Code and Chapter 9 shall be considered to be references to Unified Facilities Criteria (UFC) 3-600-01.
IMC	International Mechanical Code – Note: For all references to “HEATING AND COOLING LOAD CALCULATIONS”, follow ASHRAE 90.1 Note: For all references to “VENTILATION”, follow ASHRAE 62.1
IRC	International Residential Code
IPC	International Plumbing Code
IEC	Energy Conservation Code (IEC) –Applicable only to the extent specifically referenced herein. Refer to Paragraph 5, ENERGY CONSERVATION requirements.
IGC	International Gas Code - not applicable. Follow NFPA 54, National Fuel Gas Code and NFPA 58, Liquified Petroleum Gas Code.

International Organization for Standardization (ISO)	
ISO 6781:1983	Qualitative detection of thermal irregularities in building envelopes – infrared method
LonMark International (LonMark)	
LonMark Interoperability Guidelines	(available at www.lonmark.org), including: Application Layer Guidelines, Layer 1-6 Guidelines, and External Interface File (XIF) Reference Guide
LonMark Resource Files	(available at www.lonmark.org), including Standard Network Variable Type (SNVT) definitions
Metal Building Manufacturers Association (MBMA)	
	Metal Building Systems Manual
Midwest Insulation Contractors Association (MICA)	
	National Commercial and Industrial Insulation Standards Manual
National Association of Corrosion Engineers International (NACE)	
NACE RP0169	Control of External Corrosion on Underground or Submerged Metallic Piping Systems
NACE RP0185	Extruded, Polyolefin Resin Coating Systems with Adhesives for Underground or Submerged Pipe
NACE RP0285	Corrosion Control of Underground Storage Tank Systems by Cathodic Protection
NACE RP0286	Electrical Isolation of Cathodically Protected Pipelines
National Electrical Manufacturers Association (NEMA)	
National Environmental Balancing Bureau (NEBB)	
	Procedural Standards Procedural Standards for Testing Adjusting Balancing of Environmental Systems
National Fire Protection Association (NFPA)	
NFPA 10	Standard for Portable Fire Extinguishers
NFPA 13	Installation of Sprinkler Systems

NFPA 13R	Residential Occupancies up to and Including Four Stories in Height Sprinkler Systems
NFPA 14	Standard for the Installation of Standpipes and Hose Systems
NFPA 20	Installation of Centrifugal Fire Pumps
NFPA 24 NFPA 25	Standard for the Installation of Private Fire Service Mains and Their Appurtenances [underground fire protection system design] Inspection, Testing And Maintenance Of Water-Based Fire Protection Systems
NFPA 30	Flammable and Combustible Liquids Code
NFPA 30A	Motor Fuel Dispensing Facilities and Repair Garages
NFPA 31	Installation of Oil Burning Equipment
NFPA 54	National Fuel Gas Code
NFPA 58	Liquefied Petroleum Gas Code
NFPA 70	National Electrical Code
NFPA 72	National Fire Alarm Code
NFPA 76	Fire Protection of Telecommunications Facilities
NFPA 80	Standard for Fire Doors and Fire Windows
NFPA 90a	Installation of Air Conditioning and Ventilating Systems
NFPA 96	Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations
NFPA 101	Life Safety Code
NFPA 780	Standard for the Installation of Lightning Protection Systems
National Roofing Contractor's Association (NRCA)	
	Roofing and Waterproofing Manual
National Sanitation Foundation, International	

NSF/ANSI Std. 2, 3, 4, 5, 6, 7, 8, 12, 13, 18, 20, 21, 25, 29, 35, 36, 37, 51, 52, 59, 169	Food Equipment Standards
ANSI/UL Std. 73, 197, 471, 621, 763	Food Equipment Standards
CSA Std. C22.2 No. 109, 120, 195	Food Equipment Standards
Occupational Safety and Health Administration (OSHA)	
Title 29, Part 1926	OSHA Construction Industry Standards, Title 29, Code of Federal Regulations, Part 1926, Safety and Health Regulations for Construction
Plumbing and Drainage Institute (PDI)	
PDI G 101	Testing and Rating Procedure for Grease Interceptors with Appendix of Sizing and Installation Data
PDI WH201	Water Hammer Arrestors
Precast Concrete Institute	
PCI Design Handbook	Precast and Prestressed Concrete
Sheet Metal and Air Conditioning Contractor's National Association (SMACNA)	
SMACNA HVAC Duct Construction Standards	HVAC Duct Construction Standards - Metal and Flexible
SMACNA Architectural Manual	Architectural Sheet Metal Manual
SMACNA HVAC TAB	HVAC Systems - Testing, Adjusting and Balancing
State/Local Regulations	
	State Department of Transportation Standard Specifications for Highway and Bridge Construction
	Sedimentation and Erosion Control Design Requirements
	Environmental Control Requirements
	Storm Water Management Requirements

Steel Door Institute (SDI)	
ANSI A250.8/SDI 100	Standard Steel Doors and Frames
Steel Deck Institute	
	SDI Diaphragm Design Manual
Steel Joist Institute	
	Catalog of Standard Specifications and Load Tables for Steel Joists and Joist Girders
Underwriters Laboratories (UL)	
UL 96A	Installation Requirements for Lightning Protection Systems
UL 300	Standard for Safety for Fire Testing of Fire Extinguishing Systems for Protection of Restaurant Cooking Areas
UNITED STATES ACCESS BOARD: U.S. ARCHITECTURAL AND TRANSPORTATION BARRIERS COMPLIANCE BOARD	
ADA and ABA Accessibility Guidelines for Buildings and Facilities	ABA Accessibility Standard for DoD Facilities Derived from the ADA and ABA Accessibility Guidelines: Specifically includes: ABA Chapters 1 and 2 and Chapters 3 through 10. Use this reference in lieu of IBC Chapter 11. Excluded are: (a) Facilities, or portions of facilities, on a military installation that are designed and constructed for use exclusively by able-bodied military personnel (See Paragraph 3 for any reference to this exclusion). (b) Reserve and National Guard facilities, or portions of such facilities, owned by or under the control of the Department of Defense, that are designed and constructed for use exclusively by able-bodied military personnel. (See paragraph 3 for any reference to this exclusion).
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES	
	FDA National Food Code
U.S. GREEN BUILDING COUNCIL (USGBC)	
LEED-NC	Green Building Rating System for New Construction & Major Renovations
	Application Guide for Multiple Buildings and On-Campus Building

	Projects

4.2. MILITARY CRITERIA

The project shall conform to the following criteria. Certain design impacts and features due to these criteria are noted for the benefit of the offeror. However, all requirements of the referenced criteria will be applicable, whether noted or not, unless otherwise specified herein.

4.2.1. Energy Policy Act of 2005 (Public Law 109-58) (applies only to the extent specifically implemented in the contract, which may or may not directly cite or reference EPACT)

4.2.2. Executive Order 12770: Metric Usage In Federal Government

(a) Metric design and construction is required except when it increases construction cost. Offeror to determine most cost efficient system of measurement to be used for the project.

4.2.3. TB MED 530: Occupational and Environmental Health Food Sanitation

4.2.4. Unified Facilities Criteria (UFC) 3-410-01FA: Heating, Ventilating, and Air Conditioning - applicable only to the extent specified in paragraph 5, herein.

4.2.5. Deleted.

4.2.6. UFC 3-600-01 Design: Fire Protection Engineering for Facilities. Use the latest edition of the IBC in coordination with this UFC. Use Chapters 3, 6, 7, 33 and UFC 3-600-01. If any conflict occurs between these Chapters and UFC 3-600-01, the requirements of UFC 3-600-01 take precedence. Use UFC 3-600-01 in lieu of IBC Chapters 4, 8,9,10.

4.2.7. UFC 4-010-01 DoD Minimum Antiterrorism Standards for Buildings

4.2.8. UFC 4-023-03 Design of Buildings to Resist Progressive Collapse (Use most recent version, regardless of references thereto in other publications)

(a) Note the option to use tie force method or alternate path design for Occupancy Category II.

4.2.9. UFC 4-021-01 Design and O&M: Mass Notification Systems

4.2.10. Technical Criteria for Installation Information Infrastructure Architecture (I3A)

(a) Email: DetrickISECI3Aguide@conus.army.mil

4.2.11. U.S. Army Information Systems Engineering Command (USAISEC) TG for the Integration of SECRET Internet Protocol (IP) Router Network (SIPRNET). See Paragraph 3 for applicability to specific facility type. May not apply to every facility. This is mandatory criteria for those facilities with SIPRNET.

4.2.11.1. Draft Guide Specification for Section 27 05 28 PROTECTIVE DISTRIBUTION SYSTEM (PDS) FOR SIPRNET COMMUNICATIONS SYSTEMS, found at https://rfpwizard.cecer.army.mil/HTML/docs/Refs/SECTION_270528-v3.pdf

5.0 GENERAL TECHNICAL REQUIREMENTS

This paragraph contains technical requirements with general applicability to Army facilities. See also Paragraph 3 for facility type-specific operational, functional and technical requirements. Residential or similar grade finishes and materials are not acceptable for inclusion in these buildings, unless otherwise specifically allowed.

5.1. SITE PLANNING AND DESIGN

5.1.1. STANDARDS AND CODES: The site planning and design shall conform to APPLICABLE CRITERIA and to paragraph 6, PROJECT SPECIFIC REQUIREMENTS.

5.1.2. SITE PLANNING OBJECTIVES: Group buildings in configurations that create a sense of community and promote pedestrian use. See paragraph 3 for additional site planning requirements relating to building functions.

5.1.2.1. Provide enclosures and or visual screening devices for Outdoor Utility such as dumpsters, emergency generators, transformers, heating, ventilation, and air conditioning units from streetscape and courtyard views to limit visual impact. Enclosures shall be compatible with the building they serve and accessible by vehicle. The location of dumpsters can have a significant visual impact and should be addressed as part of an overall building design and incorporated in site planning.

5.1.2.2. Where included in the project, dumpster pads shall be concrete (minimum of 8 inches thick on 4 inch base course, unless site conditions dictate more conservative requirements) and directly accessible by way of a paved service drive or parking lot with adequate overhead clearance for collection vehicles. Provide space at dumpster areas for recycling receptacles. Coordinate with Installation on recycling receptacle types, sizes and access requirements and provide space at dumpster areas to accommodate them.

5.1.2.3. Vehicular Circulation. Apply design vehicle templates provided by the American Association of State Highway and Transportation Officials (AASHTO) to the site design. The passenger car class includes passenger cars and light trucks, such as vans and pick-ups. The passenger car template is equivalent to the non-organizational – privately owned vehicle (POV). The truck class template includes single-unit trucks, recreation vehicles, buses, truck tractor-semi-trailer combinations, and trucks or truck tractors with semi-trailers in combination with full trailers. Provide vehicle clearances required to meet traffic safety for emergency vehicles, service vehicles, and moving vans. Provide required traffic control signage Site entrances and site drive aisles shall maximize spacing between drives, incorporate right-angle turns, and limit points of conflict between traffic. Design Services Drives to restrict access to unauthorized vehicles by removable bollards, gates, or other barriers to meet Anti-Terrorism/Force Protection (ATFP) requirements. Orient service drives to building entrances other than the primary pedestrian entry at the front of the building.

5.1.2.4. Provide Emergency Vehicle Access around the facility and shall be in accordance with AT/FP requirements. Maintain a 33-foot clear zone buffer for emergency vehicles, designed to prevent other vehicles from entering the AT/FP standoff to the building.

5.1.2.5. 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.

5.1.2.6. Stormwater Management. Employ design and construction strategies (Best Management Practices) that reduce stormwater runoff, reduce discharges of polluted water offsite and maintain or restore predevelopment hydrology with respect to temperature, rate, volume and duration of flow to the maximum extent practicable. See paragraph 6, PROJECT SPECIFIC requirements for additional information.

5.1.3. EXTERIOR SIGNAGE: Provide exterior signage in accordance with Appendix H, Exterior Signage. Provide exterior NO SMOKING signage that conveys building and grounds smoking policy.

5.1.4. EXISTING UTILITIES: Base utilities maps and capacities for this site are included as part of this RFP. See paragraph 6 for more detailed information.

5.2. SITE ENGINEERING

5.2.1. STANDARDS AND CODES: The site engineering shall conform to APPLICABLE CRITERIA.

5.2.2. SOILS:

5.2.2.1. A report has been prepared to characterize the subsurface conditions at the project site and is **appended to these specifications.** The report provides a general overview of the soil and geologic conditions with detailed descriptions at discrete boring locations. The Contractor's team shall include a licensed geotechnical engineer to interpret the report and develop earthwork and foundation recommendations and design parameters in which to base the contractor's design. If any additional subsurface investigation or laboratory analysis is required to better characterize the site or develop the final design, the Contractor shall perform it under the direction of a licensed geotechnical engineer. There will be no separate payment for the cost of additional tests. If differences between the Contractor's additional subsurface investigation and the government provided soils report or the reasonably expected conditions require material revisions in the design, an equitable adjustment may be made, in accordance with the provisions of the Differing Site Conditions clause. The basis for the adjustment would be the design and construction appropriate for the conditions described in the Government furnished report or the reasonably expected conditions, in comparison with any changes required by material differences in the actual conditions encountered, in accordance with the terms of contract clause Differing Site Conditions.

5.2.2.2. The contractor's licensed geotechnical engineer shall prepare a final geotechnical evaluation report, to be submitted along with the first foundation design submittal, as described in Section 01 33 16, *Design After Award*.

5.2.3. VEHICLE PAVEMENTS: (as applicable to the project)

5.2.3.1. Design procedures and materials shall conform to one of the following: 1) the USACE Pavement Transportation Computer Assisted Structural Engineering (PCASE) program, 2) American Association of State Highway and Transportation Officials (AASHTO) or, 3) the applicable state Department of Transportation standards in which the project is located. See paragraph 5.2.2.2 and Section 01 33 16 for required information for the Contractor's geotechnical evaluation report. The minimum flexible pavement section shall consist of 2 inches of asphalt and 6 inches of base or as required by the pavement design, whichever is greater, unless specifically identified by the Government to be a gravel road. Design roads and parking areas for a life expectance of 25 years with normal maintenance. Parking area for tactical vehicles (as applicable to the project) shall be Portland Cement Concrete (PCC) rigid pavement design. For concrete pavements, submit joint layout plan for review and concurrence. Design pavements for military tracked vehicles (as applicable to the project) IAW USACE PCASE. Traffic estimates for each roadway area will be as shown on the drawings or listed in Section 01 10 00 Paragraph 6.4.4. Pavement markings and traffic signage shall comply with the Installation requirements and with the Manual on Uniform Traffic Control Devices.

5.2.3.2. Parking Requirements.

(a) All handicap POV parking lots (where applicable in the facility specific requirements) shall meet the ADA and ABA Accessibility Guidelines for accessible parking spaces.

(b) Design POV parking spaces for the type of vehicles anticipated, but shall be a minimum of 9 ft by 18 ft for POVs, except for two wheel vehicles.

5.2.3.3. Sidewalks. Design the network of walks throughout the complex (where applicable) to facilitate pedestrian traffic among facilities, and minimize the need to use vehicles. Incorporate sidewalks to enhance the appearance of the site development, while creating a sense of entry at the primary patron entrances to the buildings. Minimum sidewalk requirements are in Paragraph 3, where applicable and/or paragraph 6 and/or site plans, where applicable..

5.2.4. CATHODIC PROTECTION: Provide cathodic protection systems for all underground metallic systems and metallic fittings/portions of non-metallic, underground systems, both inside and outside the building 5 foot line that are subject to corrosion. Coordinate final solutions with the installation to insure an approach that is consistent with installation cathodic protection programs.

5.2.5. UTILITIES: See paragraph 6.4.6 for specific information on ownership of utilities and utility requirements. Meter all utilities (gas, water, and electric, as applicable) to each facility. For Government owned utilities, install meters that are wireless data transmission capable as well as have a continuous manual reading option. All meters will be capable of at least hourly data logging and transmission and provide consumption data for gas, water, and

electricity. Gas and electric meters will also provide demand readings based on consumption over a maximum of any 15 minute period. Configure all meters to transmit at least daily even if no receiver for the data is currently available at the time of project acceptance. For privatized utilities, coordinate with the privatization utility(ies) for the proper meter base and meter installation.

5.2.6. PERMITS: The CONTRACTOR shall be responsible for obtaining all permits (local, state and federal) required for design and construction of all site features and utilities.

5.2.7. IRRIGATION. Landscape irrigation systems, if provided, shall comply with the following:

5.2.7.1. Irrigation Potable Water Use Reduction. Reduce irrigation potable water use by 100 percent using LEED credit WE1.1 baseline (no potable water used for irrigation), except where precluded by other project requirements.

5.2.8. EPA WATERSENSE PRODUCTS AND CONTRACTORS. Except where precluded by other project requirements, use EPA WaterSense labeled products and irrigation contractors that are certified through a WaterSense labeled program where available.

5.3. ARCHITECTURE AND INTERIOR DESIGN:

This element will be evaluated per APPLICABLE CRITERIA under the quality focus.

5.3.1. STANDARDS AND CODES: The architecture and interior design shall conform to APPLICABLE CRITERIA.

5.3.2. GENERAL: Overall architectural goal is to provide a functional, quality, visually appealing facility that is a source of pride for the installation and delivered within the available budget and schedule.

5.3.3. COMPUTATION OF AREAS: See APPENDIX Q for how to compute gross and net areas of the facility(ies).

5.3.4. BUILDING EXTERIOR: Design buildings to enhance or compliment the visual environment of the Installation. Where appropriate, reflect a human scale to the facility. Building entrance should be architecturally defined and easily seen. When practical, exterior materials, roof forms, and detailing shall be compatible with the surrounding development and adjacent buildings on the Installation and follow locally established architectural themes. Use durable materials that are easy to maintain. Exterior colors shall conform to the Installation requirements. See paragraph 6.

5.3.4.1. Building Numbers: Permanently attach exterior signage on two faces of each building indicating the assigned building number or address. Building number signage details and locations shall conform to Appendix H, Exterior Signage.

5.3.5. BUILDING INTERIOR

5.3.5.1. Space Configuration: Arrange spaces in an efficient and functional manner in accordance with area adjacency matrices.

5.3.5.2. Surfaces: Appearance retention is the top priority for building and furniture related finishes. Provide low maintenance, easily cleaned room finishes that are commercially standard for the facility occupancy specified, unless noted otherwise.

5.3.5.3. Color: The color, texture and pattern selections for the finishes of the building shall provide an aesthetically pleasing, comfortable, easily maintainable and functional environment for the occupants. Coordinate the building colors and finishes for a cohesive design. Select colors appropriate for the building type. Use color, texture and pattern to path or way find through the building. Trendy colors that will become dated shall be limited to non-permanent finishes such as carpet and paint. Select finisheswith regards to aesthetics, maintenance, durability, life safety and image. Limit the number of similar colors for each material. Use medium range colors for ceramic and porcelain tile groutto help hide soiling. Plastic laminate and solid surface materials shall have patterns that are mottled, flecked or speckled. Coordinate finish colors of fire extinguisher cabinets, receptacle bodies and plates, fire alarms / warning lights, emergency lighting, and other miscellaneous items with the building interior. Match color of equipment items on ceilings (speakers, smoke detectors, grills, etc.) the ceiling color.

5.3.5.4. Circulation: Circulation schemes must support easy way finding within the building.

5.3.5.5. Signage: Provide interior signage for overall way finding and life safety requirements. A comprehensive interior plan shall be from one manufacturer. Include the following sign types: (1) Lobby Directory, (2) Directional Signs; (3) Room Identification Signs; (4) Building Service Signs; (5) Regulatory Signs; (6) Official and Unofficial Signs (7) Visual Communication Boards (8) NO SMOKING signage that conveys building smoking policy. Use of emblems or logos may also be incorporated into the signage plan.

5.3.5.6. Window Treatment: Provide interior window treatments with adjustable control in all exterior window locations for control of day light coming in windows or privacy at night. Maintain uniformity of treatment color and material to the maximum extent possible within a building.

5.3.5.7. Casework: Unless, otherwise specified, all casework for Cabinetry and cases shall be “custom grade”, as described in the AWI Quality Standards.

5.3.6. COMPREHENSIVE INTERIOR DESIGN

5.3.6.1. Comprehensive Interior Design includes the integration of a Structural Interior Design (SID) and a Furniture, Fixtures and Equipment (FF&E) design and package. SID requires the design, selection and coordination of interior finish materials that are integral to or attached to the building structure. Completion of a SID involves the selection and specification of applied finishes for the building’s interior features including, but not limited to, walls, floors, ceilings, trims, doors, windows, window treatments, built-in furnishings and installed equipment, lighting, and signage. The SID package includes finish schedules, finish samples and any supporting interior elevations, details or plans necessary to communicate the building finish design and build out. The SID also provides basic space planning for the anticipated FF&E requirements in conjunction with the functional layout of the building and design issues such as life safety, privacy, acoustics, lighting, ventilation, and accessibility. See Section 01 33 16 for SID design procedures.

5.3.6.2. The FF&E design and package includes the design, selection, color coordination and of the required furnishing items necessary to meet the functional, operational, sustainability, and aesthetic needs of the facility coordinated with the interior finish materials in the SID. The FF&E package includes the specification, procurement documentation, placement plans, ordering and finish information on all freestanding furnishings and accessories, and a cost estimate. Coordinate the selection of furniture style, function and configuration with the defined requirements. Examples of FF&E items include, but are not limited to workstations, seating, files, tables, beds, wardrobes, draperies and accessories as well as marker boards, tack boards, and presentation screens. Criteria for furniture selection include function and ergonomics, maintenance, durability, sustainability, comfort and cost. See Section 01 33 16 for FFE design procedures.

5.4. STRUCTURAL DESIGN

5.4.1. STANDARDS AND CODES: The structural design shall conform to APPLICABLE CRITERIA.

5.4.2. GENERAL: The structural system must be compatible with the intended functions and components that allows for future flexibility and reconfigurations of the interior space. Do not locate columns, for instance, in rooms requiring visibility, circulation or open space, including, but not limited to entries, hallways, common areas, classrooms, etc. Select an economical structural system based upon facility size, projected load requirements and local availability of materials and labor. Base the structural design on accurate, site specific geotechnical information and anticipated loads for the building types and geographical location. Consider climate conditions, high humidity, industrial atmosphere, saltwater exposure, or other adverse conditions when selecting the type of cement and admixtures used in concrete, the concrete cover on reinforcing steel, the coatings on structural members, expansion joints, the level of corrosion protection, and the structural systems. Analyze, design and detail each building as a complete structural system. Design structural elements to preclude damage to finishes, partitions and other frangible, non-structural elements to prevent impaired operability of moveable components; and to prevent cladding leakage and roof ponding. Limit deflections of structural members to the allowable of the applicable material standard, e.g., ACI, AISC, Brick Industry Association, etc. When modular units or other pre-fabricated construction is used or combined with stick-built construction, fully coordinate and integrate the overall structural design between the two different or interfacing construction types. If the state that the project is located in requires separate, specific licensing for structural engineers (for instance, such as in Florida, California and others), then the structural engineer designer of record must be registered in that state.

5.4.3. LOADS: See paragraph 3 for facility specific (if applicable) and paragraph 6 for site and project specific structural loading criteria. Unless otherwise specified in paragraph 6, use Exposure Category C for wind. If not specified, use Category C unless the Designer of Record can satisfactorily justify another Exposure Category in its design analysis based on the facility Master Plan. Submit such exceptions for approval as early as possible and prior to the Interim Design Submittal in Section “Design After Award”. Design the ancillary building items, e.g. doors, window jambs and connections, overhead architectural features, systems and equipment bracing, ducting, piping, etc. for gravity, seismic, lateral loads and for the requirements of UFC 4-010-01, DOD Minimum Antiterrorism Standards for Buildings. Ensure and document that the design of glazed items includes, but is not limited to, the following items under the design loads prescribed in UFC 4-010-01:

(a) Supporting members of glazed elements, e.g. window jamb, sill, header

(b) Connections of glazed element to supporting members, e.g. window to header

(c) Connections of supporting members to each other, e.g. header to jamb

(d) Connections of supporting members to structural system, e.g. jamb to foundation.

5.4.4. TERMITE TREATMENT: (Except Alaska) Provide termite prevention treatment in accordance with Installation and local building code requirements, using licensed chemicals and licensed applicator firm.

5.5. THERMAL PERFORMANCE

5.5.1. STANDARDS AND CODES: Building construction and thermal insulation for mechanical systems shall conform to APPLICABLE CRITERIA.

5.5.2. BUILDING ENVELOPE SEALING PERFORMANCE REQUIREMENT. Design and construct the building envelope for office buildings, office portions of mixed office and open space (e.g., company operations facilities), dining, barracks and instructional/training facilities with a continuous air barrier to control air leakage into, or out of, the conditioned space. Clearly identify all air barrier components of each envelope assembly on construction documents and detail the joints, interconnections and penetrations of the air barrier components. Clearly identify the boundary limits of the building air barriers, and of the zone or zones to be tested for building air tightness on the drawings. Pending the publication of the 2010 version of ASHRAE 90.1, the use of painted interior walls is not an acceptable air barrier method.

5.5.2.1. Trace a continuous plane of air-tightness throughout the building envelope and make flexible and seal all moving joints.

5.5.2.2. The air barrier material(s) must have an air permeance not to exceed 0.004 cfm / sf at 0.3” wg (0.02 L/s.m2 @ 75 Pa) when tested in accordance with ASTM E 2178

5.5.2.3. Join and seal the air barrier material of each assembly in a flexible manner to the air barrier material of adjacent assemblies, allowing for the relative movement of these assemblies and components.

5.5.2.4. Support the air barrier so as to withstand the maximum positive and negative air pressure to be placed on the building without displacement, or damage, and transfer the load to the structure.

5.5.2.5. Seal all penetrations of the air barrier. If any unavoidable penetrations of the air barrier by electrical boxes, plumbing fixture boxes, and other assemblies are not airtight, make them airtight by sealing the assembly and the interface between the assembly and the air barrier or by extending the air barrier over the assembly.

5.5.2.6. The air barrier must be durable to last the anticipated service life of the assembly.

5.5.2.7. Do not install lighting fixtures with ventilation holes through the air barrier

5.5.2.8. Provide a motorized damper in the closed position and connected to the fire alarm system to open on call and fail in the open position for any fixed open louvers such as at elevator shafts.

5.5.2.9. Damper and control to close all ventilation or make-up air intakes and exhausts, atrium smoke exhausts and intakes, etc when leakage can occur during inactive periods.

5.5.2.10. Compartmentalize garages under buildings by providing air-tight vestibules at building access points.

5.5.2.11. Compartmentalize spaces under negative pressure such as boiler rooms and provide make-up air for combustion.

5.5.2.12. Performance Criteria and Substantiation: Submit the qualifications and experience of the testing entity for approval. Demonstrate performance of the continuous air barrier for the opaque building envelope by the following tests:

(a) Develop an Air Barrier Quality Assurance plan to assure that a competent air barrier inspector/specialist inspects the critical components prior to them being concealed. At a minimum, three onsite inspections are required during construction to assure the completeness of the construction and design.

(b) Test the completed building and demonstrate that the air leakage rate of the building envelope does not exceed 0.25cfm/ft2 at a pressure differential of 0.3" w.g.(75 Pa) in accordance with ASTM's E 779 (2003) or E-1827-96 (2002). Accomplish tests using either pressurization or depressurization or both. Divide the volume of air leakage in cfm @ 0.3" w.g. (L/s @ 75 Pa) by the area of the pressure boundary of the building, including roof or ceiling, walls and floor to produce the air leakage rate in cfm/ft2 @ 0.3" w.g. (L/s.m2 @ 75 Pa). Do not test the building until verifying that the continuous air barrier is in place and installed without failures in accordance with installation instructions so that repairs to the continuous air barrier, if needed to comply with the required air leakage rate, can be done in a timely manner.

(c) Test the completed building using Infrared Thermography testing. Use infrared cameras with a resolution of 0.1deg C or better. Perform testing on the building envelope in accordance with ISO 6781:1983 and ASTM C1060-90(1997). Determine air leakage pathways using ASTM E 1186-03 Standard Practices for Air Leakage Site Detection in Building Envelopes and Air Barrier Systems, and perform corrective work as necessary to achieve the whole building air leakage rate specified in (a) above.

(d) Notify the Government at least three working days prior to the tests to provide the Government the opportunity to witness the tests. Provide the Government written test results confirming the results of all tests.

5.6. PLUMBING

5.6.1. STANDARDS AND CODES: The plumbing system shall conform to APPLICABLE CRITERIA.

5.6.2. PRECAUTIONS FOR EXPANSIVE SOILS: Where expansive soils are present, include design features for underslab piping systems and underground piping serving chillers, cooling towers, etc, to control forces resulting from soil heave. Some possible solutions include, but are not necessarily limited to, features such as flexible expansion joints, slip joints, horizontal offsets with ball joints, or multiple bell and spigot gasketed fittings. For structurally supported slabs, suspend piping from the structure with adequate space provided below the pipe for the anticipated soil movement.

5.6.3. HOT WATER SYSTEMS: For Hot Water heating and supply, provide a minimum temp of 140 Deg F in the storage tank and a maximum of 110 Deg F at the fixture, unless specific appliances or equipment specifically require higher temperature water supply.

5.6.4. SIZING HOT WATER SYSTEMS: Unless otherwise specified or directed in paragraph 3, design in accordance with ASHRAE Handbook Series (appropriate Chapters), ASHRAE Standard 90.1, and the energy conservation requirements of the contract. Size and place equipment so that it is easily accessible and removable for repair or replacement.

5.6.5. JANITOR CLOSETS: In janitor spaces/room/closets, provide at minimum, a service sink with heavy duty shelf and wall hung mop and broom rack(s).

5.6.6. FLOOR DRAINS: As a minimum, provide floor drains in mechanical rooms and areas, janitor spaces/rooms/closets and any other area that requires drainage from fixtures or equipment, drain downs, condensate, as necessary.

5.6.7. URINALS: Urinals shall be vitreous china, wall-mounted, wall outlet, non-water using, with integral drain line connection, and with sealed replaceable cartridge or integral liquid seal trap. Either type shall use a

biodegradable liquid to provide the seal and maintain a sanitary and odor-free environment. Install, test and maintain in accordance with manufacturer's recommendations. Slope the sanitary sewer branch line for non-water use urinals a minimum of 1/4 inch per foot. Do not use copper tube or pipe for drain lines that connect to the urinal. Manufacturer shall provide an operating manual and on-site training to installation operations personnel for the proper care and maintenance of the urinal. For complexes, non-water using urinals are not required for barracks type spaces.

5.6.8. BUILDING WATER USE REDUCTION. Reduce building potable water use in each building 30 percent using IPC fixture performance requirements baseline.

5.6.9. Do not use engineered vent or Sovent® type drainage systems.

5.6.10. Where the seasonal design temperature of the cold water entering a building is below the seasonal design dew point of the indoor ambient air, and where condensate drip will cause damage or create a hazard, insulate plumbing piping with a vapor barrier type of insulation to prevent condensation. Do not locate water or drainage piping over electrical wiring or equipment unless adequate protection against water (including condensation) damage is provided. Insulation alone is not adequate protection against condensation. Follow ASHRAE Fundamentals Chapter 23, Insulation for Mechanical Systems, IMC paragraph 1107 and International Energy Conservation Code for pipe insulation requirements.

5.6.11. Cover all drain, waste and vent piping to prevent mortar or other debris from being flushed down and blocking pipes during such construction activities.

5.7. ELECTRICAL AND TELECOMMUNICATIONS SYSTEMS

5.7.1. STANDARDS AND CODES: The electrical systems for all facilities shall conform to APPLICABLE CRITERIA.

5.7.2. MATERIALS AND EQUIPMENT: Materials, equipment and devices shall, as a minimum, meet the requirements of Underwriters Laboratories (UL) where UL standards are established for those items. Wiring for branch circuits shall be copper. Motors larger than one-half horsepower shall be three phase. All electrical systems shall be pre-wired and fully operational unless otherwise indicated. Wall mounted electrical devices (power receptacles, communication outlets and CATV outlets) shall have matching colors, mounting heights and faceplates.

5.7.3. POWER SERVICE: Primary service from the base electrical distribution system to the pad-mounted transformer and secondary service from the transformer to the building service electrical equipment room shall be underground. See paragraph 6 for additional site electrical requirements.

5.7.3.1. Spare Capacity: Provide 10% space for future circuit breakers in all panelboards serving residential areas of buildings and 15% spaces in all other panelboards.

5.7.4. TELECOMMUNICATION SERVICE: Connect the project's facilities to the Installation telecommunications (voice and data) system through the outside plant (OSP) telecommunications underground infrastructure cabling system per the I3A Criteria. Connect to the OSP cabling system from each facility main cross connect located in the telecommunications room.

5.7.5. LIGHTING: Comply with the recommendations of the Illumination Engineering Society of North America (IESNA), the National Energy Policy Act and Energy Star requirements for lighting products..

5.7.5.1. Interior Lighting:

(a) Reflective Surfaces: Coordinate interior architectural space surfaces and colors with the lighting systems to provide the most energy-efficient workable combinations.

(b) High Efficiency Fluorescent Lighting: Utilize NEMA premium electronic ballasts and energy efficient fluorescent lamps with a Correlated Color Temperature (CCT) of 4100K. Linear fluorescent and compact fluorescent fixtures shall have a Color Rendering Index of (CRI) of 87 or higher. Fluorescent lamps shall be the low mercury type qualifying as non-hazardous waste upon disposal. Do not use surface mounted fixtures on acoustical

tile ceilings. Provide an un-switched fixture with emergency ballast shall be provided at each entrance to the building.

(c) Solid State Lighting: Fixtures shall provide lighting with a minimum Correlated Color Temperature (CCT) of 4100K and shall have a Color Rendering Index of (CRI) of 75 or higher. Verify performance of the light producing solid state components by a test report in compliance with the requirements of IESNA LM 80. Verify performance of the solid state light fixtures by a test report in compliance with the requirements of IESNA LM 79. Provide lab results by a NVLAP certified laboratory. The light producing solid state components and drivers shall have a life expectancy of 50,000 operating hours while maintaining at least 70% of original illumination level. Provide a complete five year warranty for fixtures.

(d) Metal Halide Lighting (where applicable): Metal Halide lamp fixtures in the range of 150-500 Watts shall be pulse start type and have a minimum efficiency rating of 88%.

(e) Lighting Controls: ANSI/ASHRAE/IESNA 90.1 has specific lighting controls requirements. Provide a high level of lighting system control by individual occupants or by specific groups in multi-occupant spaces (classrooms, conference rooms) to promote the productivity, comfort and well being of the building occupants. In office spaces, the preferred lighting should be a 30 FC ambient lighting level with occupancy sensor controlled task lighting in the work spaces to provide a composite lighting level of 50 FC on the working surfaces. Consider incorporating daylighting techniques for the benefit of reducing lighting energy requirements while improving the quality of the indoor spaces. If daylight strategies are used, additional coordination is required with the architect and mechanical engineer. Additionally, incorporate electric lighting controls to take advantage of the potential energy savings.

(f) Exterior Lighting: See paragraph 6.9 for site specific information, if any, on exterior lighting systems. Minimize light pollution and light trespass by not over lighting and use cut-off type exterior luminaries.

5.7.6. TELECOMMUNICATION SYSTEM: Building telecommunications cabling systems (BCS) and OSP telecommunications cabling system shall conform to APPLICABLE CRITERIA, including but not limited to I3A Technical Criteria. 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, grounding, and labeling.. Items included under OSP infrastructure encompass, but are not limited to, manhole and duct infrastructure, copper cable, fiber optic cable, cross connects, terminations, cable vaults, and copper and FO entrance cable.

5.7.6.1. Design, install, label and test all telecommunications systems in accordance with the I3A Criteria and ANSI/TIA/EIA 568, 569, and 606 standards. A Building Industry Consulting Services International (BICSI) Registered Communications Distribution Designer (RCDD) with at least 2 yrs related experience shall develop and stamp telecommunications design, and prepare the test plan. See paragraph 5.8.2.5 for design of environmental systems for Telecommunications Rooms.

5.7.6.2. The installers assigned to the installation of the telecommunications system or any of its components shall be regularly and professionally engaged in the business of the application, installation and testing of the specified telecommunications systems and equipment. Key personnel; i.e., supervisors and lead installers assigned to the installation of this system or any of its components shall be BICSI Registered Cabling Installers, Technician Level. Submit documentation of current BICSI certification for each of the key personnel. In lieu of BICSI certification, supervisors and installers shall have a minimum of 5 years experience in the installation of the specified copper and fiber optic cable and components. They shall have factory or factory approved certification from each equipment manufacturer indicating that they are qualified to install and test the provided products.

5.7.6.3. Perform a comprehensive end to end test of all circuits to include all copper and fiber optic cables upon completion of the BCS and prior to acceptance of the facility. Provide adequate advanced notification to the COR to allow COR and Installation personnel attendance The BCS circuits include but are not limited to all copper and fiber optic(FO) entrance cables, termination equipment, copper and fiber backbone cable, copper and fiber horizontal distribution cable, and workstation outlets. Test in accordance with ANSI/EIA/TIA 568 standards. Use test instrumentation that meets or exceeds the standard. Submit the official test report to include test procedures, parameters tested, values, discrepancies and corrective actions in electronic format. Test and accomplish all necessary corrective actions to ensure that the government receives a fully operational, standards based, code compliant telecommunications system.

5.7.7. LIGHTNING PROTECTION SYSTEM: Provide a lightning protection system where recommended by the Lightning Risk Assessment of NFPA 780, Annex L.

5.8. HEATING, VENTILATING, AND AIR CONDITIONING

5.8.1. STANDARDS AND CODES: The HVAC system shall conform to APPLICABLE CRITERIA.

5.8.2. DESIGN CONDITIONS.

5.8.2.1. Outdoor and indoor design conditions shall be in accordance with UFC 3-410-01FA. Outdoor air and exhaust ventilation requirements for indoor air quality shall be in accordance with ASHRAE 62.1. All Buildings with minimum LEED Silver requirement (or better) will earn LEED Credit EQ 7.1, Thermal Comfort-Design., except where precluded by other project requirements. Where the contract specifies indoor design temperature , airflow, humidity conditions, etc., use those parameters.

5.8.2.2. High Humidity Areas: Design HVAC systems in geographical areas meeting the definition for high humidity in UFC 3-410-01FA to comply with the special criteria therein for humid areas.

5.8.2.3. Cooling equipment may be oversized by up to 15 percent to account for recovery from night setforward. Heating equipment may be oversized by up to 30 percent to account for recovery from night setback. Design single zone systems and multi-zone systems to maintain an indoor design condition of 50% relative humidity for cooling only. For heating only where the indoor relative humidity is expected to fall below 20% for extended periods, add humidification to increase the indoor relative humidity to 30%. Provide ventilation air from a separate dedicated air handling unit (DOAU) for facilities using multiple single zone fan-coil type HVAC systems. Do not condition outside air through fan coil units. Avoid the use of direct expansion cooling coils in air handling units with constant running fans that handle outside air.

5.8.2.4. Locate all equipment so that service, adjustment and replacement of controls or internal components are readily accessible for easy maintenance.

5.8.2.5. Environmental Requirements for Telecommunications Rooms,(including SIPRNET ROOMS, where applicable for specific facility type). Comply with ANSI/EIA/TIA 569 and the I3A.

5.8.2.6. Fire dampers: dynamic type with a dynamic rating suitable for the maximum air velocity and pressure differential to which the damper is subjected. Test each fire damper with the air handling and distribution system running.

5.8.3. BUILDING AUTOMATION SYSTEM. Provide a Building Automation System consisting of a building control network , and integrate the building control network into the UMCS as specified.

The building control network shall be a single complete non-proprietary Direct Digital Control (DDC) system for control of the heating, ventilating and air conditioning (HVAC) systems as specified herein. The building control network shall be an Open implementation of LONWORKS® technology using ANSI/EIA 709.1B as the only communications protocol and use only LonMark Standard Network Variable Types (SNVTs), as defined in the LonMark® Resource Files, for communication between DDC Hardware devices to allow multi-vendor interoperability.

5.8.3.1. The building automation system shall be open in that it is designed and installed such that the Government or its agents are able to perform repair, replacement, upgrades, and expansions of the system without further dependence on the original Contractor. This includes, but is not limited to the following:

(a) Install hardware such that individual control equipment can be replaced by similar control equipment from other equipment manufacturers with no loss of system functionality.

(b) Necessary documentation (including rights to documentation and data), configuration information, configuration tools, programs, drivers, and other software shall be licensed to and otherwise remain with the Government such that the Government or its agents are able to perform repair, replacement, upgrades, and expansions of the system without subsequent or future dependence on the Contractor.

5.8.3.2. All DDC Hardware shall:

(a) Be connected to a TP/FT-10 ANSI/EIA 709.3 control network.

(b) Communicate over the control network via ANSI/EIA 709.1B exclusively.

(c) Communicate with other DDC hardware using only SNVTs

(d) Conform to the LonMark® Interoperability Guidelines.

(e) Be locally powered; link power (over the control network) is not acceptable.

(f) Be fully configurable via standard or user-defined configuration parameter types (SCPT or UCPT), standard network variable type (SNVT) network configuration inputs (*nci*), or hardware settings on the controller itself to support the application. All settings and parameters used by the application shall be configurable via standard or user-defined configuration parameter types (SCPT or UCPT), standard network variable type (SNVT) network configuration inputs (*nci*), or hardware settings on the controller itself

(g) Provide input and output SNVTs required to support monitoring and control (including but not limited to scheduling, alarming, trending and overrides) of the application. Required SNVTs include but are not limited to: SNVT outputs for all hardware I/O, SNVT outputs for all setpoints and SNVT inputs for override of setpoints.

(h) To the greatest extent practical, not rely on the control network to perform the application..

5.8.3.3. Controllers shall be Application Specific Controllers whenever an ASC suitable for the application exists. When an ASC suitable for the application does not exist use programmable controllers or multiple application specific controllers.

5.8.3.4. Application Specific Controllers shall be LonMark Certified whenever a LonMark Certified ASC suitable for the application exists. For example, VAV controllers must be LonMark certified.

5.8.3.5. Application Specific Controllers (ASCs) shall be configurable via an LNS plug-in whenever t an ASC with an LNS plug-in suitable for the application exists.

5.8.3.6. Each scheduled system shall accept a network variable of type SNVT_occupancy and shall use this network variable to determine the occupancy mode. If the system has not received a value to this network variable for more than 60 minutes it shall default to a configured occupancy schedule.

5.8.3.7. Gateways may be used provided that each gateway communicates with and performs protocol translation for control hardware controlling one and only one package unit.

5.8.3.8. Not Used

5.8.3.9. Perform all necessary actions needed to fully integrate the building control system. These actions include but are not limited to:

- Configure M&C Software functionality including: graphical pages for System Graphic Displays including overrides, alarm handling, scheduling, trends for critical values needing long-term or permanent monitoring via trends, and demand limiting.
- Install IP routers or ANSI/CEA-852 routers as needed to connect the building control network to the UMCS IP network. Routers shall be capable of configuration via DHCP and use of an ANSI/CEA-852 configuration server but shall not rely on these services for configuration. All communication between the UMCS and building networks shall be via the ANSI/CEA-709.1B protocol over the IP network in accordance with ANSI/CEA-852.

5.8.3.10. Provide the following to the Government for review prior to acceptance of the system:

- The latest version of all software and user manuals required to program, configure and operate the system.
- Points Schedule drawing that shows every DDC Hardware device. The Points Schedule shall contain the following information as a minimum:
    - Device address and NodeID.
    - Input and Output SNVTs including SNVT Name, Type and Description.
    - Hardware I/O, including Type (AI, AO, BI, BO) and Description.
    - Alarm information including alarm limits and SNVT information.
    - Supervisory control information including SNVTs for trending and overrides.
    - Configuration parameters (for devices without LNS plug-ins) Example Points Schedules are available at https://eko.usace.army.mil/fa/besc/

- Riser diagram of the network showing all network cabling and hardware. Label hardware with ANSI.CEA-709.1 addresses, IP addresses, and network names.
- Control System Schematic diagram and Sequence of Operation for each HVAC system.
- Operation and Maintenance Instructions including procedures for system start-up, operation and shut-down, a routine maintenance checklist, and a qualified service organization list.
- LONWORKS® Network Services (LNS®) database for the completed system.
- Quality Control (QC) checklist (below) completed by the Contractor's Chief Quality Control (QC) Representative

Table 5-1: QC Checklist

5.8.3.11. Perform a Performance Verification Test (PVT) under Government supervision prior to system acceptance. During the PVT demonstrate that the system performs as specified, including but not limited to demonstrating that the system is Open and correctly performs the Sequences of Operation.

5.8.3.12. Provide a 1 year unconditional warranty on the installed system and on all service call work. The warranty shall include labor and material necessary to restore the equipment involved in the initial service call to a fully operable condition.

5.8.3.13. Provide training at the project site on the installed building system Upon completion of this training each student, using appropriate documentation, should be able to start the system, operate the system, recover the system after a failure, perform routine maintenance and describe the specific hardware, architecture and operation of the system.

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5.8.4. TESTING, ADJUSTING AND BALANCING. Test and balance air and hydronic systems, using a firm certified for testing and balancing by the Associated Air Balance Council (AABC), National Environmental Balancing Bureau (NEBB), or the Testing Adjusting, and Balancing Bureau (TABB). The prime contractor shall hire the TAB firm directly, not through a subcontractor. Perform TAB in accordance with the requirements of the standard under which the TAB Firm's qualifications are approved, i.e., AABC MN-1, NEBB TABES, or SMACNA HVACTAB unless otherwise specified herein. All recommendations and suggested practices contained in the TAB Standard shall be considered mandatory. Use the provisions of the TAB Standard, including checklists, report forms, etc., as nearly as practicable to satisfy the Contract requirements. Use the TAB Standard for all aspects of TAB, including qualifications for the TAB Firm and Specialist and calibration of TAB instruments. Where the instrument manufacturer calibration recommendations are more stringent than those listed in the TAB Standard, adhere to the manufacturer's recommendations. All quality assurance provisions of the TAB Standard such as performance guarantees shall be part of this contract. For systems or system components not covered in the TAB Standard, the TAB Specialist shall develop TAB procedures. Where new procedures, requirements, etc., applicable to the Contract requirements have been published or adopted by the body responsible for the TAB Standard used (AABC, NEBB, or TABB), the requirements and recommendations contained in these procedures and requirements are mandatory.

5.8.5. COMMISSIONING: Commission all HVAC systems and equipment, including controls, and all systems requiring commissioning for LEED Enhanced commissioning, in accordance with ASHRAE Guideline 1.1, ASHRAE Guideline 0 and LEED. Do not use the sampling techniques discussed in ASHRAE Guideline 1.1 and in ASHRAE Guideline 0. Commission 100% of the HVAC controls and equipment. Hire the Commissioning Authority (CA), certified as a CA by AABC, NEBB, or TABB, as described in Guideline 1.1. The CA will be an independent subcontractor and not an employee of the Contractor nor an employee or subcontractor of any other subcontractor on this project, including the design professionals (i.e., the DOR or their firm(s)). The CA will communicate and report directly to the Government in execution of commissioning activities. The Contracting Officer’s Representative will act as the Owner’s representative in performance of duties spelled out under OWNER in Annex F of ASHRAE Guideline 0. All buildings with Minimum LEED Silver (or better) requirement will earn LEED Credit EA3 Enhanced Commissioning.

5.9. ENERGY CONSERVATION

5.9.1. The building including the building envelope, HVAC systems, service water heating, power, and lighting systems shall meet the Mandatory Provisions and the Prescriptive Path requirements of ASHRAE 90.1. Substantiation requirements are defined in Section 01 33 16, Design After Award.

5.9.2. Design all building systems and elements to meet the minimum requirements of ANSI/ASHRAE/IESNA 90.1. Design the buildings, including the building envelope, HVAC systems, service water heating, power, and lighting systems to achieve an energy consumption that is at least 40% below the consumption of a baseline building meeting the minimum requirements of ANSI/ASHRAE/IESNA Standard 90.1. Energy calculation methodologies and substantiation requirements are defined in Section 01 33 16, Design After Award.

5.9.3. Purchase Energy Star products, except use FEMP designated products where FEMP is applicable to the type product. The term “Energy Star product” means a product that is rated for energy efficiency under an Energy Star program. The term “FEMP designated product” means a product that is designated under the Federal Energy Management Program of the Department of Energy as being among the highest 25 percent of equivalent products for energy efficiency. When selecting integral sized electric motors, choose NEMA PREMIUM type motors that conform to NEMA MG 1, minimum Class F insulation system. Motors with efficiencies lower than the NEMA PREMIUM standard may only be used in unique applications that require a high constant torque speed ratio (e.g., inverter duty or vector duty type motors that conform to NEMA MG 1, Part 30 or Part 31).

5.9.4. Solar Hot Water Heating. Provide at least 30% of the domestic hot water requirements through solar heating methodologies, unless the results of a Life Cycle Cost Analysis (LCCA) developed utilizing the Building Life Cycle Cost Program (BLCC) which demonstrates that the solar hot water system is not life cycle cost effective in comparison with other hot water heating systems. The type of system will be established during the contract or task order competition and award phase, including submission of an LCCA for government evaluation to justify non-selection of solar hot water heating. The LCCA uses a study period of 25 years and the Appendix K utility cost information. The LCCA shall include life cycle cost comparisons to a baseline system to provide domestic hot water without solar components, analyzing at least two different methodologies for providing solar hot water to compare against the baseline system.

5.9.5. Process Water Conservation. When potable water is used to improve a building’s energy efficiency, employ lifecycle cost effective water conservation measures, except where precluded by other project requirements.

5.9.6. Renewable Energy Features. The Government’s goal is to implement on-site renewable energy generation for Government use when lifecycle cost effective. See Paragraph 6, PROJECT SPECIFIC REQUIREMENTS for renewable energy requirements for this project.

5.10. FIRE PROTECTION

5.10.1. STANDARDS AND CODES Provide the fire protection system conforming to APPLICABLE CRITERIA.

5.10.2. Inspect and test all fire suppression equipment and systems, fire pumps, fire alarm and detection systems and mass notification systems in accordance with the applicable NFPA standards. The fire protection engineer of record shall witness final tests. The fire protection engineer of record shall certify that the equipment and systems are fully operational and meet the contract requirements. Two weeks prior to each final test, the contractor shall notify, in writing, the installation fire department and the installation public work representative of the test and invite them to witness the test.

5.10.3. Fire Extinguisher Cabinets: Provide fire extinguisher cabinets and locations for hanging portable fire extinguishers in accordance with NFPA 10 Standard for Portable Fire Extinguishers. The Government will furnish and install portable fire extinguishers, which are personal property, not real property installed equipment.

5.10.4. Fire alarm and detection system: Required fire alarm and detection systems shall be the addressable type. Fire alarm initiating devices, such as smoke detectors, heat detectors and manual pull stations shall be addressable. When the system is in alarm condition, the system shall annunciate the type and location of each alarm initiating device. Sprinkler water flow alarms shall be zoned by building and by floor. Supervisory alarm initiating devices, such as valve supervisory switches, fire pump running alarm, low-air pressure on dry sprinkler system, etc. shall be zoned by type and by room location.

5.10.5. Roof Access: Paragraph 2-9 of UFC 3-600-01 Fire Protection for Facilities will be modified in the next update to that UFC. Pending revision, comply with roof access and stairway requirements in accordance with the International Building Code. Where roof access is required by the IBC or other criteria, comply with UFC 4-010-01, Anti-Terrorist Force Protection, Standard 14. "Roof Access".

5.10.6. Fire Protection Engineer Qualifications: In accordance with UFC 3-600-01, FIRE PROTECTION ENGINEERING FOR FACILITIES**,** the fire protection engineer of record shall be a registered professional engineer (P.E.) who has passed the fire protection engineering written examination administered by the National Council of Examiners for Engineering and Surveys (NCEES), or a registered P.E. in a related engineering discipline with a minimum of 5 years experience, dedicated to fire protection engineering that can be verified with documentation.

5.11. SUSTAINABLE DESIGN

5.11.1. STANDARDS AND CODES: Sustainable design shall conform to APPLICABLE CRITERIA. See paragraph 6, PROJECT-SPECIFIC REQUIREMENTS for which version of LEED applies to this project. The LEED-NC Application Guide for Multiple Buildings and On-Campus Building Projects (AGMBC) applies to all projects. Averaging may be used for LEED compliance as permitted by the AGMBC but is restricted to only those buildings included in this project. Each building must individually comply with the requirements of paragraphs ENERGY CONSERVATION and BUILDING WATER USE REDUCTION.

5.11.2. LEED RATING, REGISTRATION, VALIDATION AND CERTIFICATION: See Paragraph PROJECT-SPECIFIC REQUIREMENTS for project minimum LEED rating/achievement level, for facilities that are exempt from the minimum LEED rating, for LEED registration and LEED certification requirements and for other project-specific information and requirements.

5.11.2.1. Innovation and Design Credits. LEED Innovation and Design (ID) credits are acceptable only if they are supported by formal written approval by GBCI (either published in USGBC Innovation and Design Credit Catalog or accompanied by a formal ruling from GBCI). LEED ID credits that require any Owner actions or commitments are acceptable only when Owner commitment is indicated in paragraph PROJECT-SPECIFIC REQUIREMENTS or Appendix LEED Project Credit Guidance

5.11.3. OPTIMIZE ENERGY PERFORMANCE. : Project must earn, as a minimum, the points associated with compliance with paragraph ENERGY CONSERVATION. LEED documentation differs from documentation requirements for paragraph ENERGY CONSERVATION and both must be provided. For LEED-NC v2.2 projects you may substitute ASHRAE 90.1 2007 Appendix G in its entirety for ASHRAE 90.1 2004 in accordance with USGBC Credit Interpretation Ruling dated 4/23/2008.

5.11.4. COMMISSIONING. See paragraph 5.8.5 COMMISSIONING for commissioning requirements. USACE templates for the required Basis of Design document and Commissioning Plan documents are available at http://en.sas.usace.army.mil (click on Engineering Criteria) and may be used at Contractor's option.

5.11.5. DAYLIGHTING. Except where precluded by other project requirements, do the following in at least 75 percent of all spaces occupied for critical visual tasks: achieve a 2 percent glazing factor (calculated in accordance with LEED credit EQ8.1) OR earn LEED Daylighting credit, provide appropriate glare control and provide either automatic dimming controls or occupant-accessible manual lighting controls.

5.11.6. LOW-EMITTING MATERIALS. Except where precluded by other project requirements, use materials with low pollutant emissions, including but not limited to composite wood products, adhesives, sealants, interior paints and finishes, carpet systems and furnishings,

5.11.7. CONSTRUCTION INDOOR AIR QUALITY MANAGEMENT. Except where precluded by other project requirements, earn LEED credit EQ 3.1 Construction IAQ Management Plan, During Construction and credit EQ 3.2 Construction IAQ Management Plan, Before Occupancy.

5.11.8. RECYCLED CONTENT. In addition to complying with section RECYCLED/RECOVERED MATERIALS, earn LEED credit MR4.1, Recycled Content, 10 percent except where precluded by other project requirements.

5.11.9. BIOBASED AND ENVIRONMENTALLY PREFERABLE PRODUCTS. Except where precluded by other project requirements, use materials with biobased content, materials with rapidly renewable content, FSC certified wood products and products that have a lesser or reduced effect on human health and the environment over their lifecycle to the maximum extent practicable.

5.11.10. FEDERAL BIOBASED PRODUCTS PREFERRED PROCUREMENT PROGRAM (FB4P). The Farm Security and Rural Investment Act (FSRIA) of 2002 required the U.S. Department of Agriculture (USDA) to

create procurement preferences for biobased products that are applicable to all federal procurement (to designate products for biobased content). For all designated products that are used in this project, meet USDA biobased content rules for them except use of a designated product with USDA biobased content is not required if the biobased product (a) is not available within a reasonable time, (b) fails to meet performance standard or (c) is available only at an unreasonable price. For biobased content product designations, see http://www.biopreferred.gov/ProposedAndFinalItemDesignations.aspx.

5.12. CONSTRUCTION AND DEMOLITION (C&D) WASTE MANAGEMENT: Achievement of 50% diversion, by weight, of all non-hazardous C&D waste debris is required. Reuse of excess soils, recycling of vegetation, alternative daily cover, and wood to energy are not considered diversion in this context, however the Contractor must tracked and report it. A waste management plan and waste diversion reports are required, as detailed in Section 01 57 20.00 10, ENVIRONMENTAL PROTECTION.

5.13. SECURITY (ANTI-TERRORISM STANDARDS): Unless otherwise specified in Project Specific Requirements, only the minimum protective measures as specified by the current Department of Defense Minimum Antiterrorism Standards for Buildings, UFC 4-010-01, are required for this project. The element of those standards that has the most significant impact on project planning is providing protection against explosives effects. That protection can either be achieved using conventional construction (including specific window requirements) in conjunction with establishing relatively large standoff distances to parking, roadways, and installation perimeters or through building hardening, which will allow lesser standoff distances. Even with the latter, the minimum standoff distances cannot be encroached upon. These setbacks will establish the maximum buildable area. All standards in Appendix B of UFC 4-010-01 must be followed and as many of the recommendations in Appendix C that can reasonably be accommodated should be included. The facility requirements listed in these specifications assume that the minimum standoff distances can be met, permitting conventional construction. Lesser standoff distances (with specific minimums) are not desired, however can be provided, but will require structural hardening for the building. See Project Specific Requirements for project specific siting constraints. The following list highlights the major points but the detailed requirements as presented in Appendix B of UFC 4-010-01 must be followed.

(a) Standoff distance from roads, parking and installation perimeter; and/or structural blast mitigation

(b) Blast resistant windows and skylights, including glazing, frames, anchors, and supports

(c) Progressive collapse resistance for all facilities 3 stories or higher. Unless determined otherwise by the Installation and noted in paragraphs 3 or 6, the building shall be considered to have areas of uncontrolled public access when designing for progressive collapse.

(d) Mass notification system (shall also conform to UFC 4-021-01, Mass Notification Systems)

(e) For facilities with mailrooms (see paragraph 3 for applicability) – mailrooms have separate HVAC systems and are sealed from rest of building

6.0 PROJECT SPECIFIC REQUIREMENTS FORT CARSON, CO

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:

6.3.1.1. Omaha District Corps of Engineers Standard Details and CADD Cells

The Omaha District's Civil CADD standard details and cells are available at:

https://www.nwo.usace.army.mil/html/ed-d/civil.html. The Omaha District's Environmental standard details and CADD cells are available on the Omaha District FTP site. These standards and cells are available for the Contractor's use. References to using exact details and drawings are found in this section. In those cases, use the referenced standard drawings and or details.

6.3.1.2. Contractor's Staging Area

Locate the Contractor’s staging area as shown on the RFP drawings. Return the staging area to its original condition upon completion of construction.

6.3.1.3. Project Sign

Provide a project sign in accordance to Omaha District Standard drawing C8-2 PROJECT SIGN DETAILS.

6.3.1.4. New Construction

All new construction is located entirely within the limits of Government-controlled lands. Develop the design drawings using the same vertical and horizontal datum's as the engineering survey.

6.3.1.5. Building Site

Locate and construct the new facility including associated site structures, roads, parking, utilities, entry courtyards, loading areas, storm water drainage systems and landscaping as indicated on the drawings located in Appendix J - Drawings and as specified herein. All features shown on the site plan are considered project requirements. Contractor may slightly modify exact locations of all features shown on the site plan as needed to accommodate the final project layout. All site layout changes are subject to approval by the Government. Government supplied site plans are provided to assist the Contractor in the preparation of their proposal and design. The site plans are available to the Contractor in Appendix J furnished with this solicitation. Identify any errors to the Contracting Officer immediately for resolution and direction. The Contractor shall take all professionally prudent and reasonable actions to verify the accuracy of the data provided. The Contractor will prepare the final site plans.

6.3.1.5.1 Asphalt Parking Areas

Provide an asphalt parking area with concrete curb and gutter for the number and type of parking stalls indicated on the drawings. Parking stalls are to be 9 feet wide. Perimeter stalls where vehicle overhang is available are to be

18 feet long. Stalls with no curb overhang are to be 20 feet long. Provide driving aisles that are a minimum of 24 feet wide. Provide handicap parking stalls, ramps, and signage meeting the requirements of 28 CFR Part 36. Provide handicap ramps with detectable warnings on the walking surfaces at locations were sidewalks end at curbs adjacent to parking lots, roads, intersections, and at other locations shown on the drawings. Detectable warnings consist of raised truncated dome pavers with a diameter of nominal 0.9 inches, a height of nominal 0.2 inches and a center-to-center spacing of nominal 2.35 inches and shall contrast visually with adjoining surfaces, either light-on-dark, or dark-on-light. Warning pavers shall be installed per Colorado Springs Standard Designs. The material used to provide contrast needs to be an integral part of the walking surface. Detectable warnings used on interior surfaces shall differ from adjoining walking surfaces in resiliency or sound-on-cane contact. Delineate parking stalls with 4-inch wide white stripes. Provide separate drawing showing pedestrian circulation in the final design package.

6.3.1.5.2 Concrete Paved Areas

a. Motorcycle Parking Areas

Provide concrete paved areas for motorcycle parking as indicated on the drawings. Parking stalls are to be 5 feet wide and 10 feet long. Delineate parking stalls with 4-inch wide white stripes.

6.3.1.5.3 Walks and Entry Sidewalks

Provide exterior concrete walks, courtyards, bicycle parking, and entry sidewalks at the locations and widths as shown on the drawings. The Contractor may slightly revise the exact location as needed to accommodate the final project layout and floor plan. All site layout changes are subject to approval by the Government. Provide walks accessing the handicapped entrances that meet the requirements of the American Disability Act. P.C. concrete sidewalks are to be a minimum of 4 inches thick. Walks used for fire department (emergency vehicle) access need to conform to UFC 3-600-01 and NFPA 1.

6.3.1.5.4 Fencing

All chain-link fencing material shall be galvanized.

6.3.1.5.4.1 Construction Area/Safety Fencing

Enclose the construction site with a construction area fence throughout the duration of the contract. Fence is to be a minimum of 4 feet tall and fence fabric needs to be chain-link or approved equal. Dispose all construction area and safety fence materials outside the limits of Government-controlled lands upon completion of construction.

6.3.2. Site Structures and Amenities

6.3.2.1. Dumpster and Recycle Bin Pads and Screen Wall Enclosures

Provide concrete pads and dumpster and recycle bin screen wall enclosures at the location(s) shown in Appendix J - Drawings. Construct screen wall enclosures and gates of materials compatible with the new facility exterior walls. Coordinate the color with the installation. Provide 8 cubic yard size dumpsters.

6.3.2.2. Retaining Walls

Provide interlocking segmental concrete block retaining walls where required. Engineer the storm drainage to flow around the top and not over the walls. Color, design and size of the concrete blocks for retaining walls need to compliment the building.

6.3.2.3. Exterior Equipment Pads

Provide P.C. concrete pads for exterior equipment. Design and size pads to accommodate the furnished equipments weight and dimensions.

6.3.2.4 Exterior Furniture, Structures

6.3.2.4.1 Exterior Furniture and Structures.

Provide exterior furniture and structures including benches, bicycle racks, trash containers, cigarette and disposal containers according to the RFP drawings for quantities and locations. Construct bicycle Racks of materials strong enough to resist attempted forcible removal of bicycles and be permanently mounted to the surfacing. Provide all metal furnishings with baked on powder coated finishes capable of withstanding local weather extremes for a period of 10 years. Provide exterior furniture that is durable, permanently mounted to the surfacing and made of materials and colors to compliment the building. Acceptable materials for site furnishings include the following materials or combination thereof: precast concrete, tubular steel.

6.3.3. Site Functional Requirements:

6.3.3.1. Stormwater Management (SWM) Systems.

6.3.3.1.1. Determination of Storm Runoff

Determine discharges from storm event using the applicable local Municipal or State Manuals.

6.3.3.1.2. Design Storm Return Period

Size storm drains and culverts for a design storm with a return period of 10 years. Make provisions to protect all buildings and critical structures from a major storm event with a return period of 100 years.

6.3.3.1.3. Rainfall Depth-Duration-Frequency Data

Obtain rainfall Intensity-Duration data from the City of Colorado Springs Drainage Criteria Manual.

6.3.3.1.4. Storm Drainage System Design

Design the storm drainage system. Submittals of pipe samples are not required. Design the storm drainage system so as to minimize the number of drainage structures required. Locate structures at all changes in direction of storm drain line, at the intersection of two or more storm drain lines, and where required to intercept rainfall runoff. The maximum distance between drainage structures shall be approximately 300 feet for conduits less than 30 inches in diameter. The maximum distance between drainage structures shall be approximately 500 feet for conduits 30 inches and greater in diameter. Where possible, provide a minimum drop of 0.2 feet between inverts of equal diameter storm drain pipes at the centerline of drainage structures. Where storm drain pipes are of different diameters, match the pipe crown elevations at the drainage structure. Storm drain pipes shall have a minimum

diameter of 12 inches. Locate storm drain lines outside of paved areas to the extent possible. Do not locate storm drain lines beneath buildings.

6.3.3.1.5. Hydraulic Design

Design new storm drain pipes for gravity flow during the 10-year design storm unless otherwise approved by the Government. Calculate the hydraulic grade line for the storm drain system and all energy losses accounted for. Design storm drain systems to provide a minimum flow velocity of 2.5 feet per second when the drains are one-third or more fill.

6.3.3.1.6. Manholes

Diameter of manholes needs to be large enough to accommodate pipes entering/exiting the manhole. Provide manhole cast iron frames with a minimum opening diameter of 24 inches. Provide galvanized steel ladders in all manholes with a depth exceeding 6 feet.

6.3.3.1.7. Area Inlets

Size and design area inlets to accommodate the design flows.

6.3.3.1.8. Curb Inlets

Avoid locating parking area curb inlets at building entrances if possible. Space and size curb inlets along two-lane streets so that the flow in the gutter and ponded areas at low points do not cover the crown of the street.

6.3.3.1.9. Headwalls and Flared End Sections

Unless otherwise approved, provide headwalls or flared end sections at the ends of culverts and at storm drain outfalls. Provide protection from erosion and scouring at headwall and flared end section outfalls as needed.

6.3.3.1.10. Culverts

Provide culvert pipes with a minimum diameter of 18 inches wherever possible.

6.3.3.1.11. Roof Drain Outfall Lines

Where downspouts discharge onto turfed areas or mulched beds, concrete splash blocks are required as a minimum. Downspouts may not discharge onto sidewalks. Where downspouts discharge onto paved areas, connecting to the storm drainage system with PVC or HDPE pipe is required. The minimum diameter for roof drain lines is 6 inches. Use 45 degree bends for all changes in direction.

6.3.3.1.12. Storm Drainage Detention Pond

Size detention pond(s) following the local Municipal or State criteria for the 10 and 100 year storm events. Design detention pond drain time to accommodate the storm system and have a total release rate not to exceed 72 hours.

6.3.3.1.13. Storm Drain and Culvert Pipe Materials

Select the appropriate storm drain and culvert pipe materials from the list below. Pipe, bedding, and backfill shall be of adequate strength (or stiffness) to support the earth, live, and construction loads imposed on the pipe. Only pipe materials which have a minimum design service life of 25 years are allowed for permanent installations. As a minimum, provide soil tight pipe joints. Specify watertight pipe joints and flexible resilient pipe connectors at drainage structures when the water table is at or above the pipeline.

(a) Concrete Pipe. Reinforced concrete pipe shall be a minimum of Class III. Type I cement may be used only when sulfates in the soil are 0.1 percent or less and dissolved sulfates in the effluent are 150 ppm or less. Type I cement may be used only when sulfates in the soil are 0.2 percent or less and dissolved sulfates in the effluent are 1,500 ppm or less. Only Type V cement may be used if sulfates in the soil exceed 0.2 percent or dissolved sulfates in the effluent exceed 1,500 ppm. Assume concrete pipe to have a minimum design service life of 50 years unless

the Contractor determines that conditions at the site will reduce the service life. Protect concrete culverts and storm drains by a minimum of 3 feet of cover during construction to prevent damage before permitting heavy construction equipment to pass over them during construction.

(b) Plastic Pipe. Stiffness of the plastic pipe and soil envelope shall be such that the predicted long-term deflection shall not exceed 7.5 percent. Protect plastic culverts and storm drains by a minimum of 3 feet of cover during construction to prevent damage before permitting heavy construction equipment to pass over them during construction. Split couplers shall not be allowed for corrugated high-density polyethylene pipe. Assume plastic pipe to have a minimum design service life of 50 years unless the Contractor determines that conditions at the site will reduce the service life.

6.3.3.1.14. Storm Drainage Security Requirements

Install bars on drainage structures and water passages penetrating under a security fence or boundary to provide penetration resistance equivalent to the fence itself. Protect openings to the drainage structures having a cross-sectional area greater than 96 square inches and a smallest dimension greater than 6 inches by securely fastened welded bar grills. As an alternative, drainage structures may be constructed of multiple pipes, each pipe having a diameter of 10 inches or less, joined to each other and to the drainage culvert.

No additional requirements.

6.3.3.2. Erosion and Sediment Control

Select and implement Best Management Practices (BMPs) to minimize pollutants in storm water discharges associated with construction activity at the construction site. Maintain all erosion and sediment measures and other protective measures in effective operating condition. Remove all temporary structural practices once the corresponding disturbed drainage area has been permanently stabilized. In the State of Colorado, EPA has authority for the National Pollutant Discharge Elimination System (NPDES) on Federal Facilities. If construction activities results in the disturbance of 1 acre of land or more, coverage under the EPA Storm Water General Permit For Construction Activities (Permit No. COR10000F) is required. The Contractor is the responsible permittee. Comply with the requirements in Appendix E. Fort Carson Army installation is required to comply with EPA Region 8 MS4 (Municipal Separate Storm Sewer Systems) for federal facilities. To the maximum extent possible within the government identified contract cost limitation (CCL), the design should retain or utilize existing landscape vegetation in the Contractor's landscape and architectural design development.

6.3.3.2.1. Temporary Construction Entrance

Keep tracking of mud from the construction site onto adjacent roads and streets to a minimum. Construct a temporary stabilized stone pad at points where vehicular traffic will be leaving the construction site and moving directly onto a paved road or street. It shall extend the fill width of the vehicular ingress and egress area and have a minimum length of 70 feet. Maintain the entrance in a condition which will prevent tracking or flow of mud onto adjacent roads or streets. If conditions on the site are such that the majority of the mud is not removed by the vehicles traveling over the stone, wash the tires of the vehicles before entering the road or street. Remove any mud which is tracked onto roads or streets at least once daily.

6.3.3.2.2. Erosion Control Blanket

Cover bottoms and side slopes of ditches and any other disturbed slopes 1V on 3H or steeper with an erosion control blanket immediately after seeding.

6.3.3.2.3. Silt Fence

Install silt fencing below disturbed areas where erosion would occur in the form of sheet and rill erosion. The size of the drainage area above the silt fence shall not exceed one fourth of an acre per 100 feet of silt fence length. Silt fencing may be installed across ditches only when the maximum contributing drainage area is not greater than 1 acre. Silt fence constructed across a ditch shall have wire support and shall be of sufficient length to eliminate endflow.

6.3.3.2.4. Straw Bale Barrier

Do not install straw bale barriers across ditches.

6.3.3.2.5. Outlet Protection

Install preformed riprap lined scour holes or other suitable measures at outlets of culverts and storm drains as needed to prevent erosion.

6.3.3.2.6. Storm Drain Inlet Protection

Install storm drain inlet protection around any new or existing storm drain inlets that will become operational before permanent stabilization of the corresponding disturbed drainage area has occurred. Include either a sediment filter or an excavated area around the storm drain inlet for storm drain inlet protection.

6.3.3.2.7. Rock Check Dam

Rock check dams may be installed in ditches which drain 2 to 10 acres. The allowable drainage area will be dependent on the gradation of the rock used to construct the check dam. The maximum height of the dam is 3 feet. The center of the dam shall be at least 6 inches lower than the outer edges. For added stability, the base of the check dam may be keyed into the soil approximately 6 inches. The maximum spacing between the dams should be such that the toe of the upstream dam is at the same elevation as the top of the downstream dam.

6.3.3.2.8. Temporary Sediment Trap

Temporary sediment traps may be constructed below disturbed areas where the total drainage area is less than 3 acres.

6.3.3.2.9. Temporary Sediment Basin

Temporary sediment basins may be constructed below disturbed areas where the total drainage area is equal to or greater than 3 acres.

6.3.3.2.10. Other Controls

Other controls such as diversion dikes, level spreaders, temporary seeding, etc. may be used if the Contractor deems necessary

6.3.3.3. Vehicular Circulation.

See Appendix J – Drawings for Vehicular Circulation

6.4. SITE ENGINEERING

6.4.1. Existing Topographical Conditions

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

6.4.1.1 Contractor-Supplied Engineering Survey

Complete the engineering survey of the project site. Provide the survey CADD files in English units and Microstation V8 format. Use the survey to prepare the design drawings. Gather contours at 1-foot intervals. Obtain below grade utility data from a utility location company hired by the Contractor.

(a) Ground Control

The horizontal control datum for the engineering survey shall be NAD 83, Colorado State Plane Coordinate System, Central zone. The vertical datum control datum for the survey shall be NAVD 88.

(b) Survey of As-Built Utility Lines.

Locate all new underground utility lines (including electrical power and communications, gas, water, sanitary sewer, storm drains, roof drains and culverts) during installation using surveying equipment. Survey pipe invert of gas, water, sanitary sewer, industrial waste, storm drains, roof drains and culverts and top of duct bank of electrical power and communications lines. Survey storm drains and sanitary sewer lines where pipes enter manholes and inlets and at 100-foot maximum intervals along the line. Survey the inverts of all cleanouts and tees. Survey inverts at each end of culverts. Survey electrical power, communications, gas and water lines at all manholes, tees, valves, corners, changes in direction and at intervals along the line which will accurately depict the location of the line in both horizontal and vertical directions (50-foot maximum interval). Survey accuracy shall meet or exceed National Map Standards for 1"-50' mapping. Survey shall be in NAD 83, Colorado State Plane Coordinate System, Central zone. The vertical datum control datum for the survey shall be NAVD 88 respectively. Provide digital copies of As-Built information to the Contractors Officer Representative (COR) every two weeks during construction or according to the schedule of deliverable products as defined by the COR.

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

6.4.2.1. Preliminary Geotechnical Report

The preliminary report is based on the best available data at the time the RFP document was prepared. As such, the preliminary report provides a general overview of soil and geologic conditions anticipated at the project site. In some instances, preliminary data may not be site specific, but is based on data from near-by projects. Use this information for early planning and preliminary design only. This information may also be used to supplement future site-specific geotechnical information for final design.

6.4.2.2. Final Geotechnical Report

Conduct and prepare the final geotechnical investigation and report in accordance with generally accepted engineering principles and practices in the State of Colorado. A licensed professional geotechnical engineer in the State of Colorado with at least five years experience preparing geotechnical reports in similar soil conditions shall prepare the report. Submit the final report in sufficient detail to accurately characterize site conditions and provide final design parameters for utility excavations, foundations, floor slabs, retaining walls, embankments, surface and subsurface drainage, and pavements. In the report, provide a log of each boring that includes as a minimum a clear description of each soil type encountered, the depths at which changes in material occur, ground water levels, and the depths of bedrock including the start of competent bedrock suitable as a bearing surface for foundations.

6.4.2.3. Other Design Criteria

Expansive soils are known to exist at Fort Carson. Address mitigation requirements for foundations, floor slabs, and pavements in the final geotechnical report. Drilled shafts with structural floor systems or over excavation and

replacement of native soils with non-expansive soils are proven techniques for successfully mitigating expansive soils at Fort Carson. Moisture conditioning and re-compaction of native soils beneath footings and floor slabs is not acceptable as a suitable, long-term method for expansive soil mitigation. Address viable alternatives for mitigating expansive soils and recommend a preferred method for design in the final geotechnical report.

6.4.3. Fire Flow Tests See Appendix D for results of fire flow tests to use for basis of design for fire flow and domestic water supply requirements.

No additional requirements.

6.4.4. Pavement Engineering and Traffic Estimates:

6.4.4.1. Pavement Design

Pavement Design

Design pavements for permanent installations for a life of 25 years. Design pavements for seasonal frost conditions. Base final pavement design on the Final Geotechnical Report. Design all pavements using the State of Colorado DOT requirements. For the AASHTO design method, use the following parameters:

Reliability = 90 percent
Standard Deviation = 0.35 for rigid and 0.45 for flexible pavement
Initial Serviceability Index = 4.2
Terminal Serviceability Index = 2.5

6.4.4.2. Sidewalks and Curb and Gutter

(a) Sidewalks

Sidewalks shall conform to the applicable State of Colorado DOT requirements. Provide sidewalks as shown on Appendix J – Drawings and connect to other existing walks in the immediate vicinity.

(b) Sidewalks for Fire Department (Emergency Vehicle) Access

Concrete sidewalks used for Fire Department access shall be a minimum 8” P.C.C. and 10” of base course material with 12” compacted subgrade to 90%.

6.4.4.3. Curb and Gutter

Curb and gutter shall conform to the applicable State of Colorado DOT requirements.

6.4.4.4. Joint Sealing

Joint Sealing shall conform to the applicable State of Colorado DOT requirements.

6.4.4.5. Additional Information

No additional requirements.

6.4.5. Traffic Signage and Pavement Markings Provide traffic signage and striping for all new roads and parking areas. Design signage and striping in accordance with MUTCD Manual on Uniform Traffic Control Devices for Streets and Highways. Provide striped parking areas, roads and streets with non-reflectorized paint that contains low volatile organic compounds (VOCs). Provide exterior signage for handicap parking areas to include van accessible stalls parking areas. Provide stop signs at intersections where access roads from parking areas enter roadways. Provide pedestrian signage and striping at all crosswalks.

6.4.6. Base Utility Information

6.4.6.1. Existing Base Utility Information

(a) Electrical Service

The Fort Carson Department of Public Works (DPW) provides electrical service on this installation Coordinate with DPW / Base Operations Division (BOD) for points of connection to the base electrical system. Contact DPWIBOD, Alan Davis, Alan.L.Davis@us.army.mil, 719-526-6673. See Appendix D for drawings of existing utilities and also utilities that may be proposed or under construction but is relevant to this project.

(b) Communications Service

The Fort Carson Directorate of Information Management (DOIM) provides communications service on this installation. Coordinate with DOIM, Leon Drew, Leon.Drew1@us.army.mil, 719-331-2241. See Appendix J for drawings of existing utilities and also utilities that may be proposed or under construction but is relevant to this project.

(c) Cable TV Service

Cable TV service on this installation is privatized and is provided by:

Baja Broadband
521 Corporate Center Drive
Suite 100
Fort Mill, SC 29707

Contact Delores Womble (980) 235-7643 for TV service information (dwomble@orangebroadband.com). Coordinate with cable TV service for cable TV provisions. Provide all cabling back to the cable television backboard. Baja Broadband will bring cable plant to the building entrance and will connect all terminations at the backboard.

(d) Local Telephone Service

Local telephone service on this installation is privatized and is provided by Qwest Communications.

6.4.6.2. Waterlines

(a) Design and construct water distribution systems and service lines in accordance with applicable criteria. Protect existing waterlines. If any potable waterlines are damaged during construction, immediately notify the Contracting Officer. Disinfect all new water lines and any remaining lines which do not remain fully pressurized during construction or connection in accordance with state and local criteria. Notify the Contracting Officer prior to disinfection of the water lines. The disinfection methods utilized will be in accordance with the American Water Works Association Standard AWWA C651 and shall not be considered complete until two consecutive days of bacteriological samples show no contamination. Colorado Department of Public Health and Environment (CDPHE) certified laboratories shall perform all bacteriological, lead and copper tests. Forward copies of results of the analyses to the Contracting Officer and the DPW upon receipt and prior to placing the water line in service.

(b) Design and provide all facilities required to deliver adequate water to the project. Make service connections or extensions to the existing water distribution system without interruption to service. Be cognizant of the different pressure zones existing in the Ft Carson Water distribution system and coordinate with the installation to ensure new waterlines do not cross connect pressure zones. Loop new water distribution mains in accordance with UFC 3-600-01. Design the domestic demand for the new facility served in accordance with the International Plumbing Code Fixture Count Method. For design of the waterlines, use maximum Hazen-Williams "C" value of 130 for plastic pipe and 120 for other pipe materials. Waterlines shall have a minimum depth of bury of 5 feet and fire waterlines shall have an additional 6 inches of depth of bury. Waterlines shall be PVC. HDPE may be used for waterlines and fire waterlines if directional drilling is used to install the lines. An air relief valve is required at the high point of all water mains. A blow-off valve or hydrant shall not be considered as a substitute for an air relief valve. Design pipe grades to minimize the use of air relief valves wherever possible. Stainless steel tapping sleeves are allowed where the branch line is less than or equal to one half the size of the line being tapped. Use cast iron tapping sleeves if the tap size is greater than 50% of the pipe being tapped.

6.4.6.2.1. Water Distribution and Service Lines

(a) Flow Requirements. Supply water by service lines of appropriate capacity to provide the flows and pressure determined to be necessary to meet all requirements of the new facility. The requirements include all domestic use, interior and exterior fire protection water, and lawn sprinkler/irrigation systems, as required.

(b) Service Connections. Make service connections using corporation stops, appropriate gooseneck connections, or tapping sleeves and valves.

(c) Dewatering, Hydrostatic Testing, and Flushing of Lines. Implement the terms and requirements of AWWA C605 and AWWA M55 for dewatering, hydrostatic testing, and flushing of lines prior to disinfection.

(d) Domestic Service Stop Valve. Provide separate service and stop valves for building(s) in areas readily accessible to maintenance and emergency personnel. Stop valves located in walks are prohibited.

6.4.6.2.2. Dedicated Fire Water Service Lines

(a) Fire Flow Data. Government has provided the fire flow test for this site as part of this RFP for bidding purposes only. See Appendix D. For determination and documentation of fire protection, conduct and provide all fire hydrant flow tests. Data to be included with the flow tests are static pressures, residual pressures, flowrates, date, domestic and fire pumps in operation, and PRV setting (open/close), time tests were conducted, and name of personnel conducting the fire hydrant flow tests. Show the static pressures, residual pressures, flowrates, test hydrant and flow hydrants on the appropriate contract drawings. Conduct fire hydrant flow tests required for fire protection design in accordance with the procedures specified in AWWA M17, Installation, Field Testing, and Maintenance of Fire Hydrants. Coordinate with the Contracting Officer prior to conducting such tests. Submit fire hydrant flow test data to the Corps of Engineers prior to performing the design calculations. Become familiar with the existing water system prior to conducting the hydrant flow test(s). If actual conditions vary from the presumed conditions depicted in the government furnished flow tests, which require a change in the design from that assumed in the proposal, contact the government immediately for a determination of whether a changed site condition exists.

(b) Fire Hydrants. Install fire hydrants for the new facility. Locate one fire hydrant within a minimum of 150 feet of the building fire department connection. Locate all other hydrants in accordance with NFPA 24 or such that all portions of the facility (and hardstand, where applicable) can be reached by 350 foot length of hose. Assure the Fire Department has access to all fire hydrants.

(c) Dedicated Fire Line. Provide a separate fire water service line to the building for interior fire sprinkler protection in accordance with NFPA 24 and UFC 3-600-01. Equip the fire water service line to the building with a Post Indicator Valve (PIV) that can be readily located by the fire department. Do not place the PIV closer than 40 feet to the building it is serving and provide it with a tamper switch connected to the building fire control panel.

(d) The Government desires a fire protection system which avoids the use of fire pumps. If fire pumps are utilized, provide complete calculations and documentation verifying the need for fire pumps.

6.4.6.3. Wastewater

6.4.6.3.1. Design Criteria

Design and construct sewage system in accordance with applicable criteria. Provide a system which will last a minimum of 50 years in service without major repairs or operating expense. Field verify the sewer system capacity and invert elevations to ensure that it is adequate for the flows generated by the new facilities. No interruption of service shall be allowed on the existing sewer line. Coordinate the sequencing of construction as it affects the existing sewer line with the Contracting Officer. Exterior building sanitary sewer service lines shall be 6 inch minimum diameter. The minimum pipe size between manholes shall be 8 inches. Calculate all design slopes using the Manning formula. Provide all calculations.

6.4.6.3.2. Manholes

Manholes are required at all changes of direction, slope, and size. Space manholes not more than 400 feet apart. Locate manholes at intersections of streets when possible. Avoid placing manholes where the tops will be submerged or subject to surface water inflow. Where the invert of the inlet pipe would be more than 1.5 feet above the manhole floor provide a drop connection. Provide all calculations. Provide a ladder in manholes 6 feet deep or greater.

6.4.6.4. Gas Distribution

6.4.6.4.1. Design, install, and test in accordance with:

(a) National Fuel Gas Code 2006 as applicable.

(b) International Code Council International Fuel Gas Code 2006 exterior to the building limits of construction shall be by the site contractor only.

6.4.6.4.2. Gas Distribution System

Install all new gas lines exterior to the building structure with medium density polyethylene (MDPE), yellow or orange color. Valve and cap service lines at the limits of construction as equired.

(1) Bury natural gas lines to a depth of thirty-six (36) inches in new and existing open areas and under new and existing parking lots; forty-eight (48) inches under new and existing paved or dirt roads and new and existing drainage ditches in the limits of construction by the building Contractor.

(2) Provide meter and pressure regulator assembly (reduce from 50 psig to 1 psig) exterior of building, outside mechanical room, prior to entrance.

6.4.6.4.3. Natural Gas Meters for Buildings Only

Building Meter/Regulator Assembly: Install a shutoff valve, anodeless riser, meter set assembly, and service regulator set assembly on the service line outside each building, eighteen (18) inches above the ground on the building gas service riser. Install an insulating joint on the inlet side of the meter set assembly and service regulator to prevent flow of electrical current. Provide a 3/8 inch tapped fitting equipped with a plug on both sides of the service regulator, downstream of the gas shutoff valve, for installation of pressure gages for adjusting the regulator. Terminate all service regulator vents and relief vents in the outside air in rain and insect resistant fittings. Locate the open end of the vent where gas can escape freely into the atmosphere, away from any openings into the building and above areas subject to flooding. Provide meters that have a pulse generator with each pulse representing an adjustable volume of gas. The meter shall be capable of operating up to speeds of five hundred (500) pulses per minute with no false pulses. Pulse generators shall provide the maximum number of pulses up to five hundred (500) per minute that is obtainable from the manufacturer. Connect meters to the Post wide Utility Control System (UCS). Include a seismic shutoff valve at the gas service entrance to each building.

6.4.6.4.4. Natural Gas Calorific Value

The calorific value of the natural gas supplied to Fort Carson by Colorado Springs Utilities is 805 BTU/ft3. Use the aforementioned value in any applicable calculations.

6.4.6.5. Utility Installation

Avoid running utilities underneath buildings, streets, and parking lots. In cases where it is necessary for the utilities to cross existing streets, install the lines by boring and jacking methods. No open trenching will be allowed through existing streets unless written permission is obtained and approved by the Contracting Officer. Case wet utilities (including water, sanitary sewer, storm sewer, industrial waste, gas) crossing under roads or tank trails in steel pipe or approved equal and vented or grouted as necessary.

6.4.6.5.1. Trenches

Jacking and boring is required when an underground utility line crosses any roadway. Place sewer and water lines, mains or laterals in separate trenches. The separate trenches shall maintain a minimum horizontal separation of 10 feet and the bottom of the water line shall be at least 1.5 feet above the top of the sewer. Sewers crossing above potable water lines shall maintain a vertical separation of 1.5 feet and must be constructed of suitable pressure pipe or filly encased in concrete for a distance of 10 feet on each side of the crossing. Excavate the trench as recommended by the manufacturer of the pipe to be installed. Bedding and initial backfill material shall consist of select granular material. Select granular material shall consist of materials classified as GW, SW, GW-SW or SW-SM by ASTM D 2487. Select granular material shall have 100 percent by weight passing the 1-inch sieve size and not more than 15 percent by weight passing the No. 200 sieve. Do not use material referred to locally as "Squeegee" or "Pea Gravel". Where no manufacturer's installation manual is available, excavate trench walls to a stable angle of repose as required to properly complete the work. Trench excavations shall adhere to requirements prescribed in EM 385-1-1, Safety and Health Requirements Manual. Give special attention to slopes which may be adversely affected by weather or moisture content.

6.4.6.5.2. Tracer Wire and Utility Warning Tape:

Tracer wire leads shall be brought up, identified, and protected by test stations of the flush-curb-box type and shall be the standard product of a recognized manufacturer (HANDLEY or equal). Test stations shall have a cast iron lid and be mounted in 18 inches of concrete. When test station structures and lids area located in paved areas provide products that are H-20 rated. Where possible, combine the Cathodic Test Station, Valve Box, and Tracer Wire Test Stations in the same concrete pad. Do not place test stations further that 400-ft apart. Coil 18-inches of extra wire into the test stations for maintenance. See standard detail C1-29a Fort Carson UTILITY TRACER WIRE INSTALLATION DETAILS.

Apply the following items to tracer wires and utility warning tape:

Tracer Wire:

Gas lines; #6 AWG type TW, RHW, RHW-2, THHW, THW, XHHW-2 or HMWPE (wet locations) stranded or solid copper, colored yellow, installed 6" above the pipe.

All other utilities; #12 AWG type TW, RHW, RHW-2, THHW, THW, XHHW-2 or HMWPE (wet locations) solid copper installed along top surface of the utility, wire color to match warning tape color, placed on top of the utility. Tracer wire should be secured to the utility pipe every 3 feet with duct tape (except gas) to hold it in place during backfilling.

Protect underground utility tracer wires with a 1 lb anode for every 400-feet of wire.

Wire / Warning Tape Color	Utility
Red;	Electric
Yellow;	Gas, Oil, Dangerous Materials
Orange;	Telephone & Other Communications
Blue or Purple;	Water Systems
Green;	Sewer Systems

Utility Warning Tape;

All underground utilities shall have a 3 to 6-inch wide, non-detectable warning tape, buried 12 to 18-inches below the surface of the ground. Color and marking to match “Warning Tape Color Codes”. Warning tape shall have the utility being identified written in discernable, non-degrading letters spaced in increments of not more than 3 feet.

6.4.7. Cut and Fill

Cut and Fill requirements include the following:

6.4.7.1. General

Provide positive drainage for all areas and utilize existing drainage ways to the extent possible. It is desirable to direct drainage away from buildings to curb and gutter or road ditches. Avoid swales between buildings and parking areas, if possible. Grade parking areas such that storm water is directed off to the sides, with curbs and gutters to control drainage, and not down the center of the parking area, where possible. Balance earthwork, cut and fill, to the extent possible without compromising the design. Keep the number of existing trees to be removed to a minimum. Do not grade within drip lines of existing trees to be preserved. Provide final grading plans.

6.4.7.2. Adjustment of Existing Structures

Adjust all manholes, valve boxes, or inlets of any nature within the project that do not conform to the new finish grade in either surfaced or unsurfaced areas to the new finish grade. Where inlets, manholes, or valve boxes fall within a surfaced or unpaved roadway or parking, remove and replace the existing frame and cover with a heavy-duty frame and cover. Adjust the structure as needed to fit the new conditions. Provide structures that are of a type suitable for the intended use.

6.4.7.3. Sidewalks

Concrete walks shall have a transverse grade of 2 percent. Maximum longitudinal walk grade shall be 5 percent. Walks designed to provide a handicapped accessible route shall conform to 28 CFR Part 36 ADA Standards for Accessible Design. Give special attention to sidewalks that are on the north (shaded) side of buildings. Design these walks to ensure a freeze/thaw cycle does not result in the formation of ice on the walk. Ice on walks should be a safety consideration for all areas. Double purpose walks are a combination of a straight curb and a concrete walk. Limit their use to areas where the drainage flows away from the curb line or gutter.

6.4.7.4. Stairs

Avoid the use of stairs in sidewalks whenever possible. When stairs are unavoidable, provide at least three risers and handrails. All steps within a stair shall have a uniform tread width and riser height. Risers shall have a height of 4.5 to 6 inches and treads shall have a width of 12 to 17 inches. Treads should slope 2 percent for positive drainage. Keep the height between landings to a maximum of 5 feet to allow a view of the next higher landing whenever possible. The height between landings shall not exceed 12 feet. Landings shall be at least 4 feet long.

6.4.7.5. Transverse Parking Area Grades

(a) Desirable minimum of 2 percent.

(b) Absolute minimum of 1.5 percent for flexible pavement and 1 percent for rigid pavement.

6.4.7.6. Longitudinal Parking Area Grades

Maximum of 4 percent.

6.4.7.7. Road and Street Longitudinal Grades

Desirable maximum grade of 7 percent and absolute maximum grade of 10 percent (absolute maximum grade is subject to government approval.

6.4.7.8. Gutter Grades

(a) Desirable minimum of 0.8 percent.

(b) Absolute minimum of 0.5 percent.

6.4.7.9. Building Floor Elevation

Set building finished floor elevation to ensure that the required minimum and maximum grades are met. Do not construct buildings within a 100-year floodway. Construct first floor of new buildings a minimum of 1 foot above the 100-year flood plain elevation.

6.4.7.10. Grades Away From Building

(a) Minimum of 5 percent for 10 feet.

(b) Maximum of 10 percent for 10 feet.

6.4.7.11. Overlot Grades

(a) Minimum 1 percent for cohesionless sandy soils.

(b) Minimum 2 percent for cohesive soils or turfed areas.

(c) Sideslopes for ditches, roads, and other turfed areas shall be no steeper than 1V on 3H.

6.4.7.12. Ditches

Grade ditches at non-erodible slopes or line the ditch with an appropriate material to prevent erosion. Use a design storm with a return period of at least 2 years to determine erodibility of ditches and swales. The depth of ditches along pavement shoulders shall be such that the water surface from the 10 year design storm is below pavement subbase and base courses which daylight through the adjacent shoulder.

6.4.8. Borrow Material

Obtain borrow materials from the areas outside government property. Borrow material shall be selected to meet the requirements and conditions of the particular fill or embankment for which it is to be used. Material required for fill or embankment in excess of that produced by excavation within the grading limits shall be obtained from approved private sources outside the limits of Government property. The Contractor shall obtain from the owners the right to procure material, pay royalties and other charges involved, and bear the expense of developing the sources, including rights-of-way for hauling. The source of borrow material shall be submitted Unless specifically provided, no borrow shall be obtained within the limits of the project site without prior written approval. Necessary clearing, grubbing, and satisfactory drainage of borrow pits and the disposal of debris thereon shall be considered related operations to the borrow excavation.

Dispose of surplus excavated material not required for fill outside the government's property. Soil disposed of outside the limits of Government property shall be disposed of in accordance with federal, state, and local laws.

6.4.9. Haul Routes and Staging Areas

The Contractor's access and haul routes to the project location shall be as shown on the RFP drawings in Appendix J – Drawings. Locate the Contractor’s employee parking areas near the staging areas. Coordinate with Fort Carson Security if access to the site is modified based on FPCON level at the installation. All traffic control plans for work zones, site entries, and haul routes shall be submitted for approval prior to the beginning of construction. Traffic signage shall be in accordance with Colorado DOT and MUTCD standards.

6.4.10. Clearing and Grubbing:

No additional requirements.

6.4.11. Landscaping:

(a) General

Provide the final Landscape Plan as part of the design package. Landscape improvements shall comply with UFC 4-010-01, and as described below. Design the Landscape plan to visually enhance the new facility and outdoor amenities with color, form and texture, while screening unsightly elements and visually framing views to the new facility and that conforms to the Concept Landscape Plan, if provided, in the RFP. Provide landscaping that is concentrated in various sized, "clustered" group arrangements in mulched beds with metal edging, rather than individually planted trees or shrubs in lawn areas. Trees, shrubs, and ground covers shown on the plan are indicative of areas to be landscaped and should be considered minimum requirements. Plantings shall consist of low maintenance, low water use plants installed in planting beds. Individually planted trees in lawn areas are not permitted. Provide a plant irrigation system to all plants and plant beds. Due to extreme growing conditions for plant establishment, an immediate visual impact by landscaping is required. Provide evergreen and flowering trees in clusters. Shade trees in clusters should be no more than 25 feet apart. Provide shrub and ornamental grasses no more than 2-1/2 feet to 4 feet on center depending upon the plant selection. The use of earth berms to accent the site perimeter, to provide visual relief to flatter sites, and to help screen unsightly features is encouraged. The tops should be slightly concave to help capture rain water, but not be more than 6 inches deep. Protect existing trees/planting to remain as indicated on the RFP drawings. Landscaping shall provide shading for walkways, parking lots, patio areas, framing of the building and enhancements to the front entry. Provide as a minimum, the amount of landscaping as shown on the plans.

TYPE:

See Plan List, Appendix - I, for allowable plant materials.

QUANTITY & SIZE:

Evergreen trees: 6' tall minimum. The designer is encouraged to stagger heights of evergreen trees, when provided within each individual bed, to create a visual variety. Large deciduous trees; 2 1/2-inch caliper; small deciduous trees: 1-1/2-inch caliper; Shrubs: 5 gallon containers (large shrubs) and 3 gallon containers (medium & small shrubs and ornamental grasses); perennials: 1 quart containers; and ground covers: 3-inch flats.

Provide landscaping consisting of balled and burlapped trees and container-grown shrubs, ornamental grasses, and ground cover. Provide plant materials from sources within the Colorado Springs area to assure climate adaptability. Coordinate with local nurseries when developing the planting plan to ensure that chosen plants are readily available, and are top performers, in the project area. Top dress all planting beds with a 3 inch to 4 inch layer of rock mulch. Extend all planting beds a minimum of 30 inches beyond the tips of tree branches. Plant beds not edged by pavements shall be edged with commercial-quality black metal edging. Prepare all planting beds and areas indicated for mulch surfacing with high-quality weed barrier fabric installed per manufacturer's instructions.

(b) Mulching

Provide rock mulch at locations according to the drawings and as a top dressing to all planting beds. Wood mulches are not permitted. Prepare all rock mulch beds and areas indicated for rock surfacing on the drawings with high-quality weed barrier fabric installed per manufacturer's instructions. Rock mulch shall be a minimum of 4 inch thick, and consist of Colorado Red 1-1/2-inch crushed dolmitic limestone.

Areas along the perimeter of the building that do not have sidewalks or paving shall have a 3 foot wide rock mulch bed with metal edging between the building and the grass.

(c) Boulders

A limited use of boulders of a variety of sizes is encouraged in primary landscaped areas to provide visual "variety". The color and type selected must complement the rock mulch selected, and shall conform to ATFP criteria.

6.4.12. Turf:

(a) Soil Preparation

As soon after the site has been stripped of topsoil and vegetation and rough grading has been completed reduce and eliminate weed growth with mowing and herbicides. Do not allow weeds to grow more than 6 inches tall in any areas. Seed rough graded areas with oats at the rate of 50 pounds per acre to reduce soil erosion and reduce weed growth. Fine grade and seed all areas as soon as possible to reduce soil erosion and reduce weed growth.

Prior to seeding or sodding, scarify all surface soils to a minimum depth of 12 or more inches and break up soils to a fine, workable texture suitable for seeding and sodding. Remove rocks larger than 3/4" diameter for sodded areas and seed mix areas “A”, “C”, “D”, and “E”. Remove rocks larger than 2” for seed mix “B” areas. Install topsoil to a depth of 2 inches. Topsoil shall be existing topsoil stripped from the site prior to construction or imported from off site and be weed free and without visible plant remains, roots, stalks and grass. Areas within the limits of seeding for mixtures “A”, “C”, “D”, and “E” and sodding shall have 4 cubic yards per 1,000 square feet of well composted organic matter thoroughly worked into the top 8 inches of soil with a rototiller.

After soils have been amended and topsoiled, fine grade all areas to a smooth even surface with no low spots to allow water to puddle. Except for dormant seeded areas, allow seeded and sodded areas to remain barren with no activity for 30 days to allow emergent weeds to grow and then be sprayed with Roundup, or equal herbicide, essentially killing all weeds and surface growth. Two weeks after treating the area with herbicide dead weeds shall be removed and the area final graded, seeded, fertilized and mulched. Soil preparation shall occur before designated times allowed for seeding. Prepared seed or sod bed areas shall be approved by the Contracting Officer prior to seeding or sodding.

(b) Seeding and Sodding

Sod and seed mixtures “C” and “D” are considered high maintenance grasses. Limit high maintenance type grass areas to be sodded or seeded with grass mixtures “C” and “D” as they will require a permanent irrigation system. Areas with irrigation systems are on designated high value facilities where necessary for the appearance of the facility and located between the building and the parking areas and other designated areas including playgrounds and athletic fields where irrigated high maintenance grasses are a life safety consideration. Seed all other disturbed areas not otherwise surfaced with a native grass of drought tolerant species described in more detail below.

(c) Grass Seeding

TYPE:

See Plant List, Appendix - I, for allowable grass seeds and mixtures. No other mixes will be allowed. Do not use nurse crop or annual grass seeds for erosion control (unless specified) or seeds other than those specified for seeding. All seed shall be bagged and labeled with seed tags on site and available for inspection prior to use.

Reseed areas that have not been seeded as specified with allowable seeds and mixtures as required.

Mix “A” low growing native grass seed is intended for areas immediately adjacent to the building and between parking areas and building entrances.

Mix “B” medium height native grass seed is intended for outlying and industrial areas requiring little or no maintenance. Mix “B” seeding is not appropriate for areas adjacent to walkways or pedestrian routes near buildings.

Mix “C” low maintenance grass seed is intended for baseball and athletic fields and other areas around buildings that are allowed to be irrigated. Seed mix “C” may also be used as a specified mixture for sod areas.

Mix “D” high maintenance grass seed is intended for special use areas where a well kept lawn for special presentation areas and appearance are necessary. Seed mix “D” may also be used as a specified mixture for sod areas.

Mix “E” low growing native grass seed is intended for areas adjacent to buildings but not in areas having an important visual impact and also on slopes equal to or steeper than 4:1.

(d) Seeding Dates

Seed Mix “A” and “E” Seeding shall occur in the Spring between May 15 and June 30 to eliminate early weed development prior to seeding and give the warm season grasses a competitive advantage over weeds. No other seeding periods will be permitted. Cover seed mix area “A” soils that have been graded and exposed to erosion for more than 30 days with hydromulch with tackifier at the rate of 1,500 pounds per acre.

Seed Mix “B” Seeding shall occur between May 15 and September 1. Dormant seeding shall occur between October 15 and February 28. No seeding shall occur outside of these dates. Protect seed mix area “B” soils that have been graded and are exposed to erosion with a cover crop of oats seeded at the rate of 50 pounds per acre no later than August 15 to allow time for adequate cover crop growth.

Seed Mix “C” and “D”. Seeding shall occur between April 1 and August 15. Seeding of these grasses can begin sooner than warm season grasses because these grasses will germinate under cooler conditions. Dormant seeding of these grasses is not permitted. Soil for these grasses must be closely monitored to be kept moist if seeded during the summer. No seeding shall occur outside of these dates. Cover soils for these seed mixes that are graded and exposed to erosion for more than 30 days with hydromulch and tackifier at the rate of 1,500 pounds per acre.

(e) Seeding Methods

(1) Slopes less than 3:1 - Seed mixtures shall be seeded with mechanical equipment. All areas seeded with mix “A”, “C”, “D” and “E” shall use mechanical drill or drop seeders approved by the Contracting Officer. Seed mixture “B” shall be drill seeded using a rangeland or grass drill with a small seed/legume box and an agitator box for fluffy or bulky seed. Seed mix “B” seed rows shall be spaced 6 inches apart, and planted 0.5 inches deep. The drill shall have double disk furrow openers with depth bands and packer wheels. Seeding shall be accomplished by following the contour of the slope. The drill shall be calibrated each day or whenever changing seed mixes to ensure even seed distribution. Broadcast seeders may be used in small areas not accessible to the above methods.

(2) Slopes greater than or equal to 3:1 and areas less than 0.5 acre - Seed shall be broadcast by hand, small mechanical spreader, or hydraulic equipment. Broadcast seeded areas shall be raked or harrowed to incorporate the seed into the soil at a depth not exceeding 0.50 inches. Seed shall not be mixed in a tank with hydro-mulch and broadcast. A bio-degradable erosion control blanket is required for slopes 3:1 or greater.

(3) Seeding shall occur at the rate specified when using drop type seeders for seed mixes “A”, “C”, “D”, and “E” and drill seeders for mix “B”. Double the specified seeding rate when broadcast seeding is necessary.

(4) After seeding and fertilizing lightly roll the seed bed and compact the soil to obtain good seed to soil contact. After rolling the soil shall compress approximately 0.5 inches when walked upon.

(f) Fertilizing

Fertilize all seeded and sodded areas, except seed mixture “B” areas, at a rate to supply one pound of fertilizer per 1,000 square feet. Fertilizer should be in the ratio of 3-1-2 with at least 35% slow release fertilizer. Fertilize non native grasses and sodded areas at least one more time during the establishment period with a 20-10-10 fertilizer at the above rate. Seed mix “A” and “E” shall be fertilized only once at time of seeding.

(g) Mulching

Use weed-free native hay, weed-free straw, virgin wood fiber or cotton/wood hydro-mulch or erosion control blankets to mulch seeded areas and promote germination and seedling establishment. Seed mixtures “A”, “C”, “D” and “E” shall have hydro-mulch with tackifier applied at the rate of 2000 pounds/acre on slopes less than 3:1 and erosion control blankets on slopes 3:1 or greater. Seed mixture “B” shall have hydro mulch or native hay or straw as a mulch and erosion control blankets on slopes 3:1 or greater. Crimp native hay or straw into the soil to a depth of 3-4 inches. Straw or hay mulch shall protrude above the ground 3-4 inches. Apply hydro-mulch using the recommended rate of an organic tackifier. Use erosion control blankets to protect the newly seeded soil from erosion on slopes greater than 3:1 or along drainage areas and drainage swales.

(h) Weed Control

If weed competition becomes abundant (approximately 10% or more of the stand) on the seeded areas use an appropriate herbicide for the type of grass seeded to remove the weeds.

(i)Mowing

Mow all seeded and mulched areas the during the establishment period. Mow sodded areas and areas seeded with mixtures “C” and “D” to a height of 2-1/2 inches when the height of the grass become 3-1/2 inches. Mow all low growing warm season grasses seeded areas during the establishment period to a height of 2-1/2 inches whenever

the grass or weeds reach a height of 4 to 5 inches. Mow seed mix “B” areas to a height of 6” whenever the height of the grass or weeds exceed 10 inches.

(j) Reseeding

If a partial or total seeding failure is apparent during or after the first growing season, reseed unvegetated areas in the same manner described above. Use appropriate site preparation practices used to create a suitable seedbed for planting, but any established native vegetation shall be undisturbed. Areas that erode and lose seed before establishment can occur shall be immediately reseeded during the next suitable planting period.

(k) Sod

Provide sod that is state-certified as classified by applicable state laws. Provide sod that is locally grown and is comprised of a mixture of improved varieties of turf-type tall fescues or bluegrass depending on the application. Sod shall be required if damaged or removed in areas where an irrigation system exists. If provided as replacement for areas disturbed by the contractor's operations, match the sod type as closely as possible to the existing variety. All sod is required to be supported by sprinkler systems. Provide sod that is free of thatch, diseases, nematodes, soil-borne insects, weeds or undesirable plants, stones larger than 3/4 inches in diameter, woody plant roots and other material detrimental to a healthy stand of grass. Reject dry moldy, yellow, irregularly shaped, torn or uneven end sod pieces. Machine cut sod to a uniform thickness of 1 inch within a tolerance of 0.25 inches, excluding top growth and thatch. Measurement for thickness shall exclude top growth and thatch. Use sod anchors for sloped areas as recommended by the sod supplier. Water the sod with the lawn irrigation sprinkler system for a period of 90 days after installation of the sod. Water sod with 1/2 inch water daily for the first three weeks, and then 2 inches per week for the remainder of the 90-day period. If sod is provided as replacement for areas disturbed by the Contractor's operations, assure that the existing irrigation system is shut-off in the affected operations area, but still functions properly in adjacent areas. When operations are complete and replacement sod is installed, reconnect the existing system to assure watering of newly sodded areas as specified above.

(l) Grass Establishment

Establish and maintain a healthy stand of grass for a minimum period of 90 days for sod and seed mix “B” areas. For seed mixes “A”, “C”, “D” and “E”, the minimum establishment period is one year which includes irrigating, mowing to the required heights, fertilizing approximately every 3 months, controlling weeds and crabgrass growth or until all work under this Contract has been completed and accepted, or whichever period is longer. Immediately reseed or repair areas that are damaged or eroded.

Irrigate required seed mixes so the ground remains consistently moist during the first three weeks of sprinkling. Beginning with the fourth week of sprinkling, water the areas every other day, delivering 1/2 inch of water to the ground for each water day, for the next 9 weeks. Weekly watering, delivering 1/2 inch of water to the ground is required for the remainder of the establishment period unless rainfall or snowfall during that time period has provided the required amounts. Constantly monitor water irrigation amounts and adjust as necessary to allow optimum growth of grass. Do not over-irrigate or allow irrigation water to cause erosion, ponding in grass, or excessive drainage down streets or walkways.

6.4.12.1 Irrigation System

(a) Irrigate sod areas, areas seeded with seed mixtures “A”, “C”, “D”, and “E” and landscape plantings with a permanent underground irrigation system. Seed mixtures “A” and “E” shall be watered for one year and then have the irrigation system disconnected. Provide separate control valves in identified boxes to allow easy disconnection of system for these mixes.

(b) Provide an irrigation system that consists of standard, commercially available components. Provide components that are products of manufacturers regularly engaged in the manufacture of such items and shall essentially duplicate those that have been in satisfactory operation for at least ten years. Specify industry standards for xeric region irrigation or water conservation irrigation systems. Irrigation system shall be metered prior to and separately from domestic water.

(c) Provide a sprinkler system that is completely underground, automatically operated by a central sprinkler controller, and capable of providing a precipitation rate of no less than 2 inches of water over all lawn areas per week over a maximum period of 56 hours during mainly the night time hours. Design the lawn sprinkler pop-up retractable heads to be adjustable for coverage and flow. Design tree, shrub, and ground cover bed irrigation to be on separate irrigation zones from grass areas. Provide a drip system for all tree, shrub, and ground cover beds. Install pipe casings under walks and pavements where irrigation lines cross. Do not allow lawn spray heads to spray over into tree and shrub beds, or on to walks, or pavements. Do not locate irrigation lines within 4 feet of the building to avoid saturating the ground near the building foundations in case an irrigation line breaks. The irrigation system shall operate through a backflow prevention device. Supply all necessary tools and equipment for complete installation. Provide weather shut-off components to regulate irrigating lawns and planting beds. Include sensors for wind, rain override of the controller.

(d) Provide head spacing per the manufacturer's recommendations. Prepare complete design drawings that include typical head spacing, system layout, pipe size, controller and backflow prevention device locations, and available and required pressures. Show components on the irrigation plans for review. Provide O&M manual with the above information for the project adjacent to the controller.

(e) Install a reduced pressure principle backflow preventer between the irrigation system and the potable water system. Install a strainer upstream of the backflow preventer with a screening element compatible with the emitters or sprinkler heads used and as recommended by the manufacturer. Provide a self-draining, freeze-proof, shutoff valve upstream of the backflow preventer and strainer. Do not use vacuum breakers in lieu of the reduced pressure principle backflow preventer. Equip the system with a quick coupler valve immediately outside the building for blowing water out of the system at the end of the season. Locate the air connection downstream of the backflow preventer and strainer.

(f) Equip high points in the irrigation system with air relief valves. Install shut off valves at various points along the water main serving the irrigations system so if it is necessary to repair a certain portion of the system the entire system will not be shut down.

(g) Sprinkler system supply piping from building to exterior system should be copper or galvanized steel through wall and where susceptible to freezing. PVC is acceptable if underground. Exposed pipe should have heat tape and insulation/aluminum covered.

6.4.12.2 Bio-Retention and Rain Gardens

The use of bio-retention areas and/or rain gardens are encouraged to obtain LEED points for water quality control and part of an overall storm management plan for the project.

The designer is encouraged to use these innovative features in association with traditional methods of storm water detention. Plants that tolerate these conditions are included in the Plant List in Appendix I.

6.5. ARCHITECTURE

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

6.5.2. **Design**

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

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

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

(b) Meets Milestones within Maximum Performance Duration.

(c) Achieves Full Scope indentified in this Solicitation

(d) Best Life-Cycle Cost Design

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

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

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

that it shall be designed and constructed to match adjacent buildings and consist of brick exterior walls and a combination of flat and sloped roofs. Roofs will consist of sloped green standing seam metal roofs and if flat roofs are provided shall consist of TPO type of roofing. Adjacent buildings include the Reserve Center locate across the street, the EN COF south and TEMF projects located near this Battalion facility. Refer to Appendixes F for similar building construction.

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

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

6.5.2.6. Additional architectural requirements:

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

(b) Design quality is achieved through the integration of buildings with the site, sustainability, selection of building systems for low-cost maintenance and operation, and an overall balance of aesthetics and functionality. Innovative, creative, or cost-saving proposals, which meet or exceed these requirements are encouraged and will be considered more favorably.

(c) Corridors. With the exception of fire sprinkler heads, no piping, conduit or ductwork shall be exposed in corridors.

(d) Mechanical, Electrical and Communications Rooms. Access to Mechanical, Electrical and Communications spaces shall be limited to authorized personnel through lockable doors. Locate exterior Mechanical, Electrical, Communications Equipment, Air intake and openings in exterior walls to comply with force protection standards.

(e) As a minimum provide Moisture Resistant Gypsum Board (MR) on walls of all Toilet Rooms.

(f) Pre-decorated gypsum board panels and trim system or similar type products and assemblies are not permitted.

(g) The facilities shall have a non-combustible roof covering that meets or exceeds Class 4 impact resistance rating when tested in accordance with UL 22 18.1. Provide permanently attached snow and ice guards above entrances, pedestrian walkways, play areas and hardstand surfaces, where due to the roof layout, there is the potential for moisture runoff (snow, water or ice) at roof edges.

(h) For roof coverings with standing seam metal, provide the material with 22 gauge minimum steel panels that are textured, ribbed, or striated to minimize possibility of oil canning.

(i) If operable windows are provided, install insect screens.

(j) Exterior guard and stair railings shall have a non painted durable weather resistant finish.

(k) Do not expose Insulation on interior wall surfaces accessible to building occupants. As a minimum, provide wall surfaces from finished floor to a height of 8’-0” or 4” above finished ceilings as applicable, with gypsum board or similar products that are durable and easy to maintain. Note that this also applies to wall surfaces of mezzanines. Where pipe insulation is exposed in maintenance areas, use insulation jackets of durable, protective fabric, in accordance with the applicable criteria.

(l) Where gypsum wall board is provided, except as otherwise indicated, as a minimum use Impact Resistant Gypsum Board from T.O.S. to 8’ A.F.F. along walls of Corridors, Stairs, Conference Rooms, Training Rooms, Break Rooms, Storage Rooms, Supply Rooms, Vending Rooms Recycle Rooms and similar type spaces.

(m) Stairs as applicable. Provide fully enclosed stairs as required to allow circulation to upper floors of the building, and to comply with applicable code egress requirements and to facilitate the movement of people and equipment. Except for egress only, open stairs, risers and metal grating treads are prohibited.

6.5.3. Programmable Electronic Key Card Access Systems:

6.5.3.1. Hardware Requirements:

(a) Provide Keyless Access Entry Control for all Facility doors as indicated in paragraph 6.5.3.3. Except for exit only doors, provide Keyed Access Entry Control for all other doors, as indicated in paragraph 6.5.3.2.

(b) Provide a keyed lockset for Janitor Closets.

(c) Use lever handles per ADA.

(d) Provide a Knox Box, series 3200, as manufactured by Knox Company Phoenix, Arizona, at the main entrance to each.

Where required, provide infrastructure for a hard-wired keyless access entry control system, as manufactured by Lenel Systems International Inc. 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 Contracting Office 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. Location of keyless locks shall comply with the ADA requirements.

This shall include Main Exterior Entry Doors into the facility, Exterior Doors providing access into the facility from a parking lot, one door into the Classroom module, Main door into each Section, one door into each Conference room unless access to the conference room is by direct access through an office suite, Interior and Exterior Doors into the Mailroom if both are provided, and doors into SIPRNET and Telecommunication Equipment Rooms.

(e) For BNHQ Toilets and Shower Rooms, provide a dead bolt lock on the main entry door(s) into the space, so that the entire space can be closed off for maintenance or other access control purposes.

6.5.3.2. Keyless Access Entry Control System

(a) Where required, provide infrastructure for a hard-wired keyless access entry control system, as manufactured by Lenel Systems International Inc. 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 Contracting Office 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.

(b) For BNHQ's, this shall include Main Exterior Entry Doors into the facility, Exterior Doors providing access into the facility from a parking lot, one door into the Classroom module, Main door into each Section, one door into each Conference room unless access to the conference room is by direct access through an office suite, Interior and Exterior Doors into the Mailroom if both are provided, and doors into SIPRNET and Telecommunication Equipment Rooms.

(c) The user provided keyless access entry control system will utilize proximity sensors and electric strike plates. Under this contract the system will require infrastructure provisions for the installation of low voltage and communication lines. Communication lines will be terminated at a secure server within the Telecommunication Equipment Room. Ft. Carson's entry control system specifications will be provide by the COR, which will include voltage and data line specifications. In addition to the keyless access control system requirements, in conformance with paragraph 6.5.3.3, hardware for keyed access control shall also be provided on these doors.

6.5.4. INTERIOR DESIGN

6.5.4.1 Structural Interior Design:

(a) Provide a sign on the exterior side of the mechanical room door in accordance with the requirements specified in Appendix H.

(b) In reference to 01 10 00 paragraph 5.3.5.6, also provide window treatment at interior windows where privacy is required, such as an office. In addition, window treatment to be horizontal blinds designed for use in commercial type buildings.

(c) If provided, wood to be a medium range color.

(d) If incorporated into the building color theme, including Furniture, Fixtures and Equipment (FF&E), limit blue to minor accents. Use of blue requires DPW and Corps of Engineers approval prior to submitting color boards for review.

(e) Variation of color and/or floor patterns is desired to visually shorten long corridors and add interest.

(f) Coordinate type of luster for VCT floor polish with the Officer Representative (COR).

(g) Incorporate the following in addition to color guidance provided in Section 01 10 00, paragraph 5.3.5.3:

- provide finish color and pattern selections that help hide soiling. Examples of soiling include, but are not limited to:

* boot marks and tracked in dirt on floors

* marks and fingerprints on doors and door frames, systems furniture panels, overheads and tack boards

- do not specify dark color solid surface material, it shows scratches.

(h) Consider building maintenance, functionality and future flexibility when designing the building interior.

(i) It is preferred that porcelain tile and trim, when provided, be unglazed with color extending uniformly through the body of the tile.

(j) Carpet tile is preferred to broadloom carpet when carpet is provided. Provide carpet with patterned or bold multi-colored tweed for maximum soil-hiding properties. Bold tweed must contain a minimum of three distinctly different colors. Do not provide carpet borders or solid colors unless approved first by the Corps of Engineers Interior Designer prior to submitting color boards for review.

6.5.4.2. Additional Furniture Selection Requirements (refer to 01 33 16, Attach B, Para. 1.3 Furniture Selection):

(a) Notwithstanding provisions in other sections of the RFP that state the furniture procurement is not included in this contract, the Government reserves the right to change the method for procurement of and installation of furniture to Contractor Furnished/Contractor Installed (CF/CI). CF/CI furniture will require competitive open market procurement by the Contractor using the Furniture, Fixtures and Equipment (FF&E) package.

(b) Provide trash and recycle receptacles, unless otherwise noted.

(c) Do not include artwork or artificial plants in FF&E.

(d) Coordinate furniture with locations of SIPRNET, to include Protective Distribution System (PDS).

(e) Provide lockable desks and workstations, filing cabinets and storage. Key all locks within a one person office the same; key all one person offices within a building differently. If an office or open office area has more than one workstation, key all the workstations differently, but key all locks within an individual workstation the same.

(f) Refer to paragraph 3.4.2 Table 1: Room Size and Furnishings Chart for facility furniture requirements. Note that furniture selection requirements included in 01 33 16 Attach B, paragraph 1.3 and its subparts include general furniture requirements that are applicable to a variety of different facility types. For example, not all facility types require furniture systems.

(g) Variance to 01 33 16 Attach B, Paragraph 1.3 Furniture Selection, 1.1.3 Alternate Manufacturer List, do not include UNICOR as one of the alternates.

(h) Variance to 01 33 16 Attach B, Paragraph 1.3 Furniture Selection, keyboard trays are not required unless requested by the User.

(i) Recommend that casegood modesty panels at walls be of a height or be hinged to allow access to building wall electrical outlets and communication jacks.

(j) Provide LED task lighting where task lighting is required.

(k) Variance to 01 33 16 Attach B, Paragraph 1.3 Furniture Selection, do not provide mesh back chairs.

(l) Provide VTC conference room tables with power and communication capability.

(m) Variance to 01 33 16 Attach B, Paragraph 1.3 Furniture Selection, provide executive casegoods in command areas with plastic laminate finish, not wood with plastic laminate worksurface

(n) Provide residential type microwave and refrigerator in break rooms.

(o) Provide desk chairs with black frame and fabric.

(p) Provide conference room tables with grommets and wire management to access power and communication at the floor.

Interior building signage requirements:

In reference to 01 10 00 paragraph 5.3.5.5, provide interior signage that conforms to UFC 3-120-01 Air Force Sign Standards (applies to Army projects). Coordinate all signage requirements, including message content, room numbering, and placement with User and COR. Consider UNICOR System 2/90 signage as a good basis of design. Provide signage for all rooms, unless otherwise noted or directed by the Contracting Officer. Provide Alarm System and Restricted Area signs for Battalion HQ.

6.6. STRUCTURAL DESIGN

6.6.1. Minimum Design Wind Load Requirements

Determine wind loads in accordance with ASCE 7, and based upon the following parameters:

Design Wind Speed: 100 mph
Exposure Category: “C”.
Wind Load Importance Factor: See Table 6-1, in ASCE 7, based on the Occupancy Category.

6.6.2. Minimum Design Snow Load Requirements

Determine snow loads including flat and sloped roof snow loads; drift loads; sliding snow loads; and windward and leeward snow loads in accordance with ASCE 7, using a ground snow load of 20 psf. However, regardless of the snow load values determined in accordance with ASCE 7, and in accordance with local building codes, the flat roof snow load shall not be less than 30 psf, and the sloped roof snow load shall not be less than determined in accordance with ASCE 7, Section 7.4, using a flat roof snow load of 30 psf. To determine the snow load Importance Factor see Table 7-4, in ASCE 7, based on the Occupancy Category.

6.6.3. Minimum Roof Live Load

Provide for a minimum roof live load of 20 psf, reducible based on tributary area and slope in accordance with ASCE 7, in the design to account for construction and maintenance loads.

6.6.4. Minimum Design Seismic Load Requirements

Determine the seismic design loads in accordance with ASCE 7, and based upon the following parameters:

Site Classification: Based on Final Geotechnical Report
Mapped MCE Short Period Spectral Response Acceleration: Ss =21%
Mapped MCE 1 Second Period Spectral Response Acceleration: S1 = 6%
Seismic Design Category: Based on the Occupancy Category.

6.7. THERMAL PERFORMANCE

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

6.8. PLUMBING

6.8.1. General Plumbing Requirements

6.8.1.1. Mount equipment in mechanical rooms on four (4) inch thick reinforced concrete housekeeping pads that shall extend six (6) inches beyond the edges of the equipment.

6.8.1.2. Install backflow preventers for accessibility, complying with the requirements of the Colorado Department of Public Health and Environment (CDPHE), the International Building Code, and the International Plumbing Code. State licensed plumbers shall install and/or test backflow preventers and cross connection devices. Perform initial testing and certification of new backflow devices and submit for approval prior to domestic water usage. Do not provide bypass piping around backflow preventers.

6.8.1.3. Install trap seal primer valves in floor drains in the kitchen, laundry and public toilet facilities, where applicable to a facility type.

6.8.1.4. Unless otherwise specified, locate exterior (key-operated) freeze-proof wall hydrants with vacuum-breaker backflow-preventer on outside walls at 100 feet intervals. Provide a wall hydrant near all Mechanical Room exterior doors. Mount exterior wall hydrants thirty-six (36) inches above finished grade.

6.8.1.5. Falcon or Sloan manufactured cartridge type waterless urinals are required.

6.8.1.6. Water Meters. For domestic water supply to each building provide a water meter located inside the building. Meters shall have a pulse generator with each pulse representing an adjustable volume of water. The meter shall be capable of operating up to speeds of 500 pulses per minute with no false pulses. Pulse generators shall provide the maximum number of pulses up to five hundred (500) per minute that is obtainable from the manufacturer. Connect meters to the building control system. Provide isolation valves upstream and downstream of the meter with a building piping drain valve downstream of the meter.

6.8.1.7. Natural gas-fired domestic water heater or boiler used as a domestic water heater shall produce no greater than twenty (20) parts per million (ppm) nitrogen oxides NOx) in the flue gases, at 3% excess oxygen and a combustion air temperature of 68 degrees F.

6.8.1.8. Provide equipment suitable for use at the project altitude, which is approximately 6,000 feet above mean sea level (MSL).

6.8.1.9. Steel domestic water piping is not permitted.

6.8.1.10. Showers as applicable. When vinyl, resin or similar type shower pans are utilized, set in grout mortar bed. Fiberglass showers are not preferred at Ft. Carson.

6.9. SITE ELECTRICAL AND TELECOMMUNICATIONS SYSTEMS

6.9.1. Exterior Primary Electrical Distribution System (15kV)

The exterior primary electrical distribution system on Fort Carson is a 12,470Y/7200 volt, 3-phase, 4-wire, 60 hertz, and grounded neutral system. Provide the primary power feed to the facility transformer:

Power for the facility shall be provided from vault V0 xxx located on Weston and shown on sheet EU-01. The contractor shall install an S & C PMH-9 switch on top of the vault and run primary conductors from the switch to the facility transformer.

Run secondary power to the building through a meter that provides outputs to the base wide utility monitoring and control system (see below for electric meter values). For guidance on exterior systems compliant with Fort Carson standards the Contractor shall follow guidance in the FORT CARSON EXTERIOR ELECTRICAL DISTRIBUTION & INSTALLATION DESIGN GUIDE (dated 6-08).

6.9.1.1. Primary Cables

The primary cable shall be 15 kV rated, aluminum conductor cable. Insulation shall be 133 percent ethylene-propylene rubber (EPR) not less than 220 mils average thickness. Concentric neutral shall be bare copper wires spaced uniformly around the insulation screen. EPR cable insulation shall conform to the requirements of ICEA S-94-649 and AEIC CS8. Cable jacket shall be black polyethylene with red extruded stripe(s). The cable shall be suitable for wet or dry locations, in conduit, underground duct systems, and direct buried or aerial installations.

Cable shall be one of three standard sizes used on Fort Carson. The three sizes, number of strands (concentric neutral), size of neutral wire (No. X AWG), max outside diameter (in) are as follows:

350 kcmil, 37 1/3, 18 X 14, 1.52
4/0 AWG, 9 1/3, 2 X 14, 1.33
2 AWG, Full, 10 X 14, 1.09

Selection of cable size shall be: 350 kcmil for main distribution lines, 4/0 AWG for sub-loop feeders, and 2 AWG for radial building feeds. Phase conductors shall be color coded as follows:

Phase A-1 "RED", Phase B-2 "YELLOW", Phase C-3 "BLUE". After installation of the l5KV cable feeding transformers, all load break elbow are to be placed on insulated parking bushings attached to the transformer parking stand. The DPW operations and Maintenance contractor will check for operation and energize the transformer. (Insulated parking stand will be provided by DPW upon request.)

6.9.1.2. Underground Duct

Install primary cable in concrete encased Schedule 40 PVC conduit. Top of concrete shall be at least 18 inches below finished grade, except it shall be at least 24 inches below finished grade under roads and heavy vehicular traffic areas. Concrete cover shall be 3 inches over the duct. Install one spare duct in each primary power duct bank. Duct seal all spare conduits and around conductors and provide pull string in spare duct.

6.9.1.3. Pad Mount Transformers

Three phase transformers shall be internal loop feed type, dead-front, compartmentalized, internal Bay-O-Net oil-immersed in series with ELS-P current-limiting fused, and shall be equipped with 3 each, 300 amp two position gang operated load break type switch, internal tap changer, oil temperature gauge, liquid level gauge, pressure vacuum gauge, drain valve, surge arrestors (8.40 MCOV for solidly grounded neutral circuits). NEMA TP-1, Envirotemp FR3 fluid or equal. Transformer secondary shall be clockwise rotation.

Single phase transformers shall be loop feed, dead-front, internal bayonet fusing.

6.9.1.4. Primary system grounding

Primary electrical grounding shall be irreversible compression style crimps or Exothermic welded. Crimps shall be listed & rated for wire sized used, approved crimping tool with proper size dies.

6.9.1.5. Electrical vaults

Electrical vaults for up to 200 amp feeders shall be 4’x7’ bottomless vault with torsion assist lids, 4 point junctions, steps and safety handles. Electric vaults for 200 to 600 amp lines shall be 6’x12’x7’ with two round lids or one round and switch lid. All separable connectors must be accessible from above grade.

6.9.1.6. Protective Coordination Study

Protective devices proposed shall be based on recommendations of this study. The Government shall not be held responsible for any changes to equipment, device ratings, settings, or additional labor for installation of equipment or devices ordered and/or procured prior to approval of the study. Data consisting of manufacturer's time-current characteristic curves for individual protective devices, recommended settings of adjustable protective devices, and recommended ratings of non-adjustable protective devices shall be submitted.

6.9.1.7. Field Testing

The proposed test plan, prior to field tests, consisting of complete field test procedure including tests to be performed, test equipment required, and tolerance limits, including complete testing and verification of the ground fault protection equipment, where used. Performance test reports in booklet form showing all field tests performed to adjust each component and all field tests performed to prove compliance with the specified performance criteria, upon completion and testing of the installed system. Each test report shall indicate the final position of controls.

6.9.2. Exterior Secondary Electrical Distribution System (600V)

6.9.2.1. Service Entrance (duct, conductors, depth)

Install building service entrances underground, consisting of copper conductors in Schedule 80 PVC duct, with the top of duct 24" below finished grade. Run a spare duct to the service entrance.

6.9.3. Underground Lighting Circuits

Install exterior lighting circuits underground, consisting of copper conductors in PVC duct, minimum size 3/4", and with top of duct 24" below finished grade. For each ungrounded conductor, install inline fusing at the base of the pole.

6.9.4. Exterior Feeders and Branch Circuits

Install exterior feeder and branch circuits underground, consisting of copper conductors in Schedule 80 PVC duct, with the top of duct 24" below finished grade. Include an insulated equipment grounding conductor in all circuits.

6.9.5. Exterior Lighting System

Provide area lighting for all walkways, above all exit doors and area signage. Pole mounted fixtures shall be square or rectangular, shoebox type, and shall be cutoff type to limit light from spilling off-site. Lamps shall be high pressure sodium. Coordinate fixture types and lamp sizes to meet IESNA illumination criteria. Provide photocell and HOA control and power to all exterior fixtures. Provide a lighting design and construct a lighting layout to achieve the Sustainable Site LEED Credit 8 for Light Pollution Reduction. Provide LEED documentation that Credit 8 has been achieved.

6.9.5.1. Parking Lot Lighting

Provide hardstand lighting. Pole mount lighting on all sides. Make all connections. Hardstand lighting poles shall be square, non-tapered aluminum with a dark bronze anodized finish. All poles exceeding 30 feet in height shall have vibration dampers.

6.9.5.2. Walkway Lighting

Walkway lighting poles shall be square, non-tapered aluminum with a dark bronze anodized finish, 15 feet in height. Where poles are not appropriate, or where barriers are needed between pedestrian and vehicular traffic, lighting bollards may be used. Bollards shall be square, non-tapered aluminum with a dark bronze anodized finish, 42 inches in height.

6.9.5.3. Building Lighting

All building entrances shall be provided with wall mounted light fixtures above the door. Light fixtures shall be designed to illuminate the immediate area around the door, but also minimize light spillage. The area around the building is to be lit to a level of 5 footcandles.

6.9.5.4. Exterior Lighting Control

Provide a Hand-Off-Auto switch to control all exterior lights. Locate this switch in the main electrical room. Provide a single, north-facing, roof-mounted, photocell and connect to the “Auto” position of the HOA switch.

6.9.6. Underground Circuits

Provide parking and walkway lighting with underground branch circuits originating in the building served by the lights. Underground branch circuits shall be insulated copper conductors with an insulated grounding conductor in PVC conduit. Aluminum or direct buried conductors are not permitted. Ground all lighting poles at the base of the pole. Provide a 3/4" x 10' copper clad ground rod at each pole.

6.9.7. Cathodic Protection Systems

6.9.7.1. General

Cathodic protection for non-metallic underground utilities (i.e. water, sewer, industrial waste, gas, & storm drainage) that have metal fittings in contact with the earth shall consist of a sacrificial anode system. A “Corrosion Expert” shall design the sacrificial system. Such a person must be accredited or certified by the National Association of Corrosion Engineers (NACE) as a NACE Accredited Corrosion Specialist or a NACE certified Cathodic Protection

(CP) Specialist or be a registered professional engineer who has certification or licensing that includes education and experience in corrosion control of buried or submerged metallic piping and tank systems.

6.9.7.2. Cathodic Protection for Non-Metallic Underground Utilities

The sacrificial anode system shall consist of the following:

(a) Design and installation shall meet the requirements of National Association of Corrosion Engineers (NACE) standard RP0169 for metallic piping and metallic components and RP0285 for underground storage tanks. Provide proper protection by showing that one of the criteria in NACE TM0497 is met.

(b) Minimum 25 year life span for the cathodic protection system

(c) Pre-packaged magnesium anodes. Magnesium anode shall be high-potential.

(d) Install anodes at or below the depth of the metallic structure.

(e) Color coded wiring: Black or white for anodes; Red for metallic structure; Blue for reference cell; Yellow for foreign line crossing.

(f) Conductors shall be 12 AWG minimum and shall be rated for direct burial (wet locations) as defined by the latest edition of the National Electric Code (NEC). Conductors shall be solid wire copper.

(g) Continuity bonds between different metallic structures shall consist of two 8 AWG. Conductor shall be rated for use in direct bury wet environments per the NEC.

(h) Coating compound shall be cold-applied wax base material. Wax-tape primer and #1 wax-tape shall be used to cover bolts and exposed uncoated metal fittings. (Trenton Corporation, 313-426-3955, Wax-tape primer / #1 Wax-tape or approved equal).

(i) Test Stations:

1. Flush, curb-type that is H-20 rated.
2. Standard, off-the-shelf product. (Handley or equal).
3. Install in a concrete ring that is at least 4” thick and 12”-18” in diameter.
4. Lockable cover
5. Labeled “C.P. Test”
6. Test stations shall be located not more than 10 ft from the metallic structure.
7. Test station cover shall be color coded to match the type of structure as follows:
   a. Yellow - Gas, oil, dangerous materials.
   b. Blue - Water systems
   c. Green - Sewer systems
8. Test stations shall have two leads to the structure and one lead from the anode. Provide an appropriately rated shunt to tie the anode and one structure lead together. The second structure lead is a spare.

(j) Install a statistical/representative sample of Cathodic Protection Test Stations to provide continued maintenance data and represent all cathodic protection installed in that area. This means that not all of the metallic structures will have a test station, but instead will have the anode connected directly to the metallic structure. This item is specific to metallic fittings on a non-metallic pipeline.

(k) In situations where you have a cluster of fittings provide one statistical/representative reference test station for the below situations:

1. Tee with valves (1-2 or 3 valves)
2. Tee with valve and hydrant within 50-feet
3. Tee with valve to one service line
4. Mechanical joint and valve (same location)

6.9.7.3. Cathodic Protection for Metallic Underground Utilities

Design and construction of the sacrificial anode system shall comply with all the applicable items indicated for metallic fittings on a non-metallic line and the following additional items:

(a) Provide a foreign line crossing test station for metallic lines that cross another metallic line. Run two conductors to each structure. The Corrosion Expert shall verify through testing if the two structures need to be tied together and by what method.

(b) Anodes can be installed on a header in order to reduce the number of test stations.

6.9.7.4. Cathodic Protection for Metallic Underground Storage Tanks (UST)

Cathodic protection design and construction of the sacrificial anode system shall comply with all the applicable items indicated for metallic fittings on a non-metallic line and the following additional items:

(a) An UST that is a certified by the Steel Tank Institute (STI) is typically provided with an anode solidly attached to each end. This may be appropriate for small tanks. The Corrosion Expert will determine the number of anodes required. If more than two anodes are required, then place the additional anodes along the sides of the tank in pairs. Connect the additional anodes shall be connected through a test station to the UST in a method approved by STI.

(b) Provide all tanks with a test station for taking potential readings.

6.9.7.5. Cathodic Protection for Tracer Wire

Design and construction of the sacrificial anode system shall comply with all the applicable items indicated for metallic fittings on a non-metallic line and the following additional items:

(a) Protect underground utility tracer wires with a 1-lb anode for every 400-feet of wire (no CP test station is needed for this situation).

(b) Where possible combine the cathodic protection test station, utility locate tracer wire test station and valve box in the same concrete pad.

6.9.7.6. Installation Documentation.

The following items are common to all sacrificial anode systems, except for the tracer wire cathodic protection:

(a) Identify each test station with a unique alphanumeric number.

(b) Identify each test station with a GPS coordinate.

(c) Photographs shall be provided for each installation of a test station and shall show the following:

1. Location of the anode in reference to the fitting/structure. (Both items should be visible in the picture)
2. Reference number; (that can be related to an exact location on the drawings).
3. Date of installation.
4. Contract description.
5. Contract number.

(d) Conduct and document soil resistivity testing. Soil resistivity testing must be performed to help verify the assumptions made in the calculations. Provide information in the report on where the soil sample was obtained and provide in the report.

(e) Provide a test report with the readings for each location. This shall include the date, time, native, instant off and connected.

(f) Provide a scaled CADD drawing showing the test stations with its unique alphanumeric number, structure layout and route, location of anodes, GPS coordinates, and location of soil samples. Provide sufficient landmark information to easily find the items.

(g) Corrosion Expert shall provide training for the system installed.

6.9.8. Telecommunications Outside Plant

6.9.8.1. Exterior Primary Communications Distribution System

Provide 200 pair of copper and 24 strands of fiber optic cable from existing communications manhole MHO157 located near the facility and near Weston St. as shown on sheet EU 101.

Terminate copper cable to a wall mounted Building Entrance protector (BEP) with five pin fuse protector (FPP5-7.5V). Fusion splice FO cable in a rack mounted patch panel using ST connectors. Test each strand of FO cable.

6.9.8.2. Underground Duct

The Duct system shall consist of three-1 1/4" inner ducts. Use the 1 1/4" inner ducts for FO cable runs. Install permanent tracer wire in all new duct banks. After installation, test the tracer wire to verify continuity of the tracer wire system and submit a report indicating continuity. For more information see I3A Paragraph 3.8.4.6 and paragraph 3.6.10.4. Install duct bank in concrete encased schedule 40 PVC or 80 PVC conduits..

6.9.8.3. Maintenance holes

Terminate tracer wire so personnel entry into the maintenance hole is not required to locate the duct bank runs. Provide a ladder with each maintenance hole.

6.9.9. Electrical Metering

For facilities less than 30,000 sq ft. electric services are required to be metered. Install watt hour meter for each service. Services 200 amp single phase and less can be dial or digital S-base type meter base. Services 200 amps and larger, single or three-phase require digital LCD meter, transformer rated CT meters, factory programmed for 1 to 1 ratio with registers reading KWH and KW 15 minute demand. S-Base type meter, programmable and readable with optical probe using standard ANSI C12.19 protocol (DGCOM protocol preferred). Landis & Gyr AXS4 or equal.

Meter facilities 30,000 Sq ft and larger Electric services with smart meter and the following values reported to the base UCS (Utility control system) though the building Tridium JACE controller.

KWH
Current phase A-B-C-N, current unbalance, (coincidence).
Current Average phase A-B-C-N
Current Maximum, date & time, phase A-B-C-N
Voltage coincidence A-B-C
Voltage minimum maximum A-B-C date & time
Phasor angle voltage A-B-C
Phasor angle current A-B-C
Power factor 3 phase (coincidence)
Power factor 3 phase maximum date & time
Power
3 Phase real power (coincidence)
3 Phase reactive power (coincidence)
3 Phase apparent power (coincidence)
Demand 15 min intervals
3 Phase real power demand date & time
3 Phase reactive power demand date & time
3 Phase apparent power demand date & time

The meters shall also meet the following specifications:

Quantities Measured: Power (kilowatt), average demand over 15 minute intervals.
Energy (kilowatt-hours)

Measurement Configuration: For single phase application, 120 - 240V
For three phase application, 208 - 600V, 3 wire delta or 4 wire wye

Operating Temperatures: -20 degrees C to +60 degrees C. For exterior mounting, consider the local ambient temperature extremes and moisture proof enclosures.

Humidity Operating Range: 5% to 90% RH (non-condensing)

Accuracy: Revenue grade:
+ 0.2% at unity power factor
+ 0.5% at 0.5 power factor

Frequency: 60 Hz +I- 5%

Digital Output Only: ANSI/CEA-709.1 b protocol (LonTalk) output for communications using Standard Network Variable

Types (SNVTs) for measured values.

6.10. FACILITY ELECTRICAL AND TELECOMMUNICATIONS SYSTEMS

6.10.1. Interior Communications

6.10.1.1. Terminate incoming outside plant cables on protector modules, 110-type blocks, R399 Central Office blocks with fuses, with separate patch panels. Terminate the incoming fiber cable on a 19" 24-port single-mode fiber optic patch panel. Terminate the patch panel with ST connectors. Run the interior communications in cable trays for the major runs around the buildingSupply all the rack(s), patch panels, patch cables and fiber patch cords for the telecommunication rooms. Patch cords are color coded Orange – Data and Blue for Voice. Color all cables accordingly: White for data, Blue for voice and Red for SIPRNet (if applicable).

6.10.1.2. J hooks may only be used above suspended ceilings ceilings and no more than 25 foot from the conduit outlet above ceiling to the cable tray, Otherwise run the cable in conduit. Locate the cable TV equipment in the telecommunications room. All copper communications cable shall be Category 6. Electrical, mechanical, SIPRNet room (where applicable to the project) and telecommunications rooms shall have a single phone outlet located on the wall for phones that can be mounted on lugs. Wire all telephone voice & data jacks from jack locations on floor plan back to floor mounted voice and data racks in telecommunications room.

6.10.2. Interior Power

The electrical room shall contain the main service to the building and shall have an exterior entrance. Locate all panel boards in the electrical room or non public area. Do not install panel boards in hallways or general access areas. There shall be electrical room on each floor to serve the power needs of each respective floor.

6.10.3. Interior Lighting

Provide 50 foot-candles lighting level in mechanical, communications and electrical rooms.

6.10.4. Equipment Special Conditions

All electrical equipment shall be derated for an altitude of 5900 feet.

6.11. HEATING, VENTILATING, AND AIR CONDITIONING

6.11.1. Integrate the control system to the installation’s existing UMCS. The existing UMCS is Tridium.

6.11.1.1. The Fort Carson workstation operator, which runs Tridium Niagara Framework software, is release 2.301.515, and is located in building 1860.

6.11.1.2. As part of the HVAC DDC system, provide a JACE controller or approved equal, including the required Tritium Niagara Framework software, in the building to allow communication between the building DDC system and the Post Utility Control System (UCS).

(a) Locate JACE controller adjacent to the main building DDC equipment panel in the building mechanical room(s).

(b) Install generation of graphics within the JACE controller. Use existing media for communication between the building DDC system(s) and the post UCS. Provide a WebUi to each installed JACE panel.

6.11.1.3. Supply the DDC/UCS and coordinate with the Ft. Carson Post Operation Contractor. All HVAC functions and input/output points in the building DDC system(s) shall be capable of being monitored and/or controlled by the Ft. Carson Post UCS at the Ft. Carson operator workstation.

6.11.1.4. The Ft. Carson Post Operation's Contractor operating the existing UCS server/operator workstation will re-program the UCS operator server, under separate contract, during normal business hours to accommodate the integration of the new building(s) into the existing UCS.

Reprogramming will include, but not be limited to, software database programming, development of trend logs, alarm reporting, graphics generation, system calibration, and end-to-end testing of the DDC integration into the UCS.

6.11.1.5. Provide full support to the post Operations Contractor, providing all necessary information to complete the reprogramming of the UCS server and testing of the DDC integration into the UCS, prior to the contract final completion date.

6.11.1.6. If emergency generator(s) and/or UPS are included in the contract, provide the following information, as applicable to the post Operations Contractor, including (but not limited to): equipment data sheets, written control sequences, IF files, and input/output points list.

(a) Generator

(1) Status On/Off

(2) Load KW, KVa, Kvars

(3) Amps A-B-C

(4) Output Voltage

(5) Fuel Level

(6) Battery voltage

(7) Alarms

(b) Uninterruptable Power Supply (UPS)

(1) Contact #1 Status

(2) Contact #2 Status

(3) Battery Test

(4) AC power

(5) UPS Switched

(6) UPS notice

(7) Load, amps, voltage, True Power, apparent Power Bypass Status Net Time Used

6.11.2. General Requirements.The following requirements apply to all heating and cooling systems in the building:

6.11.2.1. Provide refrigeration equipment with an ozone depletion factor of 0.0. Provide manufacturer's optional hail guard for exposed coils on chiller. Provide chillers with manufacturer's standard debris guards enclosing the base of the chiller. For systems utilizing outdoor chillers or cooling coils exposed to outside air, the chilled water shall be a mixture of 35% propylene glycol and 65% distilled or reverse osmosis water. Where available, provide with manufacturer's standard packaged controls:

6.11.2.2. Heating fluid (if used) shall be a mixture of 35% propylene glycol and 65% distilled or reverse osmosis water.

6.11.2.3. Heating and cooling systems with glycol shall include an automatic glycol makeup system.

6.11.2.4. The use of evaporative cooling (including cooling towers, etc) is not permitted.

6.11.2.5. For water source heat pumps, closed-circuit or conventional cooling towers are not permitted.

6.11.2.6. For water cooled chillers, cooling towers are not permitted.

6.11.2.7. Natural gas-fired water boiler shall produce no greater than twenty (20) parts per million (ppm) nitrogen oxides (NOx) in the flue gases, at 3% excess oxygen and a combustion air temperature of 68 degrees F.

6.11.3. Communications Room (Including SPIRNET if applicable)

Provide stand alone, split system, direct expansion cooling systems for communications rooms, which shall operate independent of the building heating and cooling system. Reject heat to the mechanical room or to the building exterior. Design the communications room cooling equipment to maintain a temperature of 72 degrees F.

6.11.4. Electrical Rooms

Consider providing building relief air through the electrical room providing conditioned air through the room.

6.12. ENERGY CONSERVATION

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

No additional requirements.

No additional requirements.

6.13. FIRE PROTECTION

6.13.1. Fire detection And Mass Notification

Provide a tamper switch for the Post Indicator Valve (PIV). The tamper switch serving the PIV must report a trouble signal to the Fire Alarm Control Panel (FACP).The system shall be addressable looped with all devices interconnected. The fire alarm system shall communicate to the Fort Carson central fire system which is a radio based Monaco system. Place the Local Operator Control (LOC) near the entrance and the Fire Alarm panel. Provide a LCD and graphic map showing the zone of coverage for the fire alarm system. Coordinate location of exterior horn and light within 20 feet of the Fire Department Connection.

6.13.2. Use Schedule 40 piping for steel sprinkler system piping that is 50 mm (2 inches) and larger.

6.13.3. Location of Fire Department Connection shall be visible and unobstructed.

6.13.4. Provide fire extinguisher cabinet as required by the applicable criteria listed in chapter four of this section. Provide semi recessed fire extinguisher cabinets capable of housing a 10 pound ABC extinguisher. Fire extinguisher cabinet doors shall not be lockable and shall not be breakable.

6.13.5. For any coordination issue or question to the local AHJ please contact the Fort Carson Fire Department. The Point of Contact for the Fire Department (Fire Prevention Division) at Fort Carson is Chief Gerald Morrison (719-526-9354).

6.14. SUSTAINABLE DESIGN

6.14.1. LEED Rating Tool Version. This project shall be executed using LEED-NC Version 2.2.

6.14.2. The minimum requirement for this project is to achieve LEED Gold 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: None..

6.14.3. 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 Government. Administration/team management of the online project will be by the Contractor. 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.

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.

SS Credit 1 Site Selection:

Project site IS NOT considered prime farmland.

Delineation of 100-year flood elevation is shown on site drawings provided in this CONTRACT.

Project site contains no habitat for threatened or endangered species.

No portion of project site lies within 100 feet of any water, wetlands or areas of special concern.

Project site WAS NOT previously used as public parkland.

SS Credit 2 Development Density & Community Connectivity.

Project site DOES NOT meets the criteria for this credit.

SS Credit 3 Brownfield Redevelopment.

Project site DOES NOT meets the criteria for this credit.

SS Credit 4.1 Public Transportation Access.

Project site DOES NOT meets the criteria for this credit.

EA Credit 6 Green Power.

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

MR Credit 2 Construction Waste Management.

The Installation does not have an on-post recycling facility available for Contractor's use.

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. Not Used

6.14.8. Additional Information

Facility shall incorporate the latest LEED and Energy reduction requirements indicated in ECB-2010-14.

6.15. ENVIRONMENTAL

Refer to Paragraph 6.16, and to Appendix E - Environmental Information for additional environmental design statement of work information.

6.16. PERMITS

6.16.1. The following is a list of site specific Federal and State and local Environmental Regulations and Requirements for projects being constructed at Fort Carson

6.16.1.1. Environmental Protection Agency (EPA) Region 8

(a) National Pollution Discharge Elimination System (NPDES) General Permit for Storm Water Discharge Associated with Construction Activities. A copy of the permit may be found in Appendix E - Environmental Information. The Building Contractor will be the permitee for this permit.

(1) The Building Contractor will develop a Storm Water Pollution Prevention Plan (SWPPP), which will be approved by the Contracting Office Representative (COR) and Fort Carson. NOTE: The Notice of Intent cannot be filed before SWPPP review has been signed off by the COR and Fort Carson. Fort Carson Storm Water SWPPP Review Form is attached in Appendix E – Environmental Information.

(2) Provide and submit electronically an EPA Notice of Intent (NOI) to EPA Region 8 and Omaha District US Army Corps of Engineers.

(3) Provide and submit an EPA Notice of Termination (NOT) to EPA Region 8 and Omaha District US Army Corps of Engineers once final ground cover is complete and growing. NOTE: Before Notice of Termination is submitted a NOT Form from Fort Carson must be signed off by the COR and Fort Carson. Fort Carson NOT Inspection Form is attached in Appendix E – Environmental Information.

(b) Municipal Separate Storm Sewer System (MS4) Permit. Fort Carson is under a Municipal Separate Storm Sewer System (MS4) permit, issued by the US Environmental Protection Agency (EPA), which allows discharges of storm water from Fort Carson. The MS4 permit also requires Fort Carson to manage a storm water program and enforce compliance with EPA-issued permits. Attached is a Fort Carson Storm water Program Project Information Form which needs to be completed and submitted to the Fort Carson Storm Water Program Manager with Fort Carson Directorate of Public Works, Environmental Division prior to the start of the project. The following are requirements under the MS4 which are not required in the Construction General Permit for NPDES and must be included in the SWPPP.

- Include a dewatering plan in the SWPPP, as the State of Colorado dewatering permit does not apply on Fort Carson.

- Cover trash containers at all times. When trash containers is approximately 85% full, haul container to approved dump location.

- Line all concrete washouts. Exchangeable pans are acceptable, as long as the washout water is managed adequately.

6.16.1.2. State of Colorado Fugitive Dust Permit

(a) Land Development Application. Form located in Appendix E - Environmental Information.

(b) Fugitive Dust Control Plan for Land Development - Notice of Start Up Form. Air Pollution Emission Notice (APEN) is required if project last longer than 6 months construction time and/or is more than 25 acres. Form is located in Appendix E - Environmental Information.

6.16.1.3. Fort Carson Environmental Requirements

(a) Air Emissions. Equipment operation, activities, or processes performed by the Contractor shall be in accordance with all Federal and State air emission and performance laws and standards. All air emissions sources (boilers, hot water heaters, air conditioners, chillers, make up air units, emergency generators, etc..) will need to be sized, specified, or otherwise determined prior to construction (ground breaking), and reviewed by the air program to determine permitting requirements and PSD (prevention of significant deterioration) applicability. Information Required for Environmental Air Quality Assessment located in Appendix E - Environmental Information, Contractor needs to complete.

(1) Particulates. Control dust particles; aerosols and gaseous by-products from construction activities; and processing and preparation of materials, such as from asphaltic batch plants; at all times, including weekends, holidays and hours when work is not in progress. Maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates which would cause the Federal, State, and local air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, baghouse, scrubbers, electrostatic precipitators or other methods will be permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. Provide sufficient, competent equipment available to accomplish these tasks. Perform particulate control as the work proceeds and whenever a particulate nuisance or hazard occurs. Comply with all State and local visibility regulations.

(2) Odors. Control odors from construction activities at all times. The odors will not cause a health hazard and will be in compliance with State regulations and/or local ordinances.

(3) Sound Intrusions. Keep construction activities under surveillance and control to minimize environment damage by noise. Comply with the provisions of the state and Installation rules.

(4) Burning. Burning is not allowed on the project site unless specified in other sections of the specifications or authorized in writing by the Contracting Officer Representative. The specific time, location, and manner of burning will be subject to approval.

(5) CO Emissions. Fort Carson is located in a CO Emissions Maintenance Area. Provide the number and types of vehicle and equipment to be utilized during the project to the Directorate of Public Works, Environmental Division. Directorate of Public Works, Environmental Division will use this information to perform an Impact Analysis as part of the Environmental Assessment to determine if the project will meet conformity requirements of the Clean Air Act. Worksheet is provided in Information Required for Environmental Air Quality Assessment in Appendix E - Environmental Information.

(6) Low NOx Burners. All Fuel burning sources will have Low NOx burners capable of meeting NOx emissions of 20ppm or less.

(7) Non Ozone Depleting Refrigerants. All Air conditioning and chiller units will use Non Ozone depleting refrigerants such as R134a, R407, R410, etc.

(8) Emergency Generators. Any emergency generator to be installed will be EPA certified to Tier I11 emissions standards for engines with less than 750hp and Tier I1 for engines above 750hp.

(9) Fort Carson maintains a Title V air permit with a specific condition requiring the permit holder to track insignificant sources of Hazardous Air Pollutant Emissions in order to maintain our classification as a Synthetic Minor Area Source. The requirements for contractors, contract managers, and project proponents is to provide the Air Program with a listing of materials used such as paint, sealers and adhesives by completing the Product Use Data section of page 6 of the Air Quality Assessment form in its entirety.

(b) The POC at the Directorate of Public Works, Environmental Division is the Air Specialist for the Air Program.

(c) Notification of Demolition and Renovation Information Form located in Appendix E - Environmental Information.

(d) Provide Non Hazardous Solid Waste Diversion Report to Directorate of Public Works, Environmental Division. Form located in Appendix E - Environmental Information.

(e) Recycle and Waste Minimization. Fort Carson will provide receptacles, pick-up and dispose of cardboard and paper products. Call Fort Carson's Environmental Compliance Division Office of Solid Waste to arrange for this free service.

(f) Fuel and Lubricants

(1) Fuel and lubricants must be brought to the site each day. Storage of these items beyond daily use is not allowed.

(2) Dispose of used lubricants per 40 CFR 279.

(g) Wetland. Do not enter, disturb, destroy or allow discharge of contaminants into wetlands except as authorized.

(h) Disposal of Waste Water

(1) Waste water from construction activities will not be allowed to enter waterways or be discharged prior to being treated to remove pollutants.

(2) Groundwater encountered during construction activities will be land applied.

(3) Discharge water generated from flushing lines after disinfection or on conjunction with hydrostatic testing into the sanitary sewer with prior approval of the Fort Carson Waste Water Treatment Plant. The discharged water must be dechlorinated prior to discharge to the sanitary sewer.

(i) Historical, Archaeological and Cultural Resources. If historical, archaeological or cultural resources are encountered during construction activities, temporarily suspend work and contact the Contracting Officer Representative (COR) and Fort Carson’s Cultural Resources Manager.

(j) Integrated Pest Management. Coordinate with the Contracting Officer Representative and the Installation Pest Management Coordinator (IMPC) prior to pesticide application.

(k) Clean Equipment. Clean all equipment prior to arrival at Fort Carson. Remove soil residue egg deposits from plants and pests, noxious weeds and plant seeds.

(l) Military Munitions. Military munitions are defined in 40 CFR 260. Upon discovery, cease work immediately and contact the Contracting Office Representative (COR).

6.17. DEMOLITION

Please refer to Sheet CD100 for all areas requiring demolition.

Remove all pavements, utilities and other appurtenances necessary to construct the new facility.

Unless otherwise specified, dispose all removed materials outside the limits of Government-controlled lands in accordance with federal, state, and local regulations. Notify the Contracting Officer if any material to be disposed of is found to contain hazardous, toxic, biological or radiological substances. Remove rubbish and debris from Government property daily to avoid accumulation at the project site.

6.17.1 Pavement Removals/Utility Protection

Avoid installing utilities underneath existing streets, sidewalks, and parking areas. Do not install any utilities underneath buildings and relocate existing utilities that are underneath building. In cases where it is necessary for the utilities to cross existing undisturbed streets, sidewalks, and parking lots, install the lines using trenchless methods. No open trenching will be allowed unless written permission is obtained and approved by the Contracting Officer. Open trenching may be used beneath existing roads that are scheduled for removal, relocation or reconstruction. When open trench methods are approved, streets, sidewalks, and parking lots shall be sawcut, removed and replaced. Remove portions of walks and concrete pavements requiring removal to the nearest joint.

6.17.2 Utility Interference

All existing utilities, including but not limited to storm drain, electrical power, sewer, gas, water, and communication lines that are impacted during the construction of this project shall remain in service. If this is not feasible, coordinate all outages with the Contracting Officer. Mark all underground utilities from field data and surveys, site investigations, and digging permit locates, within and adjacent to areas of the work. Investigate all work areas with detection devices for cables and pipelines, to confirm locations, identify unknown utilities, and establish depths. Locate all underground utilities potentially disturbed by the work by hand digging or vacuum excavation prior to mechanical trenching or excavating in the vicinity. Notify the Contracting Officer of detection activities 48 hours in advance. Detection devices shall be on-site at all times.

6.18. ADDITIONAL FACILITIES

No additional facilities.

End of Section 01 10 00.18

SECTION 01 32 01.00 10
PROJECT SCHEDULE

1.0 GENERAL

1.1. REFERENCES

1.2. QUALIFICATION

2.0 PRODUCTS (NOT APPLICABLE)

3.0 EXECUTION

3.1. GENERAL REQUIREMENTS

3.2. BASIS FOR PAYMENT AND COST LOADING

3.3. PROJECT SCHEDULE DETAILED REQUIREMENTS

3.4. PROJECT SCHEDULE SUBMISSIONS

3.5. SUBMISSION REQUIREMENTS

3.6. PERIODIC SCHEDULE UPDATE MEETINGS

3.7. REQUESTS FOR TIME EXTENSIONS

3.8. DIRECTED CHANGES

3.9. WEEKLY PROGRESS MEETINGS

3.10. OWNERSHIP OF FLOAT

3.11. TRANSFER OF SCHEDULE DATA INTO RMS/QCS

1.0 GENERAL

1.1. REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

- U.S. ARMY CORPS OF ENGINEERS (USACE) ER 1-1-11 (1995) Progress, Schedules, and Network Analysis Systems http://www.usace.army.mil/publications/eng-regs/er1-1-11/entire.pdf

1.2. QUALIFICATIONS

Designate an authorized representative who shall be responsible for the preparation of the schedule and all required updating (statusing) and preparation of reports. The authorized representative shall be experienced in scheduling projects similar in nature to this project and shall be experienced in the use of the scheduling software that meets the requirements of this specification.

2.0 PRODUCTS (Not Applicable)

3.0 EXECUTION

3.1. GENERAL REQUIREMENTS

3.1.1. Submit a project schedule as specified herein for approval showing the sequence in which the Contractor proposes to perform the work and dates on which the Contractor contemplates starting and completing all schedule activities. The scheduling of the entire project, including the design and construction sequences is required. Contractor management personnel shall actively participate in its development. Designers, subcontractors and suppliers working on the project shall also contribute in developing an accurate project schedule. The schedule must be a forward planning as well as a project monitoring tool. The approved project schedule shall be used to measure the progress of the work and to aid in evaluating requests for excusable time extensions. The schedule shall be cost loaded and activity coded as specified herein. The schedule will provide the basis for all progress payments. If the Contractor fails to submit any schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments until the Contractor submits the required schedule

3.1.2. Status the schedule on at least a monthly basis, as specified herein. If in the opinion of the Contracting Officer, the Contractor falls behind the approved schedule, the Contractor shall take steps necessary to improve its progress including those that may be required by the Contracting Officer, without additional cost to the Government. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained. See paragraph 3.7.4.

3.1.3. Failure of the Contractor to comply with the requirements of the Contracting Officer shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the default terms of the contract.

3.2. BASIS FOR PAYMENT AND COST LOADING

The schedule shall be the basis for determining contract earnings during each update period and therefore the amount of each progress payment. Lack of an approved schedule update or qualified scheduling personnel will result in an inability of the Contracting Officer to evaluate contract earned value for the purposes of payment. Failure of the Contractor to provide all information, as specified herein will result in the disapproval of the preliminary, initial and subsequent schedule updates. In the event schedule revisions are directed by the Contracting Officer and those revisions have not been included in subsequent revisions or updates, the Contracting Officer may hold retainage up to the maximum allowed by contract, each payment period, until such revisions to the project schedule have been made. Activity cost loading shall be reasonable as determined by the Contracting Officer. The aggregate value of all activities coded to a contract CLIN as specified herein shall equal the value of the CLIN on the Schedule.

3.3. PROJECT SCHEDULE DETAILED REQUIREMENTS

The computer software system utilized to produce and update the project schedule shall be capable of meeting all requirements of this specification. Failure of the Contractor to meet the requirements of this specification will result in the disapproval of the schedule. Scheduling software that meets the activity coding structure defined in the Standard Data Exchange Format (SDEF) in ER-1-1-11(1995) referenced herein are Primavera Project Planner (P3) by Primavera, and Open Plan by Deltek.

3.3.1. Use of the Critical Path Method

Use the Critical Path Method (CPM) of network calculation to generate the project schedule. Prepare the project schedule using the Precedence Diagram Method (PDM).

3.3.2. Level of Detail Required

Develop the project schedule to an appropriate level of detail. Failure to develop the project schedule to an appropriate level of detail, as determined by the Contracting Officer, will result in its disapproval. The Contracting Officer will consider, but is not limited to, the following characteristics and requirements to determine appropriate level of detail:

3.3.2.1. Activity Durations

Reasonable activity durations are those that allow the progress of ongoing activities to be accurately determined between update periods. Less than 2 percent of all non-procurement activities shall have Original Durations (OD) greater than 20 work days or 30 calendar days. Procurement activities are defined herein.

3.3.2.2. Design and Permit Activities

Include design and permit activities, including necessary conferences and follow-up actions and design package submission activities. Include the design schedule in the project schedule, showing the sequence of events involved in carrying out the project design tasks within the specific contract period. This shall be at a detailed level of scheduling sufficient to identify all major design tasks, including those that control the flow of work. Include review and correction periods associated with each item.

3.3.2.3. Procurement Activities

Include activities associated with the submittal, approval, procurement, fabrication and delivery of long lead materials, equipment, fabricated assemblies and supplies. Long lead procurement activities are those with an anticipated procurement sequence of over 90 calendar days. A typical procurement sequence includes the string of activities: submit, approve/review, procure, fabricate, and deliver.

3.3.2.4. Mandatory Tasks

Include and properly schedule the following tasks (See also the Sample Preliminary Submittal Register Input Form):

3.3.2.4.1. Submission, review and acceptance of design packages, including BIM

3.3.2.4.2. Submission of mechanical/electrical/information systems layout drawings

3.3.2.4.3. Submission and approval of O & M manuals

3.3.2.4.4. Submission and approval of as-built drawings

3.3.2.4.5. Submission and approval of 1354 data and installed equipment lists

3.3.2.4.6. Submission and approval of testing and air balance (TAB)

3.3.2.4.7. Submission of TAB specialist design review report

3.3.2.4.8. Submission and approval of fire protection specialist

3.3.2.4.9. Submission and approval of testing and balancing of HVAC plus commissioning plans and data. Develop the schedule logic associated with testing and commissioning of mechanical systems to a level of detail consistent with the contract commissioning requirements.

3.3.2.4.10. Air and water balancing

3.3.2.4.11. HVAC commissioning

3.3.2.4.12. Controls testing plan submission

3.3.2.4.13. Controls testing

3.3.2.4.14. Performance Verification testing

3.3.2.4.15. Other systems testing, if required

3.3.2.4.16. Contractor's pre-final inspection

3.3.2.4.17. Correction of punch list from Contractor's pre-final inspection

3.3.2.4.18. Government's pre-final inspection

3.3.2.4.19. Correction of punch list from Government's pre-final inspection

3.3.2.4.20. Final Inspection

3.3.2.5. Government Activities. Show Government and other agency activities that could impact progress. These activities include but are not limited to: approvals, design reviews, review conferences, release for construction of design package(s), environmental permit approvals by State regulators, inspections, utility tie-ins, Government Furnished Property/Equipment (GFP) and Notice to Proceed for phasing requirements, if any.

3.3.2.6. Activity Responsibility Coding (RESP)

Assign Responsibility Code for all activities to the Prime Contractor, Subcontractor or Government agency responsible for performing the activity. Activities coded with a Government Responsibility code include, but are not limited to: Government approvals, Government design reviews, environmental permit approvals by State regulators, Government Furnished Equipment (GFE) and Notice to Proceed (NTP) for phasing requirements. Code all activities not coded with a Government Responsibility Code to the Prime Contractor or Subcontractor responsible to perform the work. Activities shall not have more than one Responsibility Code. Examples of acceptable activity code values are: DOR (for the designer of record); ELEC (for the electrical subcontractor); MECH (for the mechanical subcontractor); and GOVT (for USACE). Unacceptable code values are abbreviations of the names of subcontractors.

3.3.2.7. Activity Work Area Coding (AREA)

Assign Work Area code to activities based upon the work area in which the activity occurs. Define work areas based on resource constraints or space constraints that would preclude a resource, such as a particular trade or craft work crew from working in more than one work area at a time due to restraints on resources or space. Examples of Work Area Coding include different areas within a floor of a building, different floors within a building, and different buildings within a complex of buildings. Activities shall not have more than one Work Area Code. Not all activities are required to be Work Area coded. A lack of Work Area coding will indicate the activity is not resource or space constrained.

3.3.2.8. Contract Changes/Requests for Equitable Adjustment (REA) Coding (MODF)

Assign Activity code to any activity or sequence of activities added to the schedule as a result of a Contract Modification, when approved by Contracting Officer, with a Contract Changes/REA Code. Key all Code values to

the Government's modification numbering system. Any activity or sequence of activities added to the schedule as a result of alleged constructive changes made by the Government may be added to a copy of the current schedule, subject to the approval of the Contracting Officer. Assign Activity codes for these activities with a Contract Changes/REA Code. Key the code values to the Contractor's numbering system. Approval to add these activities does not necessarily mean the Government accepts responsibility and therefore liability for such activities and any associated impacts to the schedule, but rather the Government recognizes such activities are appropriately added to the schedule for the purposes of maintaining a realistic and meaningful schedule. Such activities shall not be Responsibility Coded to the Government unless approved. An activity shall not have more than one Contract Changes/REA Code

3.3.2.9. Contract Line Item (CLIN) Coding (BIDI)

Code all activities to the CLIN on the Contract Line Item Schedule to which the activity belongs. An activity shall not contain more than one CLIN Item Code. CLIN Item code all activities, even when an activity is not cost loaded.

3.3.2.10. Phase of Work Coding (PHAS)

Assign Phase of Work Code to all activities, based upon the phase of work in which the activity occurs. Code activities to either a Design Phase or a Construction Phase. Code fast track design and construction phases proposed by the Contractor to allow filtering and organizing the schedule by fast track design and construction packages. If the contract specifies construction phasing with separately defined performance periods, identify a Construction Phase Code to allow filtering and organizing the schedule accordingly. Each activity shall have only one Phase of Work code.

3.3.2.11. Category of Work Coding (CATW)

Assign Category of Work code to all Activities based upon the category of work which the activity belongs. Category of Work Code must include, but is not limited to: Design, Design Submittal, design reviews, review conferences, Construction Submittal, Approvals (if any), Acceptance, Procurement, Fabrication, Delivery, Weather Sensitive Installation, Non-Weather Sensitive Installation, Start Up, Test, and Turnover. Assign a Category of Work code to each activity. Each activity shall have only one Category of Work Code.

3.3.2.12. Definable Features of Work Coding (FOW1, FOW2, FOW3)

Assign a Definable Feature of Work Code to appropriate activities based on the definable feature of work to which the activity belongs. Definable Feature of Work is defined in Specification Section 01 45 04.00 10, Contractor Quality Control. An activity shall not have more than one Definable Feature of Work Code. Not all activities are required to be Definable Feature of Work Coded.

3.3.3. Scheduled Project Completion and Activity Calendars

The schedule interval shall extend from NTP date to the required contract completion date. The contract completion activity (End Project) shall finish based on the required contract duration in the accepted contract proposal, as adjusted for any approved contract time extensions. The first scheduled work period shall be the day after NTP is acknowledged by the Contractor. Schedule activities on a calendar to which the activity logically belongs. Activities may be assigned to a 7 day calendar when the contract assigns calendar day durations for the activity such as a Government Acceptance activity. If the Contractor intends to perform physical work less than seven days per week, schedule the associated activities on a calendar with non-work periods identified including weekends and holidays. Assign the Category of Work Code - Weather Sensitive Installation to those activities that are weather sensitive. Original durations must account for anticipated normal adverse weather. The Government will interpret all work periods not identified as non-work periods on each calendar as meaning the Contractor intends to perform work during those periods.

3.3.3.1. Project Start Date

The schedule shall start no earlier than the date on which the NTP was acknowledged. Include as the first activity in the project schedule an activity called "Start Project" or "NTP". The "Start Project" activity shall have an "ES" constraint date equal to the date that the NTP was acknowledged, with a zero day duration.

3.3.3.2. Schedule Constraints and Open Ended Logic

Constrain completion of the last activity in the schedule by the contract completion date. Schedule calculations shall result in negative float when the calculated early finish date of the last activity is later than the contract completion date. Include as the last activity in the project schedule an activity called "End Project". The "End Project" activity shall have an "LF" constraint date equal to the contract completion date for the project, and with a zero day duration or by using the “project must finish by” date in the scheduling software. The schedule shall have no constrained dates other than those specified in the contract. The use of artificial float constraints such as “zero fee float” or “zero total float” are typically prohibited. There shall only be 2 open ended activities: Start Project (or NTP) with no predecessor logic and End Project with no successor logic.

3.3.3.3. Early Project Completion

In the event the Preliminary or Initial project schedule calculates an early completion date of the last activity prior to the contract completion date, the Contractor shall identify those activities that it intends to accelerate and/or those activities that are scheduled in parallel to support the Contractor's "early" completion. The Contractor shall include all project and site overhead expenses through the required contract duration period in the contract cost. The Contractor will not be entitled to a time extension or price adjustment for extended overhead related costs due to any delays which may affect early contract completion prior to the required contract completion date. The last activity shall have a late finish constraint equal to the contract completion date and the schedule will calculate positive float. The Government will not approve an early completion schedule with zero float on the longest path. The Government is under no obligation to accelerate activities for which it is responsible to support a proposed early contract completion.

3.3.4. Interim Completion Dates

Constrain contractually specified interim completion dates to show negative float when the calculated early finish date of the last activity in that phase is later than the specified interim completion date.

3.3.4.1. Start Phase

Include as the first activity for a project phase an activity called "Start Phase X" where "X" refers to the phase of work. The “Start Phase X" activity shall have an "ES" constraint date equal to the date on which the NTP was acknowledged, and a zero day duration.

3.3.4.2. End Phase

Include as the last activity for a project phase an activity called "End Phase X" where "X" refers to the phase of work. The "End Phase X" activity shall have an "LF" constraint date equal to the specified completion date for that phase and a zero day duration.

3.3.4.3. Phase “X” Hammock

Include a hammock type activity for each project phase called "Phase X" where "X" refers to the phase of work. The "Phase X" hammock activity shall be logically tied to the earliest and latest activities in the phase.

3.3.5. Default Progress Data Disallowed

Do not automatically update Actual Start and Finish dates with default mechanisms that may be included in the scheduling software. Activity Actual Start (AS) and Actual Finish (AF) dates assigned during the updating process shall match those dates provided from Contractor Quality Control Reports. Failure of the Contractor to document the AS and AF dates on the Daily Quality Control report for every in-progress or completed activity, and failure to ensure that the data contained on the Daily Quality Control reports is the sole basis for schedule updating shall result in the disapproval of the Contractor's updated schedule and the inability of the Contracting Officer to evaluate Contractor progress for payment purposes. Updating of the percent complete and the remaining duration of any activity shall be independent functions. Disable program features which calculate one of these parameters from the other.

3.3.6. Out-of-Sequence Progress

Activities that have progressed before all preceding logic has been satisfied (Out-of-Sequence Progress) will be allowed only on a case-by-case basis subject to approval by the Contracting Officer. Propose logic corrections to eliminate all out of sequence progress or justify not changing the sequencing for approval prior to submitting an updated project schedule. Correct out of sequence progress that continues for more than two update cycles by logic revision, as approved by the Contracting Officer.

3.3.7. Negative Lags and Start to Finish Relationships

Lag durations contained in the project schedule shall not have a negative value. Do not use Start to Finish relationships (SF).

3.3.8. Calculation Mode

Schedule calculations shall retain the logic between predecessors and successors even when the successor activity starts and the predecessor activity has not finished. Software features that in effect sever the tie between predecessor and successor activities when the successor has started and the predecessor logic is not satisfied ("progress override") will not be allowed.

3.3.9. Milestones

Include milestone activities for each significant project event including but not limited to: milestone activities for each fast track design package released for construction; design complete; foundation/substructure construction complete; superstructure construction complete; building dry-in or enclosure complete to allow the initiation of finish activities; permanent power complete; and building systems commissioning complete.

3.4. PROJECT SCHEDULE SUBMISSIONS

Provide the submissions as described below. The data CD, reports, and network diagrams required for each submission are contained in paragraph SUBMISSION REQUIREMENTS.

3.4.1. Preliminary Project Schedule Submission

Submit the Preliminary Project Schedule, defining the Contractor's planned operations for the first 90 calendar days for approval within 15 calendar days after the NTP is acknowledged. The approved Preliminary Project Schedule will be used for payment purposes not to exceed 90 calendar days after NTP. Completely cost load the Preliminary Project Schedule to balance the contract award CLINS shown on the Price Schedule. Detail it for the first 90 calendar days. It may be summary in nature for the remaining performance period. It must be early start and late finish constrained and logically tied as previously specified. The Preliminary Project Schedule forms the basis for the Initial Project Schedule specified herein and must include all of the required Plan and Program preparations, submissions and approvals identified in the contract (for example, Quality Control Plan, Safety Plan, and Environmental Protection Plan) as well as design activities, the planned submissions of all early design packages, permitting activities, design review conference activities and other non-construction activities intended to occur within the first 90 calendar days. Schedule any construction activities planned for the first 90 calendar days after NTP. Constrain planned construction activities by Government acceptance of the associated design package(s) and all other specified Program and Plan approvals. Activity code any activities that are summary in nature after the first 90 calendar days with Responsibility Code (RESP) and Feature of Work code (FOW1, FOW2, FOW3)

3.4.2. Initial Project Schedule Submission

Submit the Initial Project Schedule for approval within 42 calendar days after NTP. The schedule shall demonstrate a reasonable and realistic sequence of activities which represent all work through the entire contract performance period. The Initial Schedule shall be at a reasonable level of detail as determined by the Contracting Officer. Include detailed design and permitting activities, including but not limited to identification of individual design packages, design submission, reviews and conferences; permit submissions and any required Government actions; and long lead procurement activities required prior to design completion. The Initial Project Schedule shall include the entire construction sequence and all fast track construction activities, with as much detail as is known at the time but, as a minimum, shall include all construction start and completion milestone activities, and detailed construction activities through the dry-in milestone, including all activity coding and cost loading. Include the remaining construction, including cost loading, but it may be scheduled summary in nature. As the design

proceeds and design packages are developed, fully detail the remaining construction activities concurrent with the monthly schedule updating process. Constrain construction activities by Government acceptance of associated designs. When the design is complete, incorporate into the then approved schedule update all remaining detailed construction activities that are planned to occur after the dry-in milestone.

3.4.3. Design Package Schedule Submission:

With each design package submitted to the Government, submit a frag-net schedule extracted from the then current Preliminary, Initial or Updated schedule which covers the activities associated with that Design Package including construction, procurement and permitting activities.

3.4.4. Periodic Schedule Updates

Based on the result of the meeting specified in PERIODIC SCHEDULE UPDATE MEETINGS, submit periodic schedule updates. These submissions shall enable the Contracting Officer to assess Contractor's progress. If the Contractor fails or refuses to furnish the information and project schedule data, which in the judgment of the Contracting Officer or authorized representative is necessary for verifying the Contractor's progress, the Contractor shall be deemed not to have provided an estimate upon which progress payment may be made. Update the schedule to include detailed lower WBS activities procurement and construction activities as the design progresses, but not later than the submission of the final, un-reviewed design submission for each separate design package. The Contracting Officer may require submission of detailed schedule activities for any distinct construction that is started prior to submission of a final design submission, if such activity is authorized.

3.4.5. Standard Activity Coding Dictionary

Use the activity coding structure defined in the Standard Data Exchange Format (SDEF) in ER 1-1-11, Appendix A. This exact structure is mandatory, even if some fields are not used. A template SDEF compatible schedule backup file (sdef.prx) is available on the QCS website: www.rmssupport.com. The SDEF format is as follows:

Field	Activity Code	Length	Description
1	WRKP	3	Workers per Day
2	RESP	4	Responsible Party (e.g. GC, subcontractor, USACE)
3	AREA	4	Area of Work
4	MODF	6	Modification or REA number
5	BIDI	6	Bid Item (CLIN)
6	PHAS	2	Phase of Work
7	CATW	1	Category of Work
8	FOW1	10	Feature of Work (used up to 10 characters in length)
9	FOW2	10	Feature of Work (used up to 20 characters in length)
10	FOW3	10	Feature of Work (used up to 30 characters in length)

3.5. SUBMISSION REQUIREMENTS

Submit the following items for the Preliminary Schedule, Initial Schedule, and every Periodic Schedule Update throughout the life of the project:

3.5.1. Data CD's

Provide two sets of data CD's containing the project schedule in the backup format. Each CD shall also contain all previous update backup files. File medium shall be CD. Label each CD, indicating the type of schedule (Preliminary, Initial, Update), full contract number, Data Date and file names. Each schedule shall have a unique file name as determined by the Contractor.

3.5.2. Narrative Report

Provide a Narrative Report with the Preliminary, Initial, and each Periodic Update of the project schedule, as the basis of the progress payment request. The Narrative Report shall include: a description of activities along the 2 most critical paths where the total float is less than or equal to 20 work days, a description of current and anticipated problem areas or delaying factors and their impact, and an explanation of corrective actions taken or required to be taken. The narrative report is expected to communicate to the Government, the Contractor's thorough analysis of the schedule output and its plans to compensate for any problems, either current or potential, which are revealed through its analysis. Identify and explain why any activities that, based their calculated late dates, should have either started or finished during the update period but did not.

3.5.3. Approved Changes Verification

Include only those project schedule changes in the schedule submission that have been previously approved by the Contracting Officer. The Narrative Report shall specifically reference, on an activity by activity basis, all changes made since the previous period and relate each change to documented, approved schedule changes.

3.5.4. Schedule Reports

The format, filtering, organizing and sorting for each schedule report shall be as directed by the Contracting Officer. Typically reports shall contain: Activity Numbers, Activity Description, Original Duration, Remaining Duration, Early Start Date, Early Finish Date, Late Start Date, Late Finish Date Total Float, Actual Start Date, Actual Finish Date, and Percent Complete. The following lists typical reports that will be requested. One or all of these reports may be requested for each schedule submission.

3.5.4.1. Activity Report

A list of all activities sorted according to activity number.

3.5.4.2. Logic Report

A list of detailed predecessor and successor activities for every activity in ascending order sorted by activity number.

3.5.4.3. Total Float Report

A list of all incomplete activities sorted in ascending order of total float. List activities which have the same amount of total float in ascending order of Early Start Dates. Do not show completed activities on this report.

3.5.4.4. Earnings Report by CLIN

A compilation of the Contractor's Total Earnings on the project from the NTP to the data date. This report shall reflect the earnings of specific activities based on the agreements made in the schedule update meeting defined herein. Provided that the Contractor has provided a complete schedule update, this report shall serve as the basis of determining progress payments. Group activities by CLIN Item number and sort by activity number. This report shall: sum all activities coded to a particular CLIN and provide a CLIN Item percent earned value; and complete and sum CLIN items to provide a total project percent complete. The printed report shall contain, for each activity: the Activity Number, Activity Description, Original Budgeted Amount, Quantity to Date, Percent Complete (based on cost), and Earnings to Date.

3.5.5. Network Diagram

The network diagram is required for the Preliminary, Initial and Periodic Updates. Depict and display the order and interdependence of activities and the sequence in which the work is to be accomplished. The Contracting Officer will use, but is not limited to, the following conditions to review compliance with this paragraph:

3.5.5.1. Continuous Flow

Show a continuous flow from left to right with no arrows from right to left. Show the activity number, description, duration, and estimated earned value on the diagram.

3.5.5.2. Project Milestone Dates

Show dates on the diagram for start of project, any contract required interim completion dates, and contract completion dates.

3.5.5.3. Critical Path

Clearly show the critical path.

3.5.5.4. Banding

Organize activities as directed to assist in the understanding of the activity sequence. Typically, this flow will group activities by category of work, work area and/or responsibility.

3.5.5.5. S-Curves

Earnings curves showing projected early and late earnings and earnings to date.

3.6. PERIODIC SCHEDULE UPDATE MEETINGS

Conduct periodic schedule update meetings for the purposes of reviewing the Contractor’s proposed out of sequence corrections, determining causes for delay, correcting logic, maintaining schedule accuracy and determining earned value. Meetings shall occur at least monthly within five days of the proposed schedule data date and after the Contractor has updated the schedule with Government concurrence respecting actual start dates, actual finish dates, remaining durations and percent complete for each activity it intend to status. Match the acutal start and finish dates with the dates exported, as described in paragraph 3.3.5. Provide a computer with the scheduling software loaded and a projector during the meeting which allows all meeting participants to view the proposed schedule update during the meeting. The meeting and resultant approvable schedule update shall be a condition precedent to a formal submission of the update as described in SUBMISSION REQUIREMENTS and to the submission of an invoice for payment. The meeting will be a working interactive exchange which will allow the Government and the Contractor the opportunity review the updated schedule on a real time and interactive basis. The Contractor’s authorized scheduling representative will organize, sort, filter and schedule the update as requested by the Government. The meeting will last no longer than 8 hours. A rough draft of the proposed activity logic corrections and narrative report shall be provided to the Government 48 hours in advance of the meeting. The Contractor's Project Manager and Authorized Scheduler shall attend the meeting with the Authorized Representative of the Contracting Officer.

3.6.1. Update Submission Following Progress Meeting

Submit a complete update of the project schedule containing all approved progress, revisions, and adjustments, pursuant to paragraph SUBMISSION REQUIREMENTS not later than 4 working days after the periodic schedule update meeting, reflecting only those changes made during the previous update meeting.

3.6.2. Staus of Activities

Update statusing information, including Actual Start Dates (AS), Actual Finish Dates (AF), Remaining Durations (RD) and Percent Complete shall be subject to the approval of the Government prior to the meeting. As a minimum, address the following items on an activity by activity basis during each progress meeting:

3.6.2.1. Actual Start and Finish Dates

Accurately status the AS and/or AF dates for each activity currently in-progress or completed since the last update The Government may allow an AF date to be assigned with the percent complete less than 100% to account for the value of work remaining but not restraining successor activities. Only assign AS dates when actual progress occurs on an activity.

3.6.2.2. Remaining Duration

Update the estimated RD for all incomplete activities independent of Percent Complete. Remaining durations may exceed the activity OD or may exceed the activity's prior update RD if the Government considers the current OD or RD to be understated based on current progress, insufficient work crews actually manning the job, unrealistic OD or deficiencies that must be corrected that restrain successor activities.

3.6.2.3. Percent Complete

Update the percent complete for each activity started, based on the realistic assessment of earned value. Activities which are complete but for remaining minor punch list work and which do not restrain the initiation of successor activities may be statused 100 percent complete. To allow for proper schedule management, cost load the correction of punch list from Government pre-final inspection activity(ies) not less than 1% of the total contract value, which activity(ies) may be declared 100 percent complete upon completion and correction of all punch list work identified during Government pre-final inspection(s).

3.6.2.4. Logic Changes

Specifically identify and discuss all logic changes pertaining to NTP on change orders, change orders to be incorporated into the schedule, contractor proposed changes in work sequence, corrections to schedule logic for out-of-sequence progress, and other changes that have been made pursuant to contract provisions. The Government will only approve logic revisions for the purpose of keeping the schedule valid in terms of its usefulness in calculating a realistic completion date, correcting erroneous logic ties, and accurately sequencing the work.

3.6.2.5. Other Changes

Other changes required due to delays in completion of any activity or group of activities include: 1) delays beyond the Contractor's control, such as strikes and unusual weather. 2) delays encountered due to submittals, Government Activities, deliveries or work stoppages which make re-planning the work necessary. 3) Changes required to correct a schedule that does not represent the actual or planned prosecution and progress of the work.

3.7. REQUESTS FOR TIME EXTENSIONS

In the event the Contractor believes it is entitled to an extension of the contract performance period, completion date, or any interim milestone date, furnish the following for a determination by the Contracting Officer: justification, project schedule data, and supporting evidence as the Contracting Officer may deem necessary. Submission of proof of excusable delay, based on revised activity logic, duration, and costs (updated to the specific date that the delay occurred) is a condition precedent to any approvals by the Government. In response to each Request For Proposal issued by the Government, the Contractor shall submit a schedule impact analysis demonstrating whether or not the change contemplated by the Government impacts the critical path.

3.7.1. Justification of Delay

The project schedule shall clearly display that the Contractor has used, in full, all the float time available for the work involved with its request. The Contracting Officer's determination as to the number of allowable days of contract extension shall be based upon the project schedule updates in effect for the time period in question, and other factual information. The Contractor will not be entitled to a time extension or price adjustment for extended overhead related costs due to any delays which may affect early contract completion prior to the required contract completion date.

Actual delays that are found to be caused by the Contractor's own actions, which result in a calculated schedule delay, will not be a cause for an extension to the performance period, completion date, or any interim milestone date.

3.7.2. Submission Requirements

Submit a justification for each request for a change in the contract completion date of less than 2 weeks based upon the most recent schedule update at the time of the NTP or constructive direction issued for the change. Such a request shall be in accordance with the requirements of other appropriate Contract Clauses and shall include, as a minimum:

3.7.2.1. A list of affected activities, with their associated project schedule activity number.

3.7.2.2. A brief explanation of the causes of the change

3.7.2.3. An analysis of the overall impact of the changes proposed.

3.7.2.4. A sub-network of the affected area

Identify activities impacted in each justification for change by a unique activity code contained in the required data file.

3.7.3. Additional Submission Requirements

The Contracting Officer may request an interim update with revised activities for any requested time extension of over 2 weeks. Provide this disk within 4 days of the Contracting Officer's request.

3.7.4. If Progress Falls Behind the Approved Project Schedule

3.7.4.1. Should progress fall behind the approved schedule (more than 20 work days of negative float) due to Contractor generated problems, promptly provide a supplemental recovery or completion schedule that illustrates its efforts to regain time to assure a completion by the required contract completion date.

3.7.4.2. The supplemental recovery or completion schedule will not replace the original, approved schedule as the official contract schedule. Continue to update the original, approved schedule on at least a monthly basis. In addition, the Contractor and the Contracting Officer will monitor the supplemental recovery or completion schedule on at least a bi-weekly basis to determine its effect on regaining the rate of progress to assure project completion by the contractually required completion date.

3.7.4.3. Do not artificially improve progress by simply revising the schedule logic, modifying or adding constraints, or shortening future work activity durations. Resource and manpower load the supplemental recovery schedule or completion schedule with crew size and productivity for each remaining activity, indicating overtime, weekend work, and/or double shifts needed to regain the schedule, in accordance with FAR 52.236.15, without additional cost to the Government. Indicate assumptions made and the basis for any logic, constraint, or duration changes used in the creation of the supplemental recovery or completion schedule in a narrative submitted for the Contracting Officer’s approval. Any additional resources or manpower must be evident at the work site. Do not modify the official contract schedule to include these assumptions.

3.7.4.4. Failure to perform work and maintain progress in accordance with the supplemental recovery or completion schedule may result in an interim and final unsatisfactory performance rating and/or may result in corrective action by the Contracting Officer in accordance with FAR 52.236-15.

3.8. DIRECTED CHANGES

If the NTP is issued for changes prior to settlement of price and/or time, submit proposed schedule revisions to the Contracting Officer within 2 weeks of the NTP being issued. The Contracting Officer will approve proposed revisions to the schedule prior to inclusion of those changes within the project schedule. If the Contractor fails to submit the proposed revisions, the Contracting Officer may furnish the Contractor with suggested revisions to the project schedule. The Contractor shall include these revisions in the project schedule until revisions are submitted

and final changes and impacts have been negotiated. If the Contractor has any objections to the revisions furnished by the Contracting Officer, advise the Contracting Officer within 2 weeks of receipt of the revisions. Regardless of the objections, the Contractor shall continue to update the schedule with the Contracting Officer's revisions until a mutual agreement in the revisions is reached. If the Contractor fails to submit alternative revisions within 2 weeks of receipt of the Contracting Officer's proposed revisions, the Contractor will be deemed to have concurred with the Contracting Officer's proposed revisions. The proposed revisions will then be the basis for an equitable adjustment for performance of the work.

3.9. WEEKLY PROGRESS MEETINGS

3.9.1. The Government and the Contractor shall meet weekly (or as otherwise mutually agreed to) between the meetings described in paragraph PERIODIC SCHEDULE UPDATE MEETINGS for the purpose of jointly reviewing the actual progress of the project as compared to the as planned progress and to review planned activities for the upcoming two weeks. The then current and approved schedule update shall be used for the purposes of this meeting and for the production and review of reports. The Contractor’s Project Manager and the Authorized Representative of the Contracting Officer shall attend. The weekly progress meeting will address the status of RFI’s, RFP’s and Submittals.

3.9.2. Provide a bar chart produced by the scheduling software, organized by Total Float and Sorted by Early Start Date, and a two week “look-ahead” schedule by filtering all schedule activities to show only current ongoing activities and activities schedule to start during the upcoming two weeks, organized by Work Area Code (AREA) and sorted by Early Start Date.

3.9.3. The Government and the Contractor shall jointly review the reports. If it appears that activities on the longest path(s) which are currently driving the calculated completion date (driving activities), are not progressing satisfactorily and therefore could jeopardize timely project completion, corrective action must be taken immediately. Corrective action includes but is not limited to: increasing the number of work crews; increasing the number of work shifts; increasing the number of hours worked per shift; and determining if Government responsibility coded activities require Government corrective action.

3.10. OWNERSHIP OF FLOAT

Float available in the schedule, at any time, shall not be considered for the exclusive use of either the Government or the Contractor.

3.11. TRANSFER OF SCHEDULE DATA INTO RMS/QCS

Download and upload the schedule data into the Resident Management System (RMS) prior to RMS databases being transferred to the Government and is considered to be additional supporting data in a form and detail required by the Contracting Officer pursuant to FAR 52.232-5 - Payments under Fixed-Price Construction Contracts. The receipt of a proper payment request pursuant to FAR 52.232-27 - Prompt Payment for Construction Contracts is contingent upon the Government receiving both acceptable and approvable hard copies and electronic export from QCS of the application for progress payment.

End of Section 01 32 01.00 10

SECTION 01 33 00
SUBMITTAL PROCEDURES

1.0 GENERAL

1.1. DEFINITIONS

1.2. NOT USED

1.3. SUBMITTAL CLASSIFICATION

1.4. APPROVED OR CONCURRED WITH SUBMITTALS

1.5. DISAPPROVED SUBMITTALS

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1.7. GENERAL

1.8. SUBMITTAL REGISTER

1.9. SCHEDULING

1.10. TRANSMITTAL FORM (ENG FORM 4025)

1.11. SUBMITTAL PROCEDURES

1.12. CONTROL OF SUBMITTALS

1.13. GOVERNMENT APPROVED SUBMITTALS

1.14. INFORMATION ONLY SUBMITTALS

1.15. STAMPS

1.0 GENERAL

1.1. DEFINITIONS

1.1.1. Submittal

Contract Clauses "FAR 52.236-5, Material and Workmanship," paragraph (b) and "FAR 52.236-21, Specifications and Drawings for Construction," paragraphs (d), (e), and (f) apply to all "submittals."

1.1.2. Submittal Descriptions (SD)

Submittals requirements are specified in the technical sections. Submittals are identified by SD numbers and titles as follows.

SD-01 Preconstruction Submittals

- Certificates of insurance.
- Surety bonds.
- List of proposed subcontractors.
- List of proposed products.
- Construction Progress Schedule.
- Submittal register.
- Schedule of prices.
- Accident Prevention Plan.
- Work plan.
- Quality control plan.
- Environmental protection plan.

SD-02 Shop Drawings

- Drawings, diagrams and schedules specifically prepared to illustrate some portion of the work.
- Diagrams and instructions from a manufacturer or fabricator for use in producing the product and as aids to the Contractor for integrating the product or system into the project.
- Drawings prepared by or for the Contractor to show how multiple systems and interdisciplinary work will be coordinated.

SD-03 Product Data

- Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical appearance and other characteristics of materials or equipment for some portion of the work.
- Samples of warranty language when the contract requires extended product warranties.

SD-04 Samples

- Physical examples of materials, equipment or workmanship that illustrate functional and aesthetic characteristics of a material or product and establish standards by which the work can be judged.
- Color samples from the manufacturer's standard line (or custom color samples if specified) to be used in selecting or approving colors for the project.
- Field samples and mock-ups constructed on the project site establish standards by which the ensuring work can be judged. Includes assemblies or portions of assemblies that are to be incorporated into the project and those which will be removed at conclusion of the work.

SD-05 Design Data

- Calculations, mix designs, analyses or other data pertaining to a part of work.
- Design submittals, design substantiation submittals and extensions of design submittals.

SD-06 Test Reports

- Report signed by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accord with specified requirements. (Testing must

have been within three years of date of contract award for the project.)

- Report which includes findings of a test required to be performed by the Contractor on an actual portion of the work or prototype prepared for the project before shipment to job site.
- Report which includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.
- Investigation reports.
- Daily checklists.
- Final acceptance test and operational test procedure.

SD-07 Certificates

- Statements printed on the manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements. Must be dated after award of project contract and clearly name the project.
- Document required of Contractor, or of a supplier, installer or subcontractor through Contractor, the purpose of which is to further quality of orderly progression of a portion of the work by documenting procedures, acceptability of methods or personnel qualifications.
- Confined space entry permits.
- Text of posted operating instructions.

SD-08 Manufacturer's Instructions

- Preprinted material describing installation of a product, system or material, including special notices and Material Safety Data sheets concerning impedances, hazards and safety precautions.

SD-09 Manufacturer's Field Reports

- Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- Factory test reports.

SD-10 Operation and Maintenance Data

- Data that is furnished by the manufacturer, or the system provider, to the equipment operating and maintenance personnel. This data is needed by operating and maintenance personnel for the safe and efficient operation, maintenance and repair of the item.

SD-11 Closeout Submittals

- Documentation to record compliance with technical or administrative requirements or to establish an administrative mechanism.

1.1.3. Approving Authority

Office authorized to approve submittal.

1.1.4. Work

As used in this section, on- and off-site construction required by contract documents, including labor necessary to produce submittals, construction, materials, products, equipment, and systems incorporated or to be incorporated in such construction.

1.2. NOT USED

1.3. SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.3.1. Designer of Record Approved (DA)

1.3.1.1. Designer of Record (DOR) approval is required for all extensions of design, critical materials, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction", they are considered to be "shop drawings". Provide the Government the number of copies designated hereinafter of all DOR approved submittals, after the DOR has taken appropriate action. The DOR shall ensure that submittals conform to the Solicitation, the Accepted Proposal and the completed design, however see below for those submittals proposing a deviation to the contract or a substitution of a material, system, or piece of equipment that was identified by manufacturer, brand name or model description in the accepted contract proposal.

1.3.1.2. The DOR shall ensure that the submittals comply with all applicable Buy American Act and Trade Agreement Act clauses in the contract. The DOR may confer with the Contracting Officer's Representative for advice and interpretation of those clauses, as necessary.

1.3.1.3. The Government may, but is not required to, review any or all DOR approved submittals for conformance to the solicitation, accepted proposal and the completed design. Except for submittals designated as deviating from the Solicitation, the Accepted Proposal or completed design, the Contractor may proceed with acquisition and installation upon DOR approval. Government Approved (GA)

1.3.2. Government Approved (GA)

Government approval is required for any item specifically designated as requiring Government approval in the Solicitation, for internal and external color finish selections and other items as designated by the Contracting Officer. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction," they are considered to be "shop drawings."

1.3.3. Government Conformance Review of Design (CR)

The Government will review all intermediate and final design submittals for conformance with the technical requirements of the solicitation. Section 01 33 16 **DESIGN AFTER AWARD** covers the design submittal and review process in detail. Review will be only for conformance with the applicable codes, standards and contract requirements. Design data includes the design documents described in Section 01 33 16 **DESIGN AFTER AWARD**. Generally, design submittals should be identified as SD-05 Design Data submittals.

1.3.4. Designer of Record Approved/Government Conformance Review (DA/CR)

1.3.4.1. Deviations to the Accepted Design. Designer of Record approval and the Government’s concurrence are required for any proposed deviation from the accepted design which still complies with the contract (the Solicitation and Accepted Proposal) before the Contractor is authorized to proceed with material acquisition or installation. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction", they are considered to be "shop drawings.” If necessary to facilitate the project schedule, the Contractor and the DOR may discuss a submittal proposing a deviation with the Contracting Officer's Representative prior to officially submitting it to the Government. However, the Government reserves the right to review the submittal before providing an opinion, if it deems it necessary. In any case, the Government will not formally agree to or provide a preliminary opinion on any deviation without the DOR's approval or recommended approval. The Government reserves the right to non-concur with any deviation from the design, which may impact furniture, furnishings, equipment selections or operations decisions that were made, based on the reviewed and concurred design.

1.3.4.2. Substitutions. Unless prohibited or provided for otherwise elsewhere in the Contract, where the accepted contract proposal named products, systems, materials or equipment by manufacturer, brand name and/or by model number or other specific identification, and the Contractor desires to substitute manufacturer or model after award, submit a requested substitution for Government concurrence. Include substantiation, identifying information and the DOR’s approval, as meeting the contract requirements and that it is equal in function, performance, quality and salient features to that in the accepted contract proposal.

1.3.5. Designer of Record Approved/Government Approved (DA/GA)

Any proposed deviation to the solicitation and/or the accepted proposal constitutes a change to the contract. In addition to the above stated requirements for proposed deviations to the accepted design, both Designer of Record and Government Approval and, where applicable, a contract modification are required before the Contractor is

authorized to proceed with material acquisition or installation for any proposed deviation to the contract. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction", they are considered to be "shop drawings". The Government reserves the right to accept or reject any such proposed deviation at its discretion.

1.3.6. Information Only

All submittals not requiring Designer of Record or Government approval will be for information only. Provide the Government “For Information Only” copies of all submittals not requiring Government approval or concurrence, after the Designer of Record has taken the appropriate action.

1.4. APPROVED OR CONCURRED WITH SUBMITTALS

Do not construe the Contracting Officer's approval of or concurrence with submittals as a complete check, but only that design, general method of construction, materials, detailing and other information appear to meet the Solicitation and Accepted Proposal. Approval or concurrence will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor under the Contractor Quality Control (CQC) requirements of this contract is responsible for design, dimensions, all design extensions, such as the design of adequate connections and details, etc., and the satisfactory construction of all work. The Government won’t consider re-submittals for the purpose of substituting previously approved materials or equipment unless accompanied by an explanation of why a substitution is necessary.

1.5. DISAPPROVED SUBMITTALS

Make all corrections required by the Contracting Officer, obtain the Designer of Record's approval when applicable, and promptly furnish a corrected submittal in the form and number of copies specified for the initial submittal. Resubmit any "information only" submittal found to contain errors or unapproved deviations from the Solicitation or Accepted Proposal as one requiring "approval" action, requiring both Designer of Record and Government approval. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, provide prompt notice in accordance with the Contract Clause "Changes" to the Contracting Officer.

1.6. WITHHOLDING OF PAYMENT

No payment for materials incorporated in the work will be made if all required Designer of Record or required Government approvals have not been obtained. No payment will be made for any materials incorporated into the work for any conformance review submittals or information only submittals found to contain errors or deviations from the Solicitation or Accepted Proposal.

1.7. GENERAL

Make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, the Contractor’s Quality Control (CQC) System Manager and the Designer of Record, if applicable, shall check, approve, sign, and stamp all items, indicating action taken. Clearly idenify proposed deviations from the contract requirements. Include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Schedule and make submittals requiring Government approval prior to the acquisition of the material or equipment covered thereby. Pick up and dispose of samples remaining upon completion of the work in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

1.8. SUBMITTAL REGISTER (GA)

Develop a complete list of submittals, including each separate design package submittal. Submit the initial submittal register within 15 days after Notice to Proceed, including, as a minimum, the design packages and other initial submittals required elsewhere in the contract. The Designer of Record shall identify required submittals in the

specifications, and use the list to prepare the Submittal Register, utilizing the government-provided software, QCS (see Section 01 45 01.10), to create the ENG Form 4288. Appendix Ris a preliminary submittal register input form for use with the Quality Management System and the Resident Office Management System (QCS and RMS). The Government will provide the Contractor the actual Excel Spreadsheet version of this sample input form after award to modify and to use for input into QCS. The Excel Spreadsheet is not totally inputable into QCS, so additional keystroke input will be necessary. The sample input form is not all-inclusive. In addition, additional submittals may be required by other parts of the contract. After award, the parties will meet to discuss contract specific (or task order specific for a task order contract) distribution for the submittals all-inclusive and additional submittals may be required by other parts of the contract. Develop and complete the submittal register as the design is completed. Submit it to the Contracting Officer with the un-reviewed final design package submission or as soon as the design specifications are completed, if before the final design submission. When applicable, if the Contractor elects to fast track design and construction, using multiple design package submissions,update the submittal register to reflect the submittals associated with each design submission, clearly denoting all revisions to the previous submission. The submittal register serves as a scheduling document for submittals and for control of submittal actions throughout the contract period. Coordinate the submit dates and need dates used in the submittal register with dates in the Contractor prepared progress schedule. Submit montly updates to the submittal register showing the Contractor action codes and actual dates with Government action codes and actual dates or until all submittals have been satisfactorily completed. Revise and submit the submittal register when revising the progress schedule.

1.9. SCHEDULING

Schedule submittals covering component items forming a system or items that are interrelated to be coordinated and submitted concurrently. Schedule certifications to be submitted with the pertinent drawings. Allow adequate time (a minimum of 15 calendar days exclusive of mailing time) and show on the register for those items requiring Government approval or concurrence. No delay damages or time extensions will be allowed for time lost in late submittals by the Contractor.

1.10. TRANSMITTAL FORM (ENG FORM 4025)

Use the transmittal form (ENG Form 4025) for submitting submittals in accordance with the instructions on the reverse side of the form. These forms will be furnished to the Contractor or are included in the QCS software if the Contractor is required to use QCS for this contract. Use a separate transmittal form for each specification section Complete this form by filling out all the heading blank spaces and identify each item submitted. Exercise special care to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

1.11. SUBMITTAL PROCEDURES

Make submittals as follows:

1.11.1. Procedures

The Government will further discuss detailed submittal procedures with the Contractor at the Post-Award Conference.

1.11.2. Deviations

For submittals which include proposed deviations requested by the Contractor, check the column "variation" of ENG Form 4025. Set forth in writing the reason for any deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

1.12. CONTROL OF SUBMITTALS

Carefully control his procurement operations to ensure that each individual submittal is made on or before the scheduled submittal date shown on the approved "Submittal Register."

1.13. GOVERNMENT APPROVED OR CONCURRED WITH SUBMITTALS

Upon completion of review of submittals requiring Government approval or concurrence, the Government will stamp and date the submittals as approved or concurred.. The Government will retain two (2) copies of the submittal and return one (1) copy(ies) of the submittal.

1.14. INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe. The Government will retain one (1) copies of information only submittals.

1.15. STAMPS

Use stamps similar to the following on the submittal data to certify that the submittal meets contract requirements:

CONTRACTOR

(FIRM NAME)

_____ Approved

_____ Approved with corrections as noted on submittal data and/or attached sheet(s)

Signature: _____

Title: _____

Date: _____

For design-build construction, both the Contractor Quality Control System Manager and the Designer of Record shall stamp and sign to certify that the submittal meets contract requirements.

SECTION 01 33 16
DESIGN AFTER AWARD

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ATTACHMENT C TRACKING COMMENTS IN DRCHECKS

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ATTACHMENT E LEED SUBMITTALS

ATTACHMENT F BUILDING INFORMATION MODELING REQUIREMENTS

ATTACHMENT G DESIGN SUBMITTAL DIRECTORY AND SUBDIRECTORY FILE ARRANGEMENT

1.0 GENERAL INFORMATION

1.1. INTRODUCTION

1.1.1. The information contained in this section applies to the design required after award. After award, the Contractor will develop the accepted proposal into the completed design, as described herein.

1.1.2. The Contractor may elect to fast track the design and construction that is, proceed with construction of parts of the sitework and facilities prior to completion of the overall design. To facilitate fast tracking, the Contractor may elect to divide the design into no more than six (6) design packages per major facility type and no more than three (3) design packages for site and associated work. Designate how it will package the design, consistent with its overall plan for permitting (where applicable) and construction of the project. See Sections 01 33 00 SUBMITTAL PROCEDURES and 01 32 01.00 10 PROJECT SCHEDULE for requirements for identifying and scheduling the design packaging plan in the submittal register and project schedule. See also Sections 01 10 00 STATEMENT OF WORK and 01 57 20.00 10 ENVIRONMENTAL PROTECTION for any specified permit requirements. If early procurement of long-lead item construction materials or installed equipment, prior to completion of the associated design package, is necessary to facilitate the project schedule, also identify those long-lead items and how it will assure design integrity of the associated design package to meet the contract requirements (The Contract consists of the Solicitation requirements and the accepted proposal). Once the Government is satisfied that the long-lead items meet the contract requirements, the Contracting Officer will allow the Contractor to procure the items at its own risk.

1.1.3. The Contractor may proceed with the construction work included in a separate design package after the Government has reviewed the final (100%) design submission for that package, review comments have been addressed and resolved to the Government's satisfaction and the Contracting Officer (or the Administrative Contracting Officer) has agreed that the design package may be released for construction.

1.1.4. INTEGRATED DESIGN. To the maximum extent permitted for this project, use a collaborative, integrated design process for all stages of project delivery with comprehensive performance goals for siting, energy, water, materials and indoor environmental quality and ensures incorporation of these goals. Consider all stages of the building lifecycle, including deconstruction.

1.2. DESIGNER OF RECORD

Identify, for approval, the Designer of Record (“DOR”) that will be responsible for each area of design. One DOR may be responsible for more than one area. Listed, Professional Registered, DOR(s) shall account for all areas of design disciplines shall be accounted for by a listed. The DOR’s shall stamp, sign, and date each design drawing and other design deliverables under their responsible discipline at each design submittal stage (see contract clause Registration of Designers). If the deliverables are not ready for release for construction, identify them as "preliminary" or "not for release for construction" or by using some other appropriate designation. The DOR(s) shall also be responsible for maintaining the integrity of the design and for compliance with the contract requirements through construction and documentation of the as-built condition by coordination, review and approval of extensions of design, material, equipment and other construction submittals, review and approval or disapproval of requested deviations to the accepted design or to the contract, coordination with the Government of the above activities, and by performing other typical professional designer responsibilities.

2.0 PRODUCTS (Not Applicable)

3.0 EXECUTION

3.1. PRE-WORK ACTIVITIES & CONFERENCES

3.1.1. Design Quality Control Plan

Submit for Government acceptance, a Design Quality Control Plan in accordance with Section 01 45 04.00 10 CONTRACTOR QUALITY CONTROL before design may proceed.

3.1.2. Post Award Conference

3.1.2.1. The government will conduct a post award contract administration conference at the project site, as soon as possible after contract award. This will be coordinated with issuance of the contract notice to proceed (NTP). The Contractor and major sub-contractor representatives shall participate. All designers need not attend this first meeting. Government representatives will include COE project delivery team members, facility users, facility command representatives, and installation representatives. The Government will provide an agenda, meeting goals, meeting place, and meeting time to participants prior to the meeting.

3.1.2.2. The post award conference shall include determination and introduction of contact persons, their authorities, contract administration requirements, discussion of expected project progress processes, and coordination of subsequent meetings for quality control (see Section 01 45 04.00 10 CONTRACTOR QUALITY CONTROL), Partnering (see below and SCR: Partnering), and the initial design conference (see below).

3.1.2.3. The government will introduce COE project delivery team members, facility users, facility command representatives, and installation representatives. The DB Contractor shall introduce major subcontractors, and other needed staff. Expectations and duties of each person shall be defined for all participants. A meeting roster shall be developed and distributed by the government with complete contact information including name, office, project role, phone, mailing and physical address, and email address.

3.1.3. Partnering & Project Progress Processes

3.1.3.1. The initial Partnering conference may be scheduled and conducted at any time with or following the post award conference. The Government proposes to form a partnership with the DB Contractor to develop a cohesive building team. This partnership will involve the COE project delivery team members, facility users, facility command representatives, installation representatives, Designers of Record, major subcontractors, contractor quality control staff, and contractor construction management staff. This partnership will strive to develop a cooperative management team drawing on the strengths of each team member in an effort to achieve a quality project within budget and on schedule. This partnership will be bilateral in membership and participation will be totally voluntary. All costs, excluding labor and travel expenses, shall be shared equally between the Government and the Contractor. The Contractor and Government shall be responsible for their own labor and travel costs. Normally, partnering meetings will be held at or in the vicinity of the project installation.

3.1.3.2. As part of the partnering process, the Government and Contractor shall develop, establish, and agree to comprehensive design development processes including conduct of conferences, expectations of design development at conferences, fast-tracking, design acceptance, Structural Interior Design (SID)/ Furniture, Fixtures & Equipment (FF&E) design approval, project closeout, etc. The government will explain contract requirements and the DB Contractor shall review their proposed project schedule and suggest ways to streamline processes.

3.1.4. Initial Design Conference

The initial design conference may be scheduled and conducted at the project installation any time after the post award conference, although it is recommended that the partnering process be initiated with or before the initial design conference. Any design work conducted after award and prior to this conference should be limited to site and is discouraged for other items. All Designers of Record shall participate in the conference. The purpose of the meeting is to introduce everyone and to make sure any needs the contractor has are assigned and due dates established as well as who will get the information. See also Attachment F, BUILDING INFORMATION MODELING REQUIREMENTS for discussion concerning the BIM Implementation Plan demonstration at this meeting. The DB Contractor shall conduct the initial design conference.

3.1.5. Pre-Construction Conference

Before starting construction activities, the Contractor and Government will jointly conduct a pre-construction administrative conference to discuss any outstanding requirements and to review local installation requirements for start of construction. It is possible there will be multiple Pre-Construction Conferences based on the content of the design packages selected by the Contractor. The Government will provide minutes of this meeting to all participants.

3.2. STAGES OF DESIGN SUBMITTALS AND OVER THE SHOULDER PROGRESS REVIEWS

The stages of design submittals described below define Government expectations with respect to process and content. The Contractor shall determine how to best plan and execute the design and review process for this project, within the parameters listed below. As a minimum, the Government expects to see at least one interim design submittal, at least one final design submittal before construction of a design package may proceed and at least one Design Complete submittal that documents the accepted design. The Contractor may sub-divide the design into separate packages for each stage of design and may proceed with construction of a package after the Government accepts the final design for that package. See discussion on waivers to submission of one or more intermediate design packages where the parties partner during the design process. See also Attachment F, BUILDING INFORMATION MODELING REQUIREMENTS for discussion concerning BIM and the various stages of design submittals and over-the-shoulder progress reviews**.**

3.2.1. Site/Utilities

To facilitate fast-track design-construction activities the contractor may submit a final (100%) site and utility design as the first design submittal or it may elect to submit interim and final site and utility design submittals as explained below. Following review, resolution, and incorporation of all Government comments, and submittal of a satisfactory set of site/utility design documents, after completing all other pre-construction requirements in this contract and after the pre-construction meeting, the Government will allow the Contractor to proceed with site development activities, including demolition where applicable, within the parameters set forth in the accepted design submittal. For the first site and utility design submission, whether an interim or final, the submittal review, comment, and resolution times from this specification apply, except that the Contractor shall allow the Government a 14 calendar day review period, exclusive of mailing time. No on-site construction activities shall begin prior to written Government clearance to proceed.

3.2.2. Interim Design Submittals

The Contractor may submit either a single interim design for review, representing a complete package with all design disciplines, or split the interim design into smaller, individual design packages as it deems necessary for fast-track construction purposes. As required in Section 01 32 01.00 10 PROJECT SCHEDULE, the Contractor shall schedule its design and construction packaging plan to meet the contract completion period. This submission is the Government's primary opportunity to review the design for conformance to the solicitation and to the accepted contract proposal and to the Building Codes at a point where required revisions may be still made, while minimizing lost design effort to keep the design on track with the contract requirements. The requirements for the interim design review submittals and review conferences are described hereinafter. This is not necessarily a hold point for the design process; the Contractor may designate the interim design submittal(s) as a snapshot and proceed with design development at its own risk. See below for a waiver, where the parties establish an effective over-the-shoulder progress review procedure through the partnering process that would eliminate the need for or expedite a formal intermediate design review on one or more individual design packages.

3.2.3. Over-the-Shoulder Progress Reviews

To facilitate a streamlined design-build process, the Government and the Contractor may agree to one-on-one reviewer or small group reviews, electronically, on-line (if available within the Contractor's standard design practices) or at the Contractor's design offices or other agreed location, when practicable to the parties. The Government and Contractor will coordinate such reviews to minimize or eliminate disruptions to the design process. Any data required for these reviews shall normally be provided in electronic format, rather than in hard copy. If the Government and Contractor establish and implement an effective, mutually agreeable partnering procedure for regular (e.g., weekly) over-the shoulder review procedures that allow the Government reviewers the opportunity to keep fully informed of the progress, contents, design intent, design documentation, etc. of the design package, the Government will agree to waive or to expedite the formal intermediate design review period for that package. The Contractor shall still be required to submit the required intermediate design documentation, however the parties may agree to how that material will be provided, in lieu of a formal consolidated submission of the package. It should be noted that Government funding is extremely limited for non-local travel by design reviewers, so the maximum use of virtual teaming methods must be used. Some possible examples include electronic file sharing, interactive software with on-line or telephonic conferencing, televideo conferencing, etc. The Government must still perform its Code and Contract conformance reviews, so the Contractor is encouraged to partner with the reviewers to find ways to facilitate this process and to facilitate meeting or bettering the design-build schedule. The Contractor shall maintain a fully functional configuration management system as described herein to track design revisions, regardless of whether or not there is a need for a formal intermediate design review. The formal intermediate

review procedures shall form the contractual basis for the official schedule, in the event that the partnering process determines that the formal intermediate review process to be best suited for efficient project execution. However, the Government pledges to support and promote the partnering process to work with the Contractor to find ways to better the design schedule.

3.2.4. Final Design Submissions

This submittal is required for each design package prior to Government acceptance of that design package for construction. The requirements for the final design submittal review conferences and the Government's acceptance for start of construction are described herein after.

3.2.5. Design Complete Submittals

After the final design submission and review conference for a design package, revise the design package to incorporate the comments generated and resolved in the final review conferences, perform and document a back-check review and submit the final, design complete documents, which shall represent released for construction documents. The requirements for the design complete submittals are described hereinafter.

3.2.6. Holiday Periods for Government Review or Actions

Do not schedule meetings, Government reviews or responses during the last two weeks of December or other designated Government Holidays (including Friday after Thanksgiving). Exclude such dates and periods from any durations specified herein for Government actions.

3.2.7. Late Submittals and Reviews

If the Contractor cannot meet its scheduled submittal date for a design package, it must revise the proposed submittal date and notify the government in writing, at least one (1) week prior to the submittal, in order to accommodate the Government reviewers' other scheduled activities. If a design submittal is over one (1) day late in accordance with the latest revised design schedule, or if notification of a proposed design schedule change is less than seven (7) days from the anticipated design submission receipt date, the Government review period may be extended up to seven (7) days due to reviewers' schedule conflicts. If the Government is late in meeting its review commitment and the delay increases the Contractor's cost or delays completion of the project, the Suspension of Work and Defaults clauses provide the respective remedy or relief for the delay.

3.3. DESIGN CONFIGURATION MANAGEMENT

3.3.1. Procedures

Develop and maintain effective, acceptable design configuration management (DCM) procedures to control and track all revisions to the design documents after the Interim Design Submission through submission of the As-Built documents. During the design process, this will facilitate and help streamline the design and review schedule. After the final design is accepted, this process provides control of and documents revisions to the accepted design (See Special Contract Requirement: Deviating From the Accepted Design). The system shall include appropriate authorities and concurrences to authorize revisions, including documentation as to why the revision must be made. The DCM data shall be available to the Government reviewers at all times. The Contractor may use its own internal system with interactive Government concurrences, where necessary or may use the Government's "DrChecks Design Review and Checking System" (see below and Attachment C).

3.3.2. Tracking Design Review Comments

Although the Contractor may use its own internal system for overall design configuration management, the Government and the Contractor shall use the DrChecks Design Review and Checking System to initiate, respond to, resolve and track Government design compliance review comments. This system may be useful for other data which needs to be interactive or otherwise available for shared use and retrieval. See Attachment C for details on how to establish an account and set-up the DrChecks system for use on the project.

3.3.3. Design and Code Checklists

Develop and complete various discipline-specific checklists to be used during the design and quality control of each submittal. Submit these completed checklists with each design submittal, as applicable, as part of the project documentation. See Section 01 45 04.00 10 Contractor Quality Control, Attachment D for a Sample Fire Protection and Life Safety Code review checklist and Attachment E for LEED SUBMITTALS.

3.4. INTERIM DESIGN REVIEWS AND CONFERENCES

3.4.1. General

At least one interim design submittal, review and review conference is required for each design package (except that, per paragraph 3.2.1, the Contractor may skip the interim design submission and proceed directly to final design on the sitework and utilities package). The DB Contractor may include additional interim design conferences or over-the-shoulder reviews, as needed, to assure continued government concurrence with the design work. Include the interim submittal review periods and conferences in the project schedule and indicate what part of the design work is at what percentage of completion. The required interim design conferences shall be held when interim design requirements are reached as described below. See also Paragraph: **Over-the-Shoulder Progress Reviews** for a waiver to the formal interim design review.

3.4.2. Procedures

After receipt of an Interim Design submission, allow the Government fourteen (14) calendar days after receipt of the submission to review and comment on the interim design submittal. For smaller design packages, especially those that involve only one or a few separate design disciplines, the parties may agree on a shorter review period or alternative review methods (e.g., over-the–shoulder or electronic file sharing), through the partnering process. For each interim design review submittal, the COR will furnish, to the Contractor, a single consolidated, validated listing of all comments from the various design sections and from other concerned agencies involved in the review process using the DrChecks Design Review and Checking System. The review will be for conformance with the technical requirements of the solicitation and the Contractor's RFP proposal. If the Contractor disagrees technically with any comment or comments and does not intend to comply with the comment, he/she must clearly outline, with ample justification, the reasons for noncompliance within five (5) days after receipt of these comments in order that the comment can be resolved. Furnish disposition of all comments, in writing, through DrChecks. The Contractor is cautioned that if it believes the action required by any comment exceeds the requirements of this contract, that it should take no action and notify the COR in writing immediately. The Interim Review conference will be held for each design submittal at the installation. Bring the personnel that developed the design submittal to the review conference. The conference will take place the week after the receipt of the comments by the Contractor. For smaller fast-track packages that involve only a few reviewers, the parties may agree to alternative conferencing methods, such as teleconferencing, or televideo, where available, as determined through Partnering.

3.4.3. Conference Documentation

3.4.3.1. In order to facilitate and accelerate the Government code and contract conformance reviews, identify, track resolution of and maintain all comments and action items generated during the design process and make this available to the designers and reviewers prior to the Interim and subsequent design reviews.

3.4.3.2. The DB Contractor shall prepare meeting minutes and enter final resolution of all comments into DrChecks. Copies of comments, annotated with comment action agreed on, will be made available to all parties before the conference adjourns. Unresolved problems will be resolved by immediate follow-on action at the end of conferences. Incorporate valid comments. The Government reserves the right to reject design document submittals if comments are significant. Participants shall determine if any comments are critical enough to require further design development prior to government concurrence. Participants shall also determine how to proceed in order to obtain government concurrence with the design work presented.

3.5. INTERIM DESIGN REQUIREMENTS

Interim design deliverables shall include drawings, specifications, and design analysis for the part of design that the Contractor considers ready for review.

3.5.1. Drawings

Include comments from any previous design conferences incorporated into the documents to provide an interim design for the “part” submitted.

3.5.2. Design Analyses

3.5.2.1. The designers of record shall prepare and present design analyses with calculations necessary to substantiate and support all design documents submitted. Address design substantiation required by the applicable codes and references and pay particular attention to the following listed items:

3.5.2.2. For parts including sitework, include site specific civil calculations.

3.5.2.3. For parts including structural work, include structural calculations.

(a) Identify all loads to be used for design.

(b) Describe the method of providing lateral stability for the structural system to meet seismic and wind load requirements. Include sufficient calculations to verify the adequacy of the method.

(c) Provide calculations for all principal roof, floor, and foundation members and bracing and secondary members.

(d) Provide complete seismic analyses for all building structural, mechanical, electrical, architectural, and building features as dictated by the seismic zone for which the facility is being constructed.

(e) Computer generated calculations must identify the program name, source, and version. Provide input data, including loads, loading diagrams, node diagrams, and adequate documentation to illustrate the design. The schematic models used for input must show, as a minimum, nodes/joints, element/members, materials/properties, and all loadings, induced settlements/deflections, etc., and a list of load combinations. Include an output listing for maximum/minimum stresses/forces and deflections for each element and the reactions for each loading case and combination.

(f) See also the Security (Anti-Terrorism) requirements below for members subject to Anti-Terrorist Force Protection (ATFP) and Progressive Collapse requirements.

(g) Fully coordinate and integrate the overall structural design between two different or interfacing construction types, such as modular and stick-built or multistory, stacked modular construction. Provide substantiation of structural, consolidation/settlement analysis, etc., as applicable, through the interfaces.

3.5.2.4. For Security (Anti-Terrorism): Provide a design narrative and calculations where applicable, demonstrating compliance with each of the 22 standards in UFC 4-010-01, which includes Design of Buildings to Resist Progressive Collapse (use the most recent version of UFC 4-023-03, regardless of references to any specific version in UFC 4-010-01). Where sufficient standoff distance is not being provided, show calculations for blast resistance of the structural system and building envelope. Show complete calculations for members subjected to ATFP loads, e.g., support members of glazed items (jambs, headers, sills) connections of windows to support members and connections of support members to the rest of the structure. For 3 story and higher buildings, provide calculations to demonstrate compliance with progressive collapse requirements.

3.5.2.5. For parts including architectural work, include building floor area analysis.

3.5.2.6. For parts including mechanical work, include HVAC analysis and calculations. Include complete design calculations for mechanical systems. Include computations for sizing equipment, compressed air systems, air duct design, and U-factors for ceilings, roofs and exterior walls and floors. Contractor shall employ commercially available energy analysis techniques to determine the energy performance of all passive systems and features. Use of hourly energy load computer simulation is required (see paragraph 3.5.5.2 for list of acceptable software). Based on the results of calculations, provide a complete list of the materials and equipment proposed with the manufacturer's published cataloged product installation specifications and roughing-in data.

3.5.2.7. For parts including life safety, include building code analysis and sprinkler and other suppression systems. Notwithstanding the requirements of the Codes, address the following:

(a) A registered fire protection engineer (FPE) must perform all fire protection analyses. Provide the fire protection engineer’s qualifications. See Section 01 10 00, paragraph 5 for qualifications.

(b) Provide all references used in the design including Government design documents and industry standards used to generate the fire protection analysis.

(c) Provide classification of each building in accordance with fire zone, building floor areas and height and number of stories.

(d) Provide discussion and description of required fire protection requirements including extinguishing equipment, detection equipment, alarm equipment and water supply. Alarm and detection equipment shall interface to requirements of Electronic Systems.

(e) Provide hydraulic calculations based on water flow test for each sprinkler system to insure that flow and pressure requirements can be met with current water supply. Include copies of Contractor's water flow testing done to certify the available water source.

3.5.2.8. For parts including plumbing systems:

(a) List all references used in the design.

(b) Provide justification and brief description of the types of plumbing fixtures, piping materials and equipment proposed for use.

(c) Detail calculations for systems such as sizing of domestic hot water heater and piping; natural gas piping; LP gas piping and tanks, fuel oil piping and tanks, etc., as applicable.

(d) When the geotechnical report indicates expansive soils are present, indicate in the first piping design submittal how piping systems will be protected against damage or backfall/backflow due to soil heave (from penetration of slab to the 5 foot building line).

3.5.2.9. For elevator systems:

(a) List all criteria codes, documents and design conditions used.

(b) List any required permits and registrations for construction of items of special mechanical systems and equipment.

3.5.2.10. For parts including electrical work, include lighting calculations to determine maintained foot-candle levels, electrical load analysis and calculations, electrical short circuit and protective device coordination analysis and calculations and arc fault calculations.

3.5.2.11. For parts including telecommunications voice/data (including SIPRNET, where applicable), include analysis for determining the number and placement of outlets

3.5.2.12. For Cathodic Protection Systems, provide the following stamped report by the licensed corrosion engineer or NACE specialist with the first design submission. The designer must be qualified to engage in the practice of corrosion control of buried or submerged metallic surfaces. He/she must be accredited or certified by the National Association of Corrosion Engineers (NACE) as a NACE Accredited Corrosion Specialist or a NACE certified Cathodic Protection Specialist, or must be a registered professional engineer with a minimum of five years experience in corrosion control and cathodic protection, Clearly describe structures, systems or components in soil or water to be protected. Describe methods proposed for protection of each.

3.5.2.13. Air Barrier System: Provide a narrative of the design and installation requirements for the Air Barrier system. As part of the design quality control process an air barrier consultant shall review drawing details to assure that details of critical Air Barrier components are properly detailed and incorporated during the design drawings and process (i.e. window flashing details, penetration in air barrier details, door flashing details, roofing/ceiling barrier interface details and etc.). Furnish the Government written review details and results.

3.5.3. Geotechnical Investigations and Reports:

3.5.3.1. The contractor’s licensed geotechnical engineer shall prepare a final geotechnical evaluation report, to be submitted along with the first foundation design submittal. Make this information available as early as possible during the over-the-shoulder progress review process. Summarize the subsurface conditions and provide recommendations for the design of appropriate utilities, foundations, floor slabs, retaining walls, embankments, and pavements. Include compaction requirements for fill and backfill under buildings, sidewalks, other structures and open areas. Recommend foundation systems to be used, allowable bearing pressures for footings, lateral load

resistance capacities for foundation systems, elevations for footings, grade beams, slabs, etc. Provide an assessment of post-construction settlement potential including total and differential. Provide recommendations regarding lateral earth pressures (active, at-rest, passive) to be used in the design of retaining walls. Include the recommended spectral accelerations and Site Class for seismic design along with an evaluation of any seismic hazards and recommendations for mitigation, if required. Include calculations to support the recommendations for bearing capacity, settlement, and pavement sections. Include supporting documentation for all recommended design parameters such as Site Class, shear strength, earth pressure coefficients, friction factors, subgrade modulus, California Bearing Ratio (CBR), etc. Provide earthwork recommendations, expected frost penetration, expected groundwater levels, recommendations for dewatering and groundwater control and the possible presence of any surface or subsurface features that may affect the construction of the project such as sinkholes, boulders, shallow rock, old fill, old structures, soft areas, or unusual soil conditions. Include pH tests, salinity tests, resistivity measurements, etc., required to design corrosion control and grounding systems. Include the raw field data. Arrange a meeting with the Government subsequent to completion and evaluation of the site specific geotechnical exploration to outline any differences encountered that are inconsistent with the Government provided preliminary soils information. Clearly outline differences which require changes in the foundation type, or pavement and earthwork requirements from that possible and contemplated using the Government furnished preliminary soils investigation, which result in a change to the design or construction. Any equitable adjustment is subject to the provisions of the contract's Differing Site Conditions Clause.

3.5.3.2. Vehicle Pavements: The Contractor's geotechnical report shall contain flexible and rigid pavement designs, as applicable for the project, including design CBR and modulus of subgrade reaction and the required compaction effort for subgrades and pavement layers. Provide Information on the types of base course materials available in the area and design strengths.

3.5.3.3. The Contractor and the professional geotechnical engineer consultant shall certify in writing that the design of the project has been developed consistent with the Contractor's final geotechnical report. The certification shall be stamped by the consulting professional geotechnical engineer and shall be submitted with the first design submission. If revisions are made to the initial design submission, a new certification shall be provided with the final design submission.

3.5.4. LEED Documentation:

Assign a LEED Accredited Professional, responsible to track LEED planning, performance and documentation for each LEED credit through construction closeout. Incorporate LEED credits in the plans, specifications and design analyses. Develop LEED supporting documentation as a separable portion of the Design Analysis and provide with each required design submittal. Include the LEED Project checklist for each non-exempt facility (one checklist may be provided for multiple facilities in accordance with the LEED-NC Application Guide for Multiple Buildings and On-Campus Building Projects and the LEED SUBMITTALS (Attachment E, herein) with each submittal. Final design submittal for each portion of the work must include all required design documentation relating to that portion of work (example - all site credit design documents with final site design). Submittal requirements are as indicated in Attachment E, LEED SUBMITTALS. Submit all documentation indicated on Attachment E as due at final design at final design submittal (for fast-track projects with multiple final design submittals, this shall be at the last scheduled final design submittal). All project documentation related to LEED shall conform to USGBC requirements for both content and format, including audit requirements and be separate from other design analyses. Maintain and update the LEED documentation throughout project progress to construction closeout and shall compile product data, receipts, calculations and other data necessary to substantiate and support all credits claimed. The Government may audit any or all individual credits. Audit documentation is not required to be submitted unless requested. These requirements apply to all projects. If the project requires the Contractor to obtain USGBC certification, the Contractor shall also be responsible for obtaining USGBC certification and shall provide written evidence of certification with the construction closeout LEED documentation submittal. Install the USGBC building plaque at the location indicated by the Government upon receipt. If Contractor obtains USGBC interim design review, submit the USGBC review to the Government within 30 days of receipt for information only.

3.5.4.1. LEED Documentation for Technology Solution Set. If the Solicitation provides a Prescriptive Technology Solution Set, use of the Technology Solution set has no effect on LEED documentation requirements. Provide all required LEED documentation, including energy analysis, in accordance with LEED requirements when using the Technology Solution Set.

3.5.5. Energy Conservation:

3.5.5.1. Refer to Section 01 10 00, Paragraph 5. Interim and Final Design submittals shall demonstrate that each building including the building envelope, HVAC systems, service water heating, power, and lighting systems meet the Mandatory Provisions and the Prescriptive Path requirements of ASHRAE 90.1. Use Compliance Documentation forms available from ASHRAE and included in the ASHRAE 90.1 User's Manual for this purpose. The Architectural Section of the Design Analysis shall include completed forms titled "Building Envelope Compliance Documentation Parts I and II". The Heating Ventilating and Air Conditioning (HVAC) Section of the Design Analysis shall include a completed form titled "HVAC Simplified Approach Option - Part I" if this approach is allowed by the Standard. Otherwise, the HVAC Section of the Design Analysis shall include completed forms titled "HVAC Mandatory Provisions - Part II" and "HVAC Prescriptive Requirements - Part III". The Plumbing Section of the Design Analysis shall include a completed form titled "Service Water Heating Compliance Documentation". The Electrical Section of the Design Analysis shall include an explanatory statement on how the requirements of ASHRAE 90.1-2004 Chapter 8 Power were met. The Electrical Section of the Design Analysis shall also include a completed form titled "Lighting Compliance Documentation".

3.5.5.2. Interim and Final Design submittals which address energy consuming systems, (heating, cooling, service hot water, lighting, power, etc.) must also include calculations in a separate Energy Conservation Section of the Design Analysis which demonstrate and document (a) the baseline energy consumption for the facility or facilities under contract, that would meet the requirements of ANSI/ASHRAE/IESNA Standard 90.1 and (b) the energy consumption of the facility or facilities under contract utilizing the materials and methods required by this construction contract. Use the USGBC Energy and Atmosphere (EA) Credit 1 compliance template / form or an equivalently detailed form for documenting compliance with the energy reduction requirements. This template / form is titled PERFORMANCE RATING METHOD and is available when the project is registered for LEED. The calculation methodology used for this documentation and analysis shall follow the guidelines set forth in Appendix G of ASHRAE 90.1, with two exceptions: a) receptacle and process loads may be omitted from the calculation; and b) the definition of the terms in the formula for Percentage Improvement found in paragraph G1.2 are modified as follows: Baseline Building Performance shall mean the annual energy consumption calculated for a building design intended for use as a baseline for rating above standard design meeting the minimum requirements of the energy standard, and Proposed Building Performance shall mean annual energy consumption calculated for the proposed building design intended for construction. This calculation shall address all energy consuming systems in a single integrated methodology. Include laboratory fume hoods and kitchen ventilation loads in the energy calculation. They are not considered process loads. Individual calculations for heating, cooling, power, lighting, power, etc. systems will not be acceptable. The following building simulation software is acceptable for use in calculating building energy consumption: Hourly Analysis Program (HAP) by Carrier Corp., TRACE 700 by Trane Corp., DOE-2 by US Department of Energy, EnergyPlus by DOD/DOE.

3.5.6. Specifications

Specifications may be any one of the major, well known master guide specification sources (use only one source) such as MASTERSPEC from the American Institute of Architects, SPECTEXT from Construction Specification Institute or Unified Facility Guide Specifications (UFGS using MASTERFORMAT 2004 numbering system), etc. (including specifications from these sources). Manufacturers' product specifications, utilizing CSI's Manu-Spec, three part format may be used in conjunction with the selected specifications. The designers of record shall edit and expand the appropriate Specifications to insure that all project design requirements, current code requirements, and regulatory requirements are met. Specifications shall clearly identify, where appropriate, specific products chosen to meet the contract requirements (i.e., manufacturers' brand names and model numbers or similar product information).

3.5.7. Building Rendering

Present and provide a draft color computer, artist, or hand drawn rendering with the conceptual design submittal of the building exterior. Perspective renderings shall include a slightly overhead view of the entire building to encompass elevations and the roof configuration of the building. After Government review and acceptance, provide a final rendering, including the following:

Three (3) 18" x 24" color prints, framed and matted behind glass with project title underneath the print.

One (1) Image file (high resolution) in JPG format on CD for those in the submittal distribution list.

3.5.8. Interim Building Design Contents

The following list represents what the Government considers should be included in the overall completed design for a facility or project. It is not intended to limit the contractor from providing different or additional information as needed to support the design presented, including the require design analyses discussed above. As the Contractor develops individual design packages and submits them for Interim review, include as much of the applicable information for an individual design package as is developed at the Interim design level for review purposes. These pieces shall be developed as the design progresses toward the design complete stage.

3.5.8.1. Lawn and Landscaping Irrigation System

3.5.8.2. Landscape, Planting and Turfing

3.5.8.3. Architectural

(a) Design Narrative

(b) Architectural Floor Plans, Typical Wall and Roof Sections, Elevations

(c) Finish schedule

(d) All required equipment

(e) Special graphics requirements

(f) Door and Window Schedules

(g) Hardware sets using BHMA designations

(h) Composite floor plan showing all pre-wired workstations

(i) Structural Interior Design (SID) package: See ATTACHMENT A for specific requirements

(j) Furniture, Fixtures & Equipment (FF&E) design package: See ATTACHMENT B for specific requirements

(k) Air Barrier Design: Details of all Air Barrier components, (i.e. window flashing details, penetrations in air barrier details, door flashing details, roofing/ceiling barrier interface details and etc.)

3.5.8.4. Structural Systems. Include:

(a) Drawings showing principal members for roof and floor framing plans as applicable

(b) Foundation plan showing main foundation elements where applicable

(c) Typical sections for roof, floor, and foundation conditions

3.5.8.5. Plumbing Systems

(a) Show locations and general arrangement of plumbing fixtures and major equipment

(b) Plan and isometric riser diagrams of all areas including hot water, cold water, waste and vent piping. Include natural gas (and meter as required), (natural gas and meter as required), (LP gas), (fuel oil) and other specialty systems as applicable.

(c) Include equipment and fixture connection schedules with descriptions, capacities, locations, connection sizes and other information as required

3.5.8.6. HVAC Systems

(a) Mechanical Floor Plans: The floor plans shall show all principle architectural features of the building which will affect the mechanical design. The floor plans shall also show the following:

(1) Room designations.

(2) Mechanical legend and applicable notes.

(3) Location and size of all ductwork and piping.

(4) Location and capacity of all terminal units (i.e., registers, diffusers, grilles, hydronic baseboards).

(5) Pre-Fabricated Paint Spray Booth (where applicable to project scope)

(6) Paint Preparation Area (where applicable to project scope)

(7) Exhaust fans and specialized exhaust systems.

(8) Thermostat location.

(9) Location of heating/cooling plant (i.e., boiler, chiller, cooling tower, etc).

(10) Location of all air handling equipment.

(11) Air balancing information.

(12) Flue size and location.

(13) Piping diagram for forced hot water system (if used).

(b) Equipment Schedule: Provide complete equipment schedules. Include:

(1) Capacity

(2) Electrical characteristics

(3) Efficiency (if applicable)

(4) Manufacturer's name

(5) Optional features to be provided

(6) Physical size

(7) Minimum maintenance clearances

(a) Details: Provide construction details, sections, elevations, etc., only where required for clarification of methods and materials of design.

(b) HVAC Controls: Submit complete HVAC controls equipment schedules, sequences of operation, wiring and logic diagrams, Input/Output Tables, equipment schedules, and all associated information. See the Statement of Work for additional specific requirements.

3.5.8.7. Fire Protection and Life Safety.

(a) Provide plan for each floor of each building that presents a compendium of the total fire protection features being incorporated into the design. Include the following types of information:

(1) The location and rating of any fire-resistive construction such as occupancy separations, area separations, exterior walls, shaft enclosures, corridors, stair enclosures, exit passageways, etc.

(2) The location and coverage of any fire detection systems

(3) The location and coverage of any fire suppression systems (sprinkler risers, standpipes, etc.)

(4) The location of any other major fire protection equipment

(5) Indicate any hazardous areas and their classification

(6) Schedule describing the internal systems with the following information: fire hazard and occupancy classifications, building construction type, GPM/square foot sprinkler density, area of operation and other as required

(b) Working plans and all other materials submitted shall meet NFPA 13 requirements, with respect to required minimum level of detail.

3.5.8.8. Elevators. Provide:

(a) Description of the proposed control system

(b) Description, approximate capacity and location of any special mechanical equipment for elevators.

3.5.8.9. Electrical Systems.

(a) Electrical Floor Plan(s): Show all principle architectural features of the building which will affect the electrical design. Show the following:

(1) Room designations.

(2) Electrical legend and applicable notes.

(3) Lighting fixtures, properly identified.

(4) Switches for control of lighting.

(5) Receptacles.

(6) Location and designation of panelboards. Clearly indicate type of mounting required (flush or surface) and reflect accordingly in specifications.

(7) Service entrance (conduit and main disconnect).

(8) Location, designation and rating of motors and/or equipment which requires electrical service. Show method of termination and/or connection to motors and/or equipment. Show necessary junction boxes, disconnects, controllers (approximate only), conduit stubs, and receptacles required to serve the motor and/or equipment.

(b) Building Riser Diagram(s) (from pad-mounted transformer to unit load center panelboard): Indicate the types and sizes of electrical equipment and wiring. Include grounding and metering requirements.

(c) Load Center Panelboard Schedule(s): Indicate the following information:

(1) Panelboard Characteristics (Panel Designation, Voltage, Phase, Wires, Main Breaker Rating and Mounting.

(2) Branch Circuit Designations.

(3) Load Designations.

(4) Circuit Breaker Characteristics. (Number of Poles, Trip Rating, AIC Rating)

(5) Branch Circuit Connected Loads (AMPS).

(6) Special Features

(d) Lighting Fixture Schedule(s): Indicate the following information:

(1) Fixture Designation.

(2) General Fixture Description.

(3) Number and Type of Lamp(s).

(4) Type of Mounting.

(5) Special Features.

(e) Details: Provide construction details, sections, elevations, etc. only where required for clarification of methods and materials of design.

3.5.8.10. Electronic Systems including the following responsibilities:

(a) Fire Detection and Alarm System. Design shall include layout drawings for all devices and a riser diagram showing the control panel, annunciator panel, all zones, radio transmitter and interfaces to other systems (HVAC, sprinkler, etc.)

(b) Fire Suppression System Control. Specify all components of the Fire Suppression (FS) System in the FS section of the specifications. Clearly describe how the system will operate and interact with other systems such as the fire alarm system. Include a riser diagram on the drawings showing principal components and interconnections with other systems. Include FS system components on drawing legend. Designate all components shown on floor plans “FS system components” (as opposed to “Fire Alarm components”). Show location of FS control panels, HVAC control devices, sensors, and 120V power panel connections on floor plans. Indicate zoning of areas by numbers (1, 2, 3) and detectors sub-zoned for cross zoning by letter designations (A and B). Differentiate between ceiling mounted and under floor detectors with distinct symbols and indicate sub-zone of each.

(c) Public Address System

(d) Special Grounding Systems. Completely reflect all design requirements in the specifications and drawings. Specifications shall require field tests (in the construction phase), witnessed by the Government, to determine the effectiveness of the grounding system. Include drawings showing existing construction, if any.

(e) Cathodic Protection.

(f) Intrusion Detection, Card Access System

(g) Central Control and Monitoring System

(h) Mass Notification System

(i) Electrical Power Distribution Systems

3.5.8.11. Separate detailed Telecommunications drawings for Information Systems including the following responsibilities:

(a) Telecommunications Cabling

(b) Supporting Infrastructure

(a) Outside Plant (OSP) Cabling - Campus or Site Plans - Exterior Pathways and Inter-Building Backbones

(a) Include a layout of the voice/data outlets (including voice only wall & pay phones) on telecommunication floor plan drawing, location of SIPRNET data outlets (where applicable), and a legend and symbol definition to indicate height above finished floor. Show size of conduit and cable type and size on Riser Diagram. Do not show conduit runs between backboard and outlets on the floor plans. Show underground distribution conduit and cable with sizing from point of presence to entrance facility of building.

(b) Layout of complete building per floor - Serving Zone Boundaries, Backbone Systems, and Horizontal Pathways including Serving Zones Drawings - Drop Locations and Cable ID's

(c) Communication Equipment Rooms - Plan Views - Tech and AMEP/Elevations - Racks and Walls. Elevations with a detailed look at all telecomm rooms. Indicate technology layout (racks, ladder-racks, etc.), mechanical/electrical layout, rack elevation and backboard elevation. They may also be an enlargement of a congested area of T1 or T2 series drawing.

3.6. FINAL DESIGN REVIEWS AND CONFERENCES

A final design review and review conference will be held upon completion of final design at the project installation, or – where equipment is available - by video teleconference or a combination thereof, for any design package to receive Government acceptance to allow release of the design package for construction. For smaller separate design packages, the parties may agree on alternative reviews and conferences (e.g., conference calls and electronic file sharing, etc.) through the Partnering process. Include the final design conference in the project schedule and shall indicate what part of the design work is at 100% completion. The final design conference will be held after the Government has had seven (7) calendar days after receipt of the submission to review the final design package and supporting data. For smaller packages, especially those involving only one or a few design disciplines the parties may agree on a shorter period.

3.7. FINAL DESIGN REQUIREMENTS

Final design deliverables for a design package shall consist of 100% complete drawings, specifications, submittal register and design analyses for Government review and acceptance. The 100% design submission shall consist of drawings, specifications, updated design analyses and any permits required by the contract for each package submitted. In order to expedite the final design review, prior to the conference, ensure that the design configuration management data and all review comment resolutions are up-to-date. Include the 100% SID and 100% FF&E binders for government approval. The Contractor shall have performed independent technical reviews (ITR's) and back-checks of previous comment resolutions, as required by Section 01 45 04.00 10 CONTRACTOR QUALITY CONTROL, including providing documentation thereof. Use DrChecks or other acceptable comment tracking system during the ITR and submit the results with each final design package

3.7.1. Drawings

3.7.1.1. Submit drawings complete with all contract requirements incorporated into the documents to provide a 100% design for each package submitted.

3.7.1.2. Prepare all drawings with the Computer-Aided Design and Drafting (CADD)/Computer-Aided Design (CAD) system, organized and easily referenced electronically, presenting complete construction information.

3.7.1.3. Drawings shall be complete. The Contractor is encouraged to utilize graphics, views, notes, and details which make the drawings easier to review or to construct but is also encouraged to keep such materials to those that are necessary.

3.7.1.4. Provide detail drawings that illustrate conformance with the contract. Include room finish schedules, corresponding color/finish/special items schedules, and exterior finish schedules that agree with the submitted SID binders.

3.7.1.5. The design documents shall be in compliance with the latest version of the A/E/C CAD Standard, available at https://cadbim.usace.army.mil/CAD. Use the approved vertical Corps of Engineers title blocks and borders on all drawings with the appropriate firm name included within the title block area.

3.7.1.6. CAD System and Building Information Modeling (BIM) (NOTE: If this is a Single Award or Multiple Award, Indefinite Delivery/Indefinite Quantity Contract, this information will be provided for each task order.)

All CAD files shall be fully compatible with MicroStation V8 or higher. Save all design CAD files as MicroStation V8 or higher files. All submitted BIM Models and associated Facility Data shall be fully compatible with Bentley BIM file format and the USACE Bentley BIM v8 Workspace.

(a) CAD Data Final File Format: During the design development capture geo-referenced coordinates of all changes made to the existing site (facility footprint, utility line installations and alterations, roads, parking areas, etc) as a result of this contract. There is no mandatory methodology for how the geo-referenced coordinates will be captured, however, Engineering and Construction Bulletin No. 2006-15, Subject: Standardizing Computer Aided Design (CAD) and Geographic Information Systems (GIS) Deliverables for all Military Design and Construction Projects identifies the format for final as-built drawings and data sets to be delivered to the government. Close-out requirements at the as-built stage; require final geo-referenced GIS Database of the new facility along with all exterior modifications. The Government will incorporate this data set into the Installation's GIS Masterplan or Enterprise GIS System. See also, Section 01 78 02.00 10 Closeout Submittals.

(b) Electronic Drawing Files: In addition to the native CAD design files, provide separate electronic drawing files (in editable CAD format and Adobe Acrobat PDF version 7.0 or higher) for each project drawing.

(c) Each file (both CAD and PDF) shall represent one complete drawing from the drawing set, including the date, submittal phase, and border. Each drawing file shall be completely independent of any data in any other file, including fonts and shapes not included with the basic CAD software program utilized. Fonts that are not included as part of the default CAD software package installation or recognized as an allowable font by the A/E/C CAD Standard are not acceptable in delivered CAD files. All displayed graphic elements on all levels of the drawing files shall be part of the project drawing image. The drawing files shall not contain any graphic element that is not part of the drawing image.

(d) Deliver BIM Model and associated Facility Data files in their native format. At a minimum, BIM files shall address major architecture design elements, major structural components, mechanical systems and electrical/communication distribution and elements as defined in Attachment F. See Attachment F for additional BIM requirements.

(e) Drawing Index: Provide an index of drawings sheet in CAD as part of the drawing set, and an electronic list in Microsoft Excel of all drawings on the CD. Include the electronic file name, the sheet reference number, the sheet number, and the sheet title, containing the data for each drawing.

(f) Hard Copies: Plot submitted hard copy drawings directly from the "electronic drawing files" and copy for quantities and sizes indicated in the distribution list at the end of this specification section. The Designers of Record shall stamp, sign and date original hard copy sheets as Released For Construction, and provide copies for distribution from this set.

3.7.2. Design Analyses

3.7.2.1. The designers of record shall update, finalize and present design analyses with calculations necessary to substantiate and support all design documents submitted.

3.7.2.2. The responsible DOR shall stamp, sign and date the design analysis. Identify the software used where, applicable (name, version, vendor). Generally, provide design analyses, individually, in an original (file copy) and one copy for the assigned government reviewer.

3.7.2.3. All disciplines review the LEED design analysis in conjunction with their discipline-specific design analysis; include a copy of the separable LEED design analysis in all design analysis submittals.

3.7.2.4. Do not combine multi-disciplined volumes of design-analysis, unless multiple copies are provided to facilitate multiple reviewers (one copy per each separate design analysis included in a volume).

3.7.3. Specifications

Specifications shall be 100% complete and in final form.

3.7.4. Submittal Register

Prepare and update the Submittal Register and submit it with the 100% design specifications (see Specification Section 01 33 00, SUBMITTAL PROCEDURES) with each design package. Include the required submittals for each specification section in a design package in the submittal register.

3.7.5. Preparation of DD Form 1354 (Transfer of Real Property)

This form itemizes the types, quantities and costs of various equipment and systems that comprise the project, for the purpose of transferring the new construction project from the Corps Construction Division to the Installation's inventory of real property. The Government will furnish the DB Contractor's design manager a DD Form 1354 checklist to use to produce a draft Form 1354. Submit the completed checklist and prepared draft Form DD 1354 with the 100% design in the Design Analysis. The Corps will use these documents to complete the final DD 1354 upon completion of construction.

3.7.6. Acceptance and Release for Construction

3.7.6.1. At the conclusion of the Final Design Review (after resolutions to the comments have been agreed upon between DOR and Government reviewers), the Contracting Officer or the ACO will accept the Final Design Submission for the design package in writing and allow construction to start for that design package. The Government may withhold acceptance until all major corrections have been made or if the final design submission requires so many corrections, even though minor, that it isn't considered acceptably complete.

3.7.6.2. Government review and acceptance of design submittals is for contract conformance only and shall not relieve the Contractor from responsibility to fully adhere to the requirements of the contract, including the Contractor’s accepted contract proposal, or limit the Contractor’s responsibility of design as prescribed under Special Contract Requirement: “Responsibility of the Contractor for Design” or limit the Government’s rights under the terms of the contract. The Government reserves the right to rescind inadvertent acceptance of design submittals containing contract deviations not separately and expressly identified in the submittal for Government consideration and approval.

3.8. DESIGN COMPLETE CONSTRUCTION DOCUMENT REQUIREMENTS

After the Final Design Submission and Review Conference and after Government acceptance of the Final Design submission, revise the design documents for the design package to incorporate the comments generated and resolved in the final review conference, perform and document a back-check review and submit the final, design complete documents. Label the final design complete documents “FOR CONSTRUCTION” or use similar language. In addition to the final drawings and specifications, the following deliverables are required for distribution and field use. The deliverable includes all documentation and supporting design analysis in final form, as well as the final review comments, disposition and the back-check. As part of the quality assurance process, the Government may perform a back-check of the released for construction documentation. Promptly correct any errors or omissions found during the Government back-check. The Government may withhold retainage from progress payments for work or materials associated with a final design package until this submittal has been received and the Government determines that it is complete.

3.9. SUBMITTAL DISTRIBUTION, MEDIA AND QUANTITIES

3.9.1. Submittal Distribution and Quantities

General: The documents which the Contractor shall submit to the Government for each submittal are listed and generally described in preceding paragraphs in this Section. Provide copies of each design submittal and design substantiation as follows (NOTE: If this is a Single Award or Multiple Award, Indefinite Delivery/Indefinite Quantity Contract, this information will be provided for each task order):

Activity and Address	Drawing Size (Full Size) **22x34** Full Sets/ *Partial Sets	Design Analyses & Specs Full Sets/ *Partial Sets	Drawing Size (Half Size) **11x17** Full Sets/ *Partial Sets	Non-BIM Data CD-ROM or DVD as Necessary (PDF& **.dgn**)	Furniture Submittal (Per Attachment B)	Structural Interior Design Submittal	BIM Data DVD (Per Attach F)
Commander, U.S.Army Engineer District **Omaha District**	0/0	2/0	6/0	1	1	1	1
Commander, U.S.Army Engineer District, Center of Standardization **Savannah District**	0/0	1/0	0/0	1	N/A	0	0
Installation	1/0	1/0	1/0	12	2	2	0
U.S.Army Corps of Engineers Construction Area Office	0/0	3/0	3/0	3	1	2	0
Information Systems Engineering Command (ISEC)	0/0	0/0	0/0	1	N/A	N/A	1
Other Offices	0/0	0/0	0/0	0	N/A	0	0

***NOTE: For partial sets of drawings, specifications and design analyses, see paragraph 3.9.3.3, below.**

****NOTE: When specified below in 3.9.2, furnish Installation copies of Drawings as paper copies, in lieu of the option to provide secure web-based submittals.**

3.9.2. Web based Design Submittals

Except for full or half-sized drawings for Installation personnel, as designated in the Table above, Web based design submittals will be acceptable as an alternative to the paper copies listed in the Table above, provided a single hard-copy PDF based record set is provided to the Contracting Officer for record purposes. Where the contract requires the Contractor to submit documents to permitting authorities, still provide those authorities paper copies (or in an alternate format where required by the authority). Web based design submittal information shall be provided with adequate security and availability to allow unlimited access those specifically authorized to Government reviewers while preventing unauthorized access or modification. File sizes must be of manageable size for reviewers to quickly download or open on their computers. As a minimum, drawings shall be full scale on

American National Standards Institute (ANSI) D sheets (34" x 22"). In addition to the optional website, provide the BIM data submission on DVD to each activity and address noted above in paragraph 3.9.1 for each BIM submission required in Attachment F.

3.9.3. Mailing of Design Submittals

3.9.3.1. Mail all design submittals to the Government during design and construction, using an overnight mailing service. The Government will furnish the Contractor addresses where each copy shall be mailed to after award of the contract (or individual task order if this is an indefinite delivery/indefinite quantity, task order contract). Mail the submittals to five (5) different addresses. Assemble drawing sheets, specs, design analyses, etc. into individual sets; do not combine duplicate pages from individual sets so that the government has to assemble a set.

3.9.3.2. Each design submittal shall have a transmittal letter accompanying it indicating the date, design percentage, type of submittal, list of items submitted, transmittal number and point of contact with telephone number.

3.9.3.3. Provide partial sets of drawings, specifications, design analyses, etc., as designated in the Table in paragraph 3.9.1, to those reviewers who only need to review their applicable portions of the design, such as the various utilities. The details of which office receives what portion of the design documentation will be worked out after award.

3.10. AS-BUILT DOCUMENTS

Provide as-built drawings and specifications in accordance with Section 01 78 02.00 10, CLOSEOUT SUBMITTALS. Update LEED design phase documentation during construction as needed to reflect construction changes and advancing project completion status (example - Commissioning Plan updates during construction phase) and include updated LEED documentation in construction closeout submittal.

ATTACHMENT A
STRUCTURAL INTERIOR DESIGN (SID) REQUIREMENTS

1.0 GENERAL INFORMATION

Structural Interior Design includes all building related elements and components generally part of the building itself, such as wall finishes, ceilings finishes, floor coverings, marker/bulletin boards, blinds, signage and built in casework. Develop the SID in conjunction with the furniture footprint.

2.0 STRUCURAL INTERIOR DESIGN (SID) REQUIREMENTS FOR THE INTERIM AND FINAL DESIGN SUBMITTALS

2.1. FORMAT AND SCHEDULE

Prepare and submit for approval an interior and exterior building finishes scheme for an interim design submittal. The DOR shall meet with and discuss the finish schemes with the appropriate Government officials prior to preparation of the schemes to be presented. Present original sets of the schemes to reviewers at an interim design conference.

At the conclusion of the interim phase, after resolutions to the comments have been agreed upon between DOR and Government reviewers, the Contractor may proceed to final design with the interior finishes scheme presented.

The SID information and samples are to be submitted in 8 ½" x 11" format using three ring binders with pockets on the inside of the cover. When there are numerous pages with thick samples, use more than one binder. Large D-ring binders are preferred to O-ring binders. Use page protectors that are strong enough to keep pages from tearing out. Anchor large or heavy samples with mechanical fasteners, Velcro, or double-faced foam tape rather than rubber cement or glue. Fold out items must have a maximum spread of 25 ½". Provide cover and spine inserts sheets identifying the document as "Structural Interior Design" package. Include the project title and location, project number, Contractor/A/E name and phone number(s), submittal stage and date.

Design submittal requirements include, but are not limited to:

2.1.1. Narrative of the Structural Interior Design Objectives

The SID shall include a narrative that discusses the building related finishes. Include topics that relate to base standards, life safety, sustainable design issues, aesthetics, durability and maintainability, discuss the development and features as they relate to the occupants requirements and the building design.

2.1.2. Interior Color Boards

Identify and key each item item on the color boards to the contract documents to provide a clear indication of how and where each item will be used. Arrange finish samples to the maximum extent possible by room type in order to illustrate room color coordination. Label all samples on the color boards with the manufacturer's name, patterns and colors name and number. Key or code samples to match key code system used on contract drawings.

Material and finish samples shall indicate true pattern, color and texture. Provide photographs or colored photocopies of materials or fabrics to show large overall patterns in conjunction with actual samples to show the actual colors. Finish samples must be large enough to show a complete pattern or design where practical.

Color boards shall include but not be limited to original color samples of the following:

All walls finishes and ceiling finishes, including corner guards, acrylic wainscoting and wall guards/chair rail finishes

All tile information, including tile grout color and tile patterns.

- All flooring finishes, including patterns.
- All door, door frame finishes and door hardware finishes
- All signage, wall base, toilet partitions, locker finishes and operable/folding partitions and trim

- All millwork materials and finishes (cabinets, counter tops, etc.)
- All window frame finishes and window treatments (sills, blinds, etc.)

Color board samples shall reflect all actual finish textures, patterns and colors required as specified. Patterned samples shall be of sufficient size to adequately show pattern and its repeat if a repeat occurs.

2.1.3. Exterior Color Boards

Prepare exterior finishes color boards in similar format as the interior finishes color boards, for presentation to the reviewers during an interim design conference. Provide original color samples of all exterior finishes including but not limited to the following:

- All Roof Finishes
- All Brick and Cast Stone Samples
- All Exterior Insulation and Finish Samples
- All Glass Color Samples
- All Exterior Metals Finishes
- All Window & Door Frame Finishes
- All Specialty Item Finishes, including trim

Identify each item on the exterior finishes color boards and key to the building elevations to provide a clear indication of how and where each item will be used.

2.2. STRUCTURAL INTERIOR DESIGN DOCUMENTS

2.2.1. General

Structural interior design related drawings must indicate the placement of extents of SID material, finishes and colors and must be sufficiently detailed to define all interior work. The following is a list of minimum requirements:

2.2.2. Finish Color Schedule

Provide finish color schedule(s) in the contract documents. Provide a finish code, material type, manufacturer, series, and color designations. Key the finish code to the color board samples and drawings.

2.2.3. Interior Finish Plans

Indicate wall and floor patterns and color placement, material transitions and extents of interior finishes.

2.2.4. Furniture Footprint Plans

Provide furniture footprint plans showing the outline of all freestanding and systems furniture for coordination of all other disciplines.

2.2.5. Interior Signage

Include interior signage plans or schedules showing location and quantities of all interior signage. Key each interior sign to a quantitative list indicating size, quantity of each type and signage text.

2.2.6. Interior Elevations, Sections and Details

Indicate material, color and finish placement.

ATTACHMENT B
FURNITURE, FIXTURES & EQUIPMENT (FF&E) REQUIREMENTS

1.0 FF&E REQUIREMENTS FOR THE INTERIM AND FINAL DESIGN SUBMITTALS

1.1. FORMAT AND SCHEDULE

Prepare and submit for approval a comprehensive FF&E scheme for an interim design submittal. The Contractor's interior designer, not a furniture dealer, shall develop the design. FF&E is the selection, layout, specification and documentation of furniture includes but is not limited to workstations, seating, tables, storage and shelving, filing, trash receptacles, clocks, framed artwork, artificial plants, and other accessories. Contract documentation is required to facilitate pricing, procurement and installation. The FF&E package is based on the furniture footprint developed in the Structural Interior Design (SID) portion of the interior design. Develop the FF&E package concurrently with the building design to ensure that there is coordination between the electrical outlets, switches, J-boxes, communication outlets and connections, and lighting as appropriate. In addition, coordinate layout with other building features such as architectural elements, thermostats, location of TV's, GF/GI equipment (for example computers, printers, copiers, shredders, faxes), etc. Locate furniture in front of windows only if the top of the item falls below the window and unless otherwise noted, do not attach furniture including furniture systems to the building. If project has SIPRNET and/or NIPRNET, coordinate furniture layout with SIPRNET and NIPRNET separation requirements. Verify that access required by DOIM for SIPRNET box and conduit is provided. The DOR shall interview appropriate Government personnel to determine FF&E requirements for furniture and furnishings prior to preparation of the scheme to be presented. Determine FFE items and quantities by, but not limited to: (1) the number of personnel to occupy the building, (2) job functions and related furniture/office equipment to support the job function, (3) room functions, (4) rank and grade. Present original sets of the scheme to reviewers at an interim design conference upon completion of the interim architectural submittal or three months prior to the submittal of the final FF&E package (whichever comes first).

Design may proceed to final with the FF&E scheme presented at the conclusion of the interim phase, after resolutions to the comments have been agreed upon between DOR and Government reviewers.

Provide six copies of the electronic versions of all documents upon completion of the final architectural submittal or ten months prior to the contract completion date (whichever comes first), to ensure adequate time for furniture acquisition. Provide unbound, electronic drawings in CAD and BIM. Provide all files needed to v,/iew complete drawings. Submit all text documents in Microsoft Word or Excel..

Submit four copies of the final and complete FF&E information and samples in 8 ½" x 11" format using three ring binders with pockets on the inside of the cover upon completion of the final architectural submittal or ten months prior to the contract completion date (whichever comes first). Use more than one binder when there are numerous pages with thick samples. Large D-ring binders are preferred to O-ring binders. Use page protectors that are strong enough to keep pages from tearing out for upholstery and finish boards. Anchor large or heavy samples with mechanical fasteners, Velcro, or double-faced foam tape rather than rubber cement or glue. Fold out items must have a maximum spread of 25 ½". Provide cover and spine inserts sheets identifying the document as "Furniture, Fixtures & Equipment" package and include the project title and location, project number, Contractor/A/E name and phone number(s), submittal stage and date.

Provide electronic copies of all documents upon completion of the final architectural submittal or ten months prior to the contract completion date (whichever comes first), to ensure adequate time for furniture acquisition. Provide six compact disks with all drawings files needed to view the complete drawings unbound and in the latest version AutoCAD. Provide six additional compact disks of all text documents in Microsoft Word or Excel.

Design submittal requirements include, but are not limited to:

1.1.1. Narrative of Interior Design Objectives

Provide a narrative description of the furniture, to include functional, safety and ergonomic considerations, durability, sustainability, aesthetics, and compatibility with the building design.

1.1.2. Furniture Order Form

Prepare one Furnishings Order Form for each item specified in the design. This form identifies all information required to order each individual item. In addition to the project name and location, project number, and submittal phase, the order form must include:

(a) Furniture item illustration and code

(b) Furniture item name

(c) Job name, location, and date

(d) General Services Administration (GSA) FSC Group, part, and section

(e) Manufacturer, Product name and Product model number or National Stock Number (NSN)

(f) Finish name and number (code to finish samples)

(g) Fabric name and number, minimum Wyzenbeek Abrasion Test double rubs (code to fabric samples)

(h) Dimensions

(i) Item location by room number and room name

(j) Quantity per room

(k) Total quantity

(l) Special instructions for procurement ordering and/or installation (if applicable)

(m) Written Product Description: include a non-proprietary paragraph listing the salient features of the item to include but not limited to:

(1) required features and characteristics

(2) ergonomic requirements

(3) functional requirements

(4) testing requirements

(5) furniture style

(6) construction materials

(7) minimum warranty

The following is an example for “m” features and characteristics, ergonomic requirements and functional requirements:

Chair Description:

(1) Mid-Back Ergonomic Task Chair

(2) Pneumatic Gaslift; Five Star Base

(3) Mesh Back; Upholstered Seat

(4) Height and Width Adjustable Task Arms:

a. Arm Height: 6”- 11” (+-1/2”)

b. Arm Width: 2”– 4” adjustment

(5) Height Adjustable Lumbar Support

(6) Adjustable Seat Height 16”-21” (+- 1”)

(7) Sliding Seat Depth Adjustment 15”-18” (+-1”)

(8) Standard Hard Casters (for carpeted areas)

(9) Overall Measurements:

a. Overall width: 25” - 27”

b. Overall depth: 25”– 28”

(10) Must have a minimum of the following adjustments (In addition to the above):

a. 360 Degree Swivel

b. Knee-Tilt with Tilt Tension

c. Back angle

d. Forward Tilt

e. Forward Tilt and Upright Tilt Lock

For projects with systems furniture, also provide a written description of the following minimum requirements:

(1) Type furniture systems (panel, stacking panels, spine wall, desk based system, or a combination)

(2) Minimum noise reduction coefficient (NRC)

(3) Minimum sound transfer coefficient (STC)

(4) Minimum flame spread and smoke development

(5) UL testing for task lighting and electrical system

(6) Panel widths and heights and their locations (this may be done on the drawings)Worksurface types and sizes (this may be done on the drawings)

(7) Worksurface edge type

(8) Varying panel/cover finish materials and locations (locations may be shown on the drawings)

(9) Storage requirements

(10) Keyboard requirements

(11) Lock and keying requirements

(12) Accessory components (examples: tack boards, marker boards, paper management)

(13) Electrical and communication raceway requirement; type, capacity and location (base, beltline, below and/or above beltline)

(14) Locations of communication cables (base, beltline, below and/or above beltline, top channel)

(15) Types of electrical outlets

(16) Types of communication jacks; provided and installed by others

(17) Locations of electrical outlets and communication jacks (this may be done on the drawings)

(18) Type of cable (examples: Cat. 5, Cat. 6, fiber optic; UTP or STP, etc.) system needs to support; provided and installed by others

1.1.3. Alternate Manufacturer List

Provide a table consisting of major furniture items that lists the manufacturers products specified on the Order Form and two alternate manufacturers. Major furniture items include, but are not limited to, casegoods, furniture systems, seating, and tables. Organize matrix by item code and item name. Supply alternates that are available on GSA Schedule and meet the requirements of the Furniture Order Form. One of the two alternates must be from UNICOR if possible. Provide manufacturer name address, telephone number, product series and product name for each alternate manufacturer.

1.1.4. FF&E Procurement List

Provide a table that lists all FF&E furniture, mission unique equipment and building Contractor Furnished/Contractor Installed (CF/CI) items. Give each item a code and name and designate whether item will be procured as part of the FF&E furniture, mission unique equipment or the building construction contract. Use the item code to key all FF&E documents including location plans, color boards, data sheets, cost estimate, etc.

1.1.5. Points of Contact (POCs)

Provide a comprehensive list of POCs needed to implement the FF&E package. This would include but not be limited to appropriate project team members, using activity contacts, interior design representatives, construction contractors and installers involved in the project. In addition to name, address, phone, fax and email, include each contact's job function. Divide the FF&E package into different sections based on this listing, applies to order forms and cost estimates.

1.1.6. Color Boards

Provide color boards for all finishes and fabrics for all FF&E items. Finishes to be included but not limited to paint, laminate, wood finish, fabric, etc.

1.1.7. Itemized Furniture Cost Estimate

Provide an itemized cost estimate of furnishings keyed to the plans and specifications of products included in the package. This cost estimate should be based on GSA price schedules. The cost estimate must include separate line items for general contingency, installation, electrical hook-up for systems furniture or other furniture requiring hardwiring by a licensed electrician, freight charges and any other related costs. Installation and freight quotes from vendors should be use in lieu of a percentage allowance when available. Include a written statement that the pricing is based on GSA schedules. An estimate developed by a furniture dealership may be provided as support information for the estimate, but must be separate from the contractor provided estimate.

1.2. INTERIOR DESIGN DOCUMENTS

1.2.1. Overall Furniture and Area Plans

Provide floor Plans showing locations and quantities of all freestanding, and workstation furniture proposed for each floor of the building. Key each room to a large scale Furniture Placement Plan showing the furniture configuration, of all furniture. Provide enlarged area plans with a key plan identifying the area in which the building is located. Key all the items on the drawings by furniture item code. Do not provide manufacturer specific information such as product names and numbers on drawings, Drawings shall be non-proprietary. This is typical for FFE on all plans, including those mentioned below.

1.2.2. Workstation Plans

Show each typical workstation configuration in plan view, elevations or isometric view. Drawings shall illustrate panels and all major components for each typical workstation configuration. Identify workstations using the same numbering system as shown on the project drawings. Key components to a legend on each sheet which identifies and describes the components along with dimensions. Provide the plan, elevations and isometric of each typical workstation together on the same drawing sheet.

1.2.3. Panel Plans

Show panel locations and critical dimensions from finished face of walls, columns, panels including clearances and aisle widths. Key panel assemblies to a legend which shall include width, height, configuration of frames, panel fabric and finishes (if there are different selections existing within a project), powered or non-powered panel and wall mount locations.

1.2.4. Desk Plans

Provide typical free standing desk configurations in plan view, elevation or isometric view and identify components to clearly represent each desk configuration.

1.2.5. Reflected Ceiling Plans

Provide typical plans showing ceiling finishes and heights, lighting fixtures, heating ventilation and air conditioning supply and return, and sprinkler head placement for coordination of furniture.

1.2.6. Electrical and Telecommunication Plans

Show power provisions including type and locations of feeder components, activated outlets and other electrical componentsShow locations and quantities of outlets for workstations. Clearly identify different outlets, i.e. electrical, LAN and telecommunication receptacles indicating each type proposed. Show wiring configuration, (circuiting, switching, internal and external connections) and provide as applicable.

1.2.7. Artwork Placement Plans

Provide an Artwork Placement Plan to show location of artwork, assign an artwork item code to each piece of artwork. As an alternative, artwork can be located on the Furniture Plans. Provide a schedule that identifies each piece by room name and number. Provide installation instructions; include mounting height.

1.2.8. Window Drapery Plans

Provide Interior Window Drapery Plans. Key each drapery treatment to a schedule showing color, pattern, material, drapery size and type, draw direction, location and quantities.

1.3. FURNITURE SELECTION

1.3.1. Select furniture from the GSA Schedules. Specify furniture available open market when an item is not available on the GSA Schedules. Provide justification fort items not available on the GSA Schedules.

1.3.2. To the greatest extent possible when specifying furniture work within a manufacturer's family of furniture for selections, example: Steelcase, Turnstone, Brayton International, Metro, and Vecta are all Steelcase companies. Each alternate should also be specified from a manufacturer's family of furniture, example: first set of alternates would be specified from Knoll's family of furniture and the second from Herman Miller family of furniture. It may be necessary to make some selections from other than a manufacturer's family of furniture if costs are not reasonable for particular items, some items are not available or appropriate for the facility or the items are not on GSA Schedule. If this occurs, consider specifying product from an open line that is accessible by numerous dealerships. Select office furniture including case goods, tables, storage, seating, etc. that is compatible in style, finish and color. Select furniture that complies with ANSI/BIFMA and from manufacturer's standard product line as shown in the most recent published price list and/or amendment and not custom product.

1.4. CONSTRUCTION

1.4.1. Provide knee space at workstations and tables that is not obstructed by panels/legs that interfere with knee space of seated person and specificy modesty panels at walls to be of a height or be hinged to allow access to building wall electrical outlets and communication jacks. Provide desks, storage and tables with leveling devices to compensate for uneven floors.

1.4.2. Specify workstations and storage of steel construction. Provide worksurface tops constructed to prevent warpage. Provide user friendly features such as radius edges. Do not use sharp edges and exposed connections and ensure the underside of desks, tables and worksurfaces are completely and smoothly finished. Provide abutting worksurfaces that mate closely and are of equal heights when used in side-by-side configurations in order to provide a continuous and level worksurface.

1.4.3. Drawers shall stay securely closed when in the closed position and protect wires from damage during drawer operation. Include a safety catch to prevent accidental removal when fully open

1.4.4. Unless otherwise noted, provide lockable desks and workstations, filing cabinets and storage. Key all locks within a one person office the same; key all one person offices within a building differently. If an office or open office area has more than one workstation, key all the workstations differently, but key all locks within an individual workstation the same. Use tempered glass glazing when glazing is required. Use light-emitting diode (LED)/solid state lighting where task lighting is required in furniture.

1.5. FINISHES AND UPHOLSTERY

1.5.1. Specify neutral colors for casegoods, furniture systems, storage and tables. Specify desk worksurfaces and table tops that are not too light or too dark in color and have a pattern to help hide soiling. Accent colors are

allowed in break and lounge areas. Keep placement of furniture systems panel fabric accent colors to a minimum. All finishes shall be cleanable with ordinary household cleaning solutions.

1.5.2. Use manufacturer's standard fabrics; including textile manufacturers fabrics that have been graded into the furniture manufactures fabric grades and are available through their GSA Schedule. Customers Own Material (COM) can be used in headquarter buildings in command suites with executive furniture. Coordinate specific locations with Corps of Engineers Interior Designer.

1.5.3. Specify seating upholstery that meets Wyzenbeek Abrasion Test, 55,000 minimum rubs. Specify a soil retardant finish for woven fabrics if Crypton or vinyl upholstery is not provided for seating in dining areas. Use manufacturer's standard fabrics. This includes textile manufacturers fabrics that have been graded into the furniture manufactures fabric grades and are available through their GSA Schedule. Specify upholstery and finish colors and patterns that help hide soiling. Specify finishes that can be cleaned with ordinary household cleaning solutions.

1.6. ACCESSORIES

1.6.1. Specify all accessories required for completely finished furniture installation. Provide filing cabinets and storage for office supplies. Provide tack surfaces at workstations with overhead storage. Provide tackable surfaces at workstations with overhead storage.

1.6.2. Not Used.

1.6.3. Workstations are to be equipped with stable keyboard trays that have height adjustability, tilting capability, including negative tilt, have a mouse pad at same height as the keyboard tray that can accommodate both left and right handed users, and retractable under worksurface.

1.7. MISSION UNIQUE EQUIPMENT

Funding for FF&E furniture items and mission unique equipment (MUE) items are from two different sources. Separate the designs and procurement documentation for FFE items and MUE. MUE includes, but is not limited to, items such as industrial shelving, workbenches, appliances, fitness equipment, IT equipment and supporting carts. The User will purchase and install mission unique equipment items, unless otherwise noted. Identify locations of known MUE items such as industrial shelving, workbenches, appliances, etc. for space planning purposes.

1.8. SUSTAINABILITY

1.8.1. For all designs provided regardless of facility type, make every effort to implement all aspects of sustainability to the greatest extent possible for all the selections made in the FF&E package. This includes but is not limited to the selection of products that consider: **Material Chemistry and Safety of Inputs** (What chemicals are used in the construction of the selections?); **Recyclability** (Do the selections contain recycled content?); **Disassembly** (Can the selections be disassembled at the end of their useful life to recycle their materials?).

1.8.2. Make selections to the greatest extent possible of products that possess current McDonough Braungart Design Chemistry (MBDC) certification or other "third-party" certified Cradle to Cradle program, Forest Stewardship Council (FSC) certification, GREENGAURD certification or similar "third-party" certified products consisting of low-emitting materials.

1.9. FURNITURE SYSTEMS

1.9.1. General.

Where appropriate, design furniture systems in open office areas. Coordinate style and color of furniture systems with other storage, seating, etc. in open office areas. Minimize the number of workstation typicals and the parts and pieces required for the design to assist in future reconfiguration and inventorying.

1.9.2. Connector Systems.

Specify a connector system that allows removal of a single panel or spine wall within a typical workstation configuration without requiring disassembly of the workstation or removal of adjacent panels. Specify connector

system with tight connections and continuous visual seals. When Acoustical panels are used, provide connector system with continuous acoustical seals. Specify concealed clips, screws, and other construction elements, where possible.

1.9.3. Panels and Spine Walls

Specify panels and spine walls with hinged or removable covers that permit easy access to the raceway when required but are securely mounted and cannot be accidentally dislodged under normal conditions. Panels shall be capable of structurally supporting more than 1 fully loaded component per panel per side. Raceways are to be an integral part of the panel and must be able to support lay-in cabling and have a large capacity for electrical and IT. Do not thread cables through the frame.

1.9.4. Electrical And Information/Technology (IT)

Design furniture with electrical systems that meets requirements of UL 1286 when powered panels are required and UL approved task lights that meet requirements of NFPA 70. Dependent on user requirements and Section 01 10 00, paragraph 3 requirements, it is recommended that workstation electrical and IT wiring entry come from the building walls to eliminate the use of power poles and access at the floor. Design electrical and IT systems that are easily accessed in the spine wall and panels without having to move return panels and components. Electrical and IT management will be easily accessible by removable wall covers which can be removed while workstation components are still attached. Specify connector system that has continuation of electrical and IT wiring within workstations and workstation to workstation.

1.9.5. Pedestals

Specify pedestals that are interchangeable from left to right, and right to left, and retain pedestal locking system capability.

1.10. EXECUTIVE FURNITURE

1.10.1. Design for executive furniture in command areas, coordinate specific locations with Corps of Engineers Interior Designer. Use upgraded furniture, upholsteries and finishes in command suites. This includes but is not limited to wood casegoods, seating and tables. Select executive furniture casegoods from a single manufacturer and style line, to include workstations, credenzas, filing, and storage, etc.

1.10.2. Specify furniture with wood veneer finish (except worksurfaces) with mitered solid wood edge of same wood type. Provide worksurface plastic laminate that closely matches adjacent wood veneer. Other executive office furniture such as seating, tables, executive conference room furniture, etc. shall be compatible in style, finish and color with executive furniture casegoods.

1.11. SEATING

1.11.1. General

Specify appropriate chair casters and glides for the floor finish where the seating is located. Universal casters that are appropriate for both hard surface flooring and carpet are preferred. All seating shall support up to a minimum of 250 lbs.

1.11.2. Desk and Guest Seating

Select ergonomic desk chairs with casters, non-upholstered adjustable arms, waterfall front, swivel, tilt, variable back lock, adjustable back height or adjustable lumbar support, pneumatic seat height adjustment, and padded, contoured upholstered seat and back. Desk and guest chair backs may be other than upholstered such as mesh fabric if it is ergonomically designed, forms to back and is comfortable. Depending on scale of desk chair provide seat pan forward and back adjustment to increase or decrease depth of seat pan. All desk chairs shall have an adjustable seat height range of 4 1/2", range to include 16 1/2-20". Select guest chairs that are compatible in style, finish and color with the desk chairs.

1.11.3. Conference Room Seating

At tables, select ergonomic conference seating with casters, non-upholstered arms, waterfall front, swivel, tilt, pneumatic seat height adjustment, and padded, contoured seat and back, unless otherwise noted. Select arm height and/or design that allows seating to be moved up closely to the table top. Conference chair backs may be other than upholstered such as mesh fabric if it is ergonomically designed, forms to back and is comfortable. Perimeter conference chairs shall be compatible in style, finish and color with conference seating at the tables.

1.11.4. Lounge, Waiting and Reception Area Seating

Select seating with arms and cushioned, upholstered seat and back. In heavy use areas, arms shall be easily cleaned such as non-upholstered arms or upholstered arms with wood arm caps unless otherwise noted.

1.11.5. Break Room Seating

Select stackable seating that is easily cleaned. Seating shall be appropriate for table and counter heights as applicable with non-upholstered arms if arms are required. Chairs shall have metal legs and composite materials for seats.

1.11.6. Lounge, Waiting and Reception Furniture.

Design for end and coffee tables with plastic laminate tops that are compatible in style finish and color with the seating.

1.12. FILING AND STORAGE.

Select storage and shelving units that meet customer’s functional load requirements for stored items. Specify counterweights for filing cabinets when required by the manufacturer for stability. File drawers shall allow only one drawer to be opened at a time. Provide heavy duty storage and shelving if information is not available.

1.13. TRAINING TABLES.

Don’t use plastic laminate self edge. Training tables shall be reconfigurable, moveable and storable; lighter weight folding with dollies or castered as necessary. Specify dollies if required.

1.14. FURNITURE WARRANTIES.

Specify manufacturer's performance guarantees or warranties that include parts, labor and transportation as follows:

Furniture System, unless otherwise noted – 10 year minimum
Furniture System Task Lights – 2 year minimum, excluding bulbs
Furniture System Fabric – 3 year minimum
Desks - 10 year minimum
Seating, unless otherwise noted - 10 year minimum
Seating Mechanisms and Pneumatic Cylinders - 10 years
Fabric - 3 years minimum
Filing and Storage - 10 year minimum
Tables, unless otherwise noted - 10 year minimum
Table Mechanisms – 5 year
Table Ganging Device - 1 year
Items not listed above - 1 year minimum

ATTACHMENT C
TRACKING COMMENTS IN DRCHECKS

1.0 General

The Government and DB Contractor shall set up the project in Dr Checks. Throughout the design process, the parties shall enter, track, and back-check comments using the DrChecks system. Government reviewers enter design review comments into DrChecks. Designers of Record shall annotate comments timely and specifically to indicate exactly what action will be taken or why the action is not required. Comments considered critical by the conference participants shall be flagged as such.

2.0 DrChecks Review Comments

The Contractor and the Government shall monitor DrChecks to assure all comments are annotated and agreed to by the designers and reviewers prior to the next submittal. The DrChecks comments and responses shall be printed and included in the design analysis for record.

2.1. Conference participants (reviewers) will expect coordination between Design Analysis calculations and the submitted design. Reviewers will also focus on the design submittal's satisfaction of the contract requirements.

2.2. The Designers of Record shall answer each comment in DrChecks with a formal response prior to the next submittal, clearly indicating what action will be taken and what drawing/spec will change. Designers of Record are encouraged to directly contact reviewers to discuss and agree to the formal comment responses rather than relying only on DrChecks and review meetings to discuss comments. With the next design conference, reviewers will back-check answers to the comments against the submittal, in addition to reviewing additional design work.

2.3. Comments that, in the DB Contractor's opinion, require effort outside the scope of the contract shall be clearly indicated as such in DrChecks. The DB Contractor shall not proceed with work outside the contract until a modification to the contract is properly executed, if one is necessary.

3.0 DrChecks Initial Account Set-Up

To initialize an office's use of DrChecks, choose a contact person within the office to call the DrChecks Help Desk at 800-428-HELP, M-F, 8AM-5PM, Central time. This POC will be given an office password to distribute to others in the office. Individuals can then go to the hyperlink at http://www.projnet.org and register as a first time user. Upon registration, each user will be given a personal password to the DrChecks system.

3.1. Once the office and individuals are registered, the COE's project manager or lead reviewer will assign the individuals and/or offices to the specific project for review. At this point, persons assigned can make comments, annotate comments, and close comments, depending on their particular assignment.

4.0 DrChecks Reviewer Role

The Contractor is the technical reviewer and the Government is the compliance reviewer of the DB designers design documents. Each reviewer enters their own comments into the Dr Checks system. To enter comments:

4.1. Log into DrChecks.

4.2. Click on the appropriate project.

4.3. Click on the appropriate review conference. An Add comment screen will appear.

4.4. Select or fill out the appropriate sections (particularly comment discipline and type of document for sorting) of the comment form and enter the comment in the space provided.

4.5. Click the Add Comment button. The comment will be added to the database and a fresh screen will appear for the next comment you have.

4.6. Once comments are all entered, exit DrChecks by choosing “My Account” and then Logout.

5.0 DrChecks Comment Evaluation

The role of the designers of record is to evaluate and respond to the comments entered by the Government reviewers and by the DB Contractor. To respond to comments:

5.1. Log into DrChecks.

5.2. Click on the appropriate project.

5.3. Under “Evaluate” click on the number under “Pending”.

5.4. Locate the comments that require your evaluation. (Note: If you know the comment number you can use the Quick Pick window on your home page in DrChecks; enter the number and click on go.)

5.5. Select the appropriate evaluation (concur, non-concur, for information only, or check and resolve) and add the response.

5.6. Click on the Add button. The evaluation will be added to the database and a fresh screen will appear with the next comment.

5.7. Once evaluations are all entered, exit DrChecks by choosing “My Account” and then Logout.

6.0 DrChecks Back-check

At the following design conference, participants will back-check comment annotations against newly presented documents to verify that the designers' responses are acceptable and completed. The Contractor and Government reviewers shall either enter additional back-check comments, as necessary or close those that are resolved as a result of the design conferences:

6.1. Log into DrChecks.

6.2. Click on the appropriate project.

6.3. Under “My Backcheck” click on the number under “Pending”.

6.4. If you agree with the designer’s response select “Close Comment” and add a closing response if desired.

6.5. If you do not agree with the designer’s response or the submittal does not reflect the response given, select “Issue Open”, enter additional information.

6.6. Click on the Add button. The back-check will be added to the database and a fresh screen will appear with the next comment.

6.7. Once back-checks are all entered, exit DrChecks by choosing “My Account” and then Logout. The design is completed and final when there are no pending comments to be evaluated and there are no pending or open comments under back-check.

ATTACHMENT D
SAMPLE FIRE PROTECTION AND LIFE SAFETY CODE REVIEW

Instructions: Use the information outlined in this document to provide the minimum requirement for development of Fire Protection and Life Safety Code submittals for all building projects. Additional and supplemental information may be used to further develop the code review. Insert N/A after criteria, which may be “not applicable”.

1.0 SAMPLE FIRE PROTECTION AND LIFE SAFETY CODE REVIEW

1.1. Project Name (insert name and location)

1.2. Applicable Codes and Standards

1.2.1. Unified Facilities Criteria (UFC): 3-600-01, Design: Fire Protection Engineering For Facilities

1.2.2. International Building Code (IBC) for fire resistance requirements, allowable floor area, building height limitations and building separation distance requirements, except as modified by UFC 3-600-01.

1.2.3. National Fire Protection Association (NFPA) 101 Life Safety Code (latest edition), for building egress and life safety and applicable criteria in UFC 3-600-01.

1.2.4. ADA and ABA Accessiblity Guidelines. For Buildings and Facilities See Section 01 10 00, Paragraph 3 for facility specific criteria.

1.3. Occupancy Classification
IBC chapters 3 and 4

1.4. Construction Type
IBC chapter 6

1.5. Area Limitations
IBC chapter 5, table 503

1.6. Allowable Floor Areas
IBC section 503, 505

1.7. Allowable area increases
IBC section 506, 507

1.8. Maximum Height of Buildings
IBC section 504

1.9. Fire-resistive substitution

1.10. Occupancy Separations
IBC table 302.3.2

1.11. Fire Resistive Requirements

1.11.1. Exterior Walls - [_____] hour rating, IBC table 601, 602

1.11.2. Interior Bearing walls - [_____] hour rating

1.11.3. Structural frame - [_____] hour rating

1.11.4. Permanent partitions - [_____] hour rating

1.11.5. Shaft enclosures - [_____] hour rating

1.11.6. Floors & Floor-Ceilings - [_____] hour rating

1.11.7. Roofs and Roof Ceilings - [_____] hour rating

1.12. Automatic Sprinklers and others used to determine the need for automatic Extinguishing Equipment, Extinguishing Systems, Foam Systems, Standpipe

1.12.1. UFC 3-600-01, chapters 4 and 6 systems, wet chemical systems, etc. State which systems are required and to what criteria they will be designed.

1.12.2. UFC 3-600-01, Appendix B Occupancy Classification. Note the classification for each room. This may be accomplished by classifying the entire building and noting exceptions for rooms that differ (E.g. The entire building is Light Hazard except boiler room and storage rooms which are [_____], etc.)

1.12.3. UFC 3-600-01, Chapter 3 Sprinkler Design Density, Sprinkler Design Area, Water Demand for Hose Streams (supply pressure and source requirements).

1.12.4. UFC 3-600-01, Chapter 4 Coverage per sprinkler head. Extended coverage sprinkler heads are not permitted.

1.12.5. Available Water Supply. Provide the results of the water flow tests showing the available water supply static pressure and residual pressure at flow. Based on this data and the estimated flow and pressure required for the sprinkler system, determine the need for a fire pump.

1.12.6. NFPA 13, Para. 8.16.4.6.1. Provide backflow preventer valves as required by the local municipality, authority, or water purveyor. Provide a test valve located downstream of the backflow preventer for flow testing the backflow preventer at full system demand flow. Route the discharge to an appropriate location outside the building.

1.13. Kitchen Cooking Exhaust Equipment

Describe when kitchen cooking exhaust equipment is provided for the project. Type of extinguishing systems for the equipment should be provided. per NFPA 96. Show all interlocks with manual release switches, fuel shutoff valves, electrical shunt trips, exhaust fans, and building alarms.

1.14. Portable Fire Extinguishers, fire classification and travel distance. per NFPA 10

1.15. Enclosure Protection and Penetration Requirements. - Opening Protectives and Through Penetrations

1.15.1. IBC Section712, 715 and Table 715.3. Mechanical rooms, exit stairways, storage rooms, janitor [_____] hour rating. IBC Table 302.1.1

1.15.2. Fire Blocks, Draft Stops, Through Penetrations and Opening Protectives

1.16. Fire Dampers. Describe where fire dampers and smoke dampers are to be used (IBC Section 716 and NFPA 90A}. State whether isolation smoke dampers are required at the air handler.

1.17. Detection Alarm and Communication. UFC 3-600-01, (Chapter 5); NFPA 101 para. 3.4 (chapters 12-42); NFPA 72

1.18. Mass Notification. Describe building/facility mass notification system (UFC 4-021-01) type and type of base-wide mass notification/communication system. State whether the visible notification appliances will be combined with the fire alarm system or kept separate. (Note: Navy has taken position to combine visible notification appliances with fire alarm).

1.19. Interior Finishes (classification). NFPA 101.10.2.3 and NFPA 101.7.1.4

1.20. Means of Egress

1.20.1. Separation of Means of Egress, NFPA 101 chapters 7 and 12-42; NFPA101.7.1.3

1.20.2. Occupant Load, NFPA101.7.3.1 and chapters 12-42.

1.20.3. Egress Capacity (stairs, corridors, ramps and doors) NFPA101.7.3.3

1.20.4. Number of Means of Egress, NFPA101.7.4 and chapters 12-42.

1.20.5. Dead end limits and Common Path of Travel, NFPA 101.7.5.1.6 and chapters 12-42.

1.20.6. Accessible Means of Egress (for accessible buildings), NFPA101.7.5.4

1.20.7. Measurement of Travel Distance to Exits, NFPA101.7.6 and chapters 12-42.

1.20.8. Discharge from Exits, NFPA101.7.7.2

1.20.9. Illumination of Means of Egress, NFPA101.7.8

1.20.10. Emergency Lighting, NFPA101.7.9

1.20.11. Marking of Means of Egress, NFPA101.7.10

1.21. Elevators, UFC 3-600-01, Chapter 6; IBC and ASME A17.1 - 2000,(Safety Code for Elevators and Escalators)

1.22. Accessibility Requirements, ADA and ABA Accessibility Guidelines for Buildings and Facilities

1.23. Certification of Fire Protection and Life Safety Code Requirements. (Note: Edit the Fire team membership if necessary). Preparers of this document certify the accuracy and completeness of the Fire Protection and Life Safety features for this project in accordance with the attached completed form(s).

1.24. Designer of Record. Certification of Fire protection and Life Safety Code Requirements. (Note: Edit the Fire team members if necessary). Preparers of this document certify the accuracy and completeness of the Fire Protection and Life Safety features of this project.

Fire Protection Engineer of Record:

_____

Signature and Stamp

Date

OR

Architect of Record:

_____

Signature and Stamp

Date

Mechanical Engineer of Record:

_____

Signature and Stamp

Date

Electrical Engineer of Record:

_____

Signature/Date

ATTACHMENT E
LEED SUBMITTALS

LEED Credit Paragraph	Contractor Check Here if Credit is Claimed	**LEED-NC v2.2 Submittals (OCT09REV)**		Provide for Credit Audit Only		Date Submitted (to be filled in by Contractor)	Government Reviewer's Use (OCT09REV)
PAR		**FEATURE**	**DUE AT**		**REQUIRED DOCUMENTATION**	**DATE**	**REV**
GENERAL							
	GENERAL - All calculations shall be in accordance with LEED 2.2 Reference Guide.						
	GENERAL: Obtain excel version of this spreadsheet at http://en.sas.usace.army.mil/enWeb, "Engineering Criteria". OCT09REV						
	GENERAL - For all credits, narrative/comments may be added to describe special circumstances or considerations regarding the project's credit approach.						
	GENERAL - Include all required LEED drawings indicated below in contract drawings with applicable discipline drawings, labeled For Reference Only.						
	NOTE: Each submittal indicated with "**" differs from LEED certified project submittals by either having a different due date or being an added submittal not required by GBCI. OCT09REV						
	OCT09REV GENERAL - Audit documentation may include but is not limited to what is indicated in this table.						
			Closeout		List of all Final Design submittals revised after final design to reflect actual closeout conditions. Revised Final Design submittals. - OR - Statement confirming that no changes have been made since final design that effect final design submittal documents.		Proj Engr (PE)
CATEGORY 1 - SUSTAINABLE SITES							
SSPR1		Construction Activity Pollution Prevention (PREREQUISITE)	**Final Design		List of drawings and specifications that address the erosion control, particulate/dust control and sedimentation control measures to be implemented.		CIV
OCT09REV			**Final Design		Delineation and labeling of "LEED Project site boundary" on site plan.		CIV
			**Final Design		Narrative that indicates which compliance path was used (NPDES or Local standards) and describes the measures to be implemented on the project. If a local standard was followed, provide specific information to demonstrate that the local standard is equal to or more stringent than the NPDES program.		CIV
SS1		Site Selection	Final Design		Statement confirming that project does not meet any of the prohibited criteria.		CIV
OCT09REV			**Final Design		Delineation and labeling of "LEED Project site boundary" on site plan.		CIV
			Final Design	X	LEED Site plan drawing that shows all proposed development, line depicting boundary of all bodies of water and/or wetlands within 100 feet of project boundary and a line depicting 5' elevation above 100 year flood line that falls within project boundary. Not required if neither condition applies.		CIV
SS2		Development Density & Community Connectivity	Final Design		Option 1: LEED Site vicinity plan showing project site and surrounding development. Show density boundary or note drawing scale.		CIV
OCT09REV			**Final Design		Delineation and labeling of "LEED Project site boundary" on site plan.		CIV
			Final Design		Option 1: Table indicating, for project site and all surrounding sites within density radius (keyed to site vicinity plan), site area and building area. Project development density calculation. Density radius calculation. Development density calculation within density radius.		CIV
			Final Design		Option 2: LEED Site vicinity plan showing project site, the 1/2 mile community radius, pedestrian walkways and the locations of the residential development(s) and Basic Services surrounding the project site.		CIV
			Final Design		Option 2: List (including business name and type) of all Basic Services facilities within the 1/2 mile radius, keyed to site vicinity plan.		CIV
SS3		Brownfield Redevelopment	Final Design		Narrative describing contamination and the remediation activities included in project. Include statement indicating how site was determined to be a brownfield.		CIV
OCT09REV			**Final Design		Delineation and labeling of "LEED Project site boundary" on site plan.		CIV
SS4.1		Alternative Transportation: Public Transportation Access	Final Design		Statement indicating which option for compliance applies. State whether public transportation is existing or proposed and, if proposed, cite source of this information.		CIV
OCT09REV			**Final Design		Delineation and labeling of "LEED Project site boundary" on site plan.		CIV
			Final Design		Option 1: LEED Site vicinity plan showing project site, mass transit stops and pedestrian path to them with path distance noted.		CIV
			Final Design		Option 2: LEED Site vicinity plan showing project site, bus stops and pedestrian path to them with path distance noted.		CIV
SS4.2		Alternative Transportation: Bicycle Storage & Changing Rooms	Final Design		FTE calculation. Bicycle storage spaces calculation. Shower/changing facilities calculation.		CIV
			Final Design		List of drawings that show the location(s) of bicycle storage areas. Statement indicating distance from building entrance.		CIV
			Final Design		List of drawings that show the location(s) of shower/changing facilities and, if located outside the buiding, statement indicating distance from building entrance.		ARC
SS4.3		Alternative Transportation: Low Emitting & Fuel Efficient Vehicles	Final Design		Statement indicating which option for compliance applies. FTE calculation. Statement indicating total parking capacity of site.		CIV
OCT09REV			**Final Design		Delineation and labeling of "LEED Project site boundary" on site plan.		CIV
			Final Design		Option 1: Low-emission & fuel-efficient vehicle calculation.		CIV

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PAR		**FEATURE**	**DUE AT**		**REQUIRED DOCUMENTATION**	**DATE**	**REV**
			Final Design		Option 1: List of drawings and specification references that show location and number of preferred parking spaces for low-emission & fuel-efficient vehicles and signage.		CIV
			Final Design		Option 1: Statement indicating quantity, make, model and manufacturer of low-emission & fuel-efficient vehicles to be provided. Statement confirming vehicles are zero-emission or indicating ACEEE vehicle scores.		CIV
			Final Design		Option 2: Low-emission & fuel-efficient vehicle parking calculation.		CIV
			Final Design		Option 2: List of drawings and specification references that show location and number of preferred parking spaces and signage.		CIV
			Final Design		Option 3: Low-emission & fuel-efficient vehicle refueling station calculation.		CIV
			Final Design		Option 3: List of drawings and specifications indicating location and number of refueling stations, fuel type and fueling capacity for each station for an 8-hour period.		CIV
			Closeout	X	Option 3: Construction product submittals indicating what was provided and confirming compliance with respect to fuel type and fueling capacity for each station for an 8-hour period.		CIV
SS4.4		Alternative Transportation: Parking Capacity	Final Design		Statement indicating which option for compliance applies.		CIV
OCT09REV			**Final Design		Delineation and labeling of "LEED Project site boundary" on site plan.		CIV
			Final Design		Option 1: Preferred parking calculation including number of spaces required, total provided, preferred spaces provided and percentage.		CIV
			Final Design		Option 2: FTE calculation. Preferred parking calculation including number of spaces provided, preferred spaces provided and percentage.		CIV
			Final Design		Options 1 and 2: List of drawings and specification references that show location and number of preferred parking spaces and signage.		CIV
			Final Design		Option 3: Narrative indicating number of spaces required and provided and describing infrastructure and support programs with description of project features to support them.		CIV
SS5.1		Site Development: Protect or Restore Habitat	**Final Design		Option 1: List of drawing and specification references that convey site disturbance limits.		CIV
OCT09REV			**Final Design		Delineation and labeling of "LEED Project site boundary" on site plan.		CIV
			**Final Design		Option 2: LEED site plan drawing that delineates boundaries of each preserved and restored habitat area with area (sf) noted for each.		CIV
			**Final Design		Option 2: Percentage calculation of restored/preserved habitat to total site area. List of drawings and specification references that convey restoration planting requirements.		CIV
SS5.2		Site Development: Maximize Open Space	Final Design		Option 2: LEED site plan drawing delineating boundary of vegetated open space adjacent to building with areas of building footprint and designated open space noted.		CIV
OCT09REV			**Final Design		Delineation and labeling of "LEED Project site boundary" on site plan.		CIV
SS6.1		Stormwater Design: Quantity Control	Final Design		Statement indicating which option for compliance applies.		CIV
OCT09REV			**Final Design		Delineation and labeling of "LEED Project site boundary" on site plan.		CIV
			Final Design		Option 1: Indicate pre-development and post-development runoff rate(cfs) and runoff quantity (cf) -OR - Narrative describing site conditions, measures and controls to be implemented to prevent excessive stream velocities and erosion.		CIV
			Final Design		Option 2: Indicate pre-development and post-development runoff rate(cfs) and runoff quantity (cf). Indicate percent reduction in each.		CIV
SS6.2		Stormwater Design: Quality Control	Final Design		For non-structural controls, list all BMPs used and, for each, describe the function of the BMP and indicate the percent annual rainfall treated. List all structural controls and, for each, describe the pollutant removal and indicate the percent annual rainfall treated.		CIV
OCT09REV			**Final Design		Delineation and labeling of "LEED Project site boundary" on site plan.		CIV
SS7.1		Heat Island Effect: Non-Roof	**Final Design		LEED site plan drawing indicating locations and quantities of each paving type, including areas of shaded pavement. Percentage calculation indicating percentage of reflective/shaded/open grid area.		CIV
OCT09REV			**Final Design		Delineation and labeling of "LEED Project site boundary" on site plan.		CIV
SS7.2		Heat Island Effect: Roof	Final Design		Option 1: Percentage calculation indicating percentage of SRI compliant roof area. List of drawings and specification references that convey SRI requirements and roof slopes.		ARC

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PAR		**FEATURE**	**DUE AT**		**REQUIRED DOCUMENTATION**	**DATE**	**REV**
			Final Design OCT09REV		Option 1: List of specified roof materials indicating, for each, product type, manufacturer, product name and identification if known, SRI value and roof slope. OCT09REV		ARC
			**Closeout OCT09REV		Option 1: List of installed roof materials indicating, for each, manufacturer, product name and identification, SRI value and roof slope.		PE
			Closeout	X	Option 1: Manufacturer published product data or certification confirming SRI		PE
			Final Design		Option 2: Percentage calculation indicating percentage of vegetated roof area.		ARC
			Final Design		Option 3: Combined reflective and green roof calculation.		ARC
			Final Design OCT09REV		Option 3: List of specified roof materials indicating, for each, product type, manufacturer, product name and identification if known, SRI value and roof slope. OCT09REV		
			**Closeout OCT09REV		Option 3: List of installed roof materials indicating, for each, manufacturer, product name and identification, SRI value and roof slope.		PE
			Closeout	X	Option 3: Manufacturer published product data or certification confirming SRI		PE
SS8		Light Pollution Reduction	Final Design		Interior Lighting: List of drawings and specification references that convey interior lighting requirements (location and type of all installed interior lighting, location of non-opaque exterior envelope surfaces, allowing confirmation that maximum candela value from interiorfixtures does not intersect non-opaque building envelope surfaces). - OR - List of drawings and specification references that show automatic lighting controls that turn off non-essential lighting during non-business hours.		ELEC
OCT09REV			**Final Design		Delineation and labeling of "LEED Project site boundary" on site plan.		ELEC
			Final Design		Exterior Lighting: List of drawings and specification references that convey exterior lighting requirements (location and type of all site lighting and building façade/landscape lighting).		ELEC
			Final Design		Exterior Site Lighting Power Density (LPD): Tabulation for exterior site lighting indicating, for each location identification or description, units of measure, area or distance of the location, actual LPD using units consistent with ASHRAE 90.1, and the ASHRAE allowable LPD for that type of location. Percentage calculation of actual versus allowable LPD for all site lighting.		ELEC
			Final Design		Exterior Building Facade/Landscape Lighting Power Density (LPD): Tabulation for exterior building facade/landscape lighting indicating, for each location identification or description, units of measure, area or distance of the location, actual LPD using units consistent with ASHRAE 90.1, and the ASHRAE allowable LPD for that type of location. Percentage calculation of actual versus allowable LPD for all building facade/landscape lighting.		ELEC
			Final Design		Exterior Lighting IESNA Zone: Indicate which IESNA zone is applicable to the project.		ELEC
			Final Design		Exterior Lighting Site Lumen table indicating, for each fixture type, quantity installed, initial lamp lumens per luminaire, initial lamp lumens above 90 degrees from Nadir, total lamp lumens and total lamp lumens above 90 degrees. Percentage of site lamp lumens above 90 degrees from nadir to total lamp lumens.		ELEC
			Final Design		Exterior Lighting Narrative describing analysis used for addressing requirements for light trespass at site boundary and beyond.		ELEC
CATEGORY 2 – WATER EFFICIENCY							
WE1.1		Water Efficient Landscaping: Reduce by 50%	Final Design		Statement indicating which option for compliance applies.		CIV
OCT09REV			**Final Design		Delineation and labeling of "LEED Project site boundary" on site plan.		CIV
			Final Design		Calculation indicating, for baseline and design case, total water applied, total potable water applied, total non-potable water applied. Design case percent potable water reduction. If nonpotable water is used, indicate source of nonpotable water.		CIV
			Final Design		List of landscape plan drawings.		CIV
			Final Design		Narrative describing landscaping and irrigation design strategies, including water use calculation methodology used to determine savings and, if non-potable water is used, specific information about source and available quantity.		CIV
WE1.2		Water Efficient Landscaping: No Potable Water Use or No Irrigation	Same as WE1.1		Same as WE1.1		CIV
WE2		Innovative Wastewater Technologies	Final Design		Statement confirming which option for compliance applies.		MEC

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			Final Design		Statement confirming which occupancy breakdown applies (default or special). For special occupancy breakdown, indicate source and explanation for ratio.		MEC
			Final Design		Occupancy calculation including male/female numbers for FTEs, visitors, students, customers, residential and other type occupants/users		MEC
			Final Design		Statement indicating percent of male restrooms with urinals. Statement indicating annual days of operation.		MEC
			Final Design		Baseline flush fixture calculation spreadsheet indicating, for each fixture type, gender, flush rate, daily uses per person for each occupant type identified in occupancy calculation and annual baseline flush fixture water usage.		MEC
			Final Design		Design case flush fixture calculation spreadsheet indicating, for each fixture type, gender, fixture manufacturer, fixture model number, flush rate, percent of occupants using this fixture type, daily uses per person for each occupant type identified in occupancy calculation and annual design case flush fixture water usage.		MEC
			Final Design		Option 1: If onsite non-potable water is used, identify source(s), indicate annual quantity from each source and indicate total annual quantity from all onsite non-potable water sources.		MEC
			Final Design		Option 1: Summary calculation indicating baseline annual water consumption, design case annual water consumption, non-potable annual water consumption and total percentage annual water savings.		MEC
			Final Design		Option 2: Statement confirming on-site treatment of all generated wastewater to tertiary standards and all treated wastewater is either infiltrated or used on-site.		MEC
			Final Design		Option 2: List of drawing and specification references that convey design of on-site wastewater treatment features.		CIV
			Final Design		Option 2: On-site water treatment quantity calculation indicating all on-site wastewater source(s), annual quantity treated, annual quantity infiltrated and annual quantity re-used on site from each source and totals for annual quantity treated, annual quantity infiltrated and annual quantity re-used on site from all sources.		CIV
			Final Design		Option 2: Wastewater summary calculation indicating design case annual flush fixture water usage, annual on-site water treatment and percentage sewage convyance reduction.		MEC
			Final Design		Narrative describing project strategy for reduction of potable water use for sewage conveyance, including specific information on reclaimed water usage and treated wastewater usage.		MEC
WE3.1		Water Use Reduction: 20% Reduction	Final Design		Statement confirming which occupancy breakdown applies (default or special). For special occupancy breakdown, indicate source and explanation for ratio.		MEC
			Final Design		Occupancy calculation including male/female numbers for FTEs, visitors, students, customers, residential and other type occupants/users		MEC
			Final Design		Statement indicating percent of male restrooms with urinals. Statement indicating annual days of operation.		MEC
			Final Design		Baseline flush fixture calculation spreadsheet indicating, for each fixture type, gender, flush rate, daily uses per person for each occupant type identified in occupancy calculation and annual baseline flush fixture water usage.		MEC
			Final Design		Design case flush fixture calculation spreadsheet indicating, for each fixture type, gender, fixture manufacturer, fixture model number, flush rate, percent of occupants using this fixture type, daily uses per person for each occupant type identified in occupancy calculation and annual design case flush fixture water usage.		MEC
			Closeout	X	Manufacturer published product data or certification confirming fixture water usage.		PE
WE3.2		Water Use Reduction: 30% Reduction	Same as WE3.1		Same as WE3.1		MEC
CATEGORY 3 – ENERGY AND ATMOSPHERE							
EAPR1		Fundamental Commissioning of the Building Energy Systems (PREREQUISITE)	**Final Design		**Owner's Project Requirements document		ALL
			**Final Design		**Basis of Design document for commissioned systems		MEC, ELEC
			**Final Design		**Commissioning Plan		MEC, ELEC

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			Closeout		Statement confirming all commissioning requirements have been incorporated into construction documents.		PE
			Closeout		Commissioning Report		PE
EAPR2		Minimum Energy Performance (PREREQUISITE)	Final Design		Statement listing the mandatory provisions of ASHRAE 90.1 that project meets relative to compliance with this prerequisite and indicating which compliance path was used.		MEC ELEC ARC
EAPR3		Fundamental Refrigerant Management (PREREQUISITE)	Final Design		Statement indicating which option for compliance applies.		MEC
			Final Design		Option 2: Narrative describing phase out plan, including specific information on phase out dates and refrigerant quantities.		MEC
EA1		Optimize Energy Performance	Final Design		Statement indicating which compliance path option applies.		MEC
			Final Design		Option 1: Statement confirming simulation software capabilities and confirming assumptions and methodology.		MEC
			Final Design		Option 1: General information including simulation program, principal heating source, percent new construction and renovation, weather file, climate zone and Energy Star Target Finder score.		MEC
			Final Design		Option 1: Space summary listing, for each building use, the conditioned area, unconditioned area and total area and include total area for each category		MEC
			Final Design		Option 1: List of all simulation output advisory message data and show difference between baseline and proposed design		MEC
			Final Design		Option 1: Comparison summary for energy model inputs including description of baseline and design case energy model inputs, showing both by element type		MEC
			Final Design		Option 1: Energy type summary lising, for each energy type, utility rate description, units of energy and units of demand		MEC
			Final Design		Option 1: Statement indicating whether project uses on-site renewable energy. If yes, list all sources and indicate, for each source, backup energy type, annual energy generated, rated capacity and renewable energy cost		MEC
			Final Design		Option 1: If analysis includes exceptional calculation methods, statement describing how exceptional calculation measure cost savings is determined		MEC
			Final Design		Option 1: If analysis includes exceptional calculation methods, for each exceptional calculation method indicate energy types and, for each energy type, annual energy savings, annual cost savings, and brief descriptive narrative		MEC
			Final Design		Option 1: Baseline performance rating compliance report table indicating, for each energy end use, whether it is a process load, energy type, annual and peak energy demand for all four orientations. For each orientation indicate total annual energy use for each orientation and total annual process energy use.		MEC
			Final Design		Option 1: Baseline energy cost table indicating, for each energy type, annual cost for all four orientations and building total energy cost.		MEC
			Final Design		Option 1: Proposed Design performance rating compliance report table indicating, for each energy end use, whether it is a process load, energy type, annual and peak energy demand, baseline annual and peak energy demand and percent savings. Indicate total annual energy use and total annual process energy use for both proposed design and baseline and percent savings.		MEC
			Final Design		Option 1: Proposed Design energy cost table indicating, for each energy type, annual cost for all four orientations and building total energy cost.		MEC
			Final Design		Option 1: Energy cost and consumption by energy type report indicating, for each energy type, proposed design and baseline annual use and annual cost, percent savings annual use and annual cost. Indicate for renewable energy annual energy generated and annual cost. Indicate exceptional calculations annual energy savings and annual cost savings. Indicate building total annual energy use, annual energy cost for proposed design and baseline and indicate percent savings annual energy use and annual energy cost.		MEC

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			Final Design		Option 1: Compliance summaries from energy simulation software. If software does not produce compliance summaries provide output summaries and example input summaries for baseline and proposed design supporting data in the tables. Output summaries must include simulated energy consumption by end use and total energy use and cost by energy type. Example input summaries should represent most common systems and must include occupancy, use pattern, assumed envelope component sizes and descriptive features and assumed mechanical equipment types and descriptive features		MEC
			Final Design		Option 1: Energy rate tariff from project energy providers (only if not using LEED Reference Guide default rates)		MEC
EA2.1		On-Site Renewable Energy	Final Design		Statement indicating which compliance path option applies.		ELEC
			Final Design		List all on-site renewable energy sources and indicate, for each source, backup energy type, annual energy generated, rated capacity and renewable energy cost. Indicate total annual energy use (all sources), total annual energy cost (all sources) and percent renewable energy cost.		ELEC MEC
			Final Design		Option 1: Indicate, for renewable energy,proposed design total annual energy generated and annual cost.		ELEC MEC
			Final Design		Option 2: Indicate CBECS building type and building gross area. Provide the following CBECS data: median annual electrical intensity, median annual non-electrical fuel intensity, average electric energy cost, average non-electric fuel cost, annual electric energy use and cost, annual non-electric fuel use and cost.		ELEC MEC
			Final Design		Option 2: Narrative describing renewable systems and explaining calculation method used to estimate annual energy generated, including factors influencing performance.		ELEC MEC
EA2.2		On-Site Renewable Energy	Same as EA2.1		Same as EA2.1		ELEC MEC
EA2.3		On-Site Renewable Energy	Same as EA2.1		Same as EA2.1		ELEC MEC
EA3		Enhanced Commissioning	**Final Design		**Owner's Project Requirements document (OPR)		ALL
			**Final Design		**Basis of Design document for commissioned systems (BOD)		ELEC MEC
			**Final Design		**Commissioning Plan		ELEC MEC
			Closeout		Statement confirming all commissioning requirements have been incorporated into construction documents.		PE
			Closeout		**Commissioning Report		PE
			**Final Design		Statement by CxA confirming Commissioning Design Review		
			Closeout		Statement by CxA confirming review of Contractor submittals for compliance with OPR and BOD		PE
			Closeout		**Systems Manual		PE
			Closeout		Statement by CxA confirming completion of O&M staff and occupant training		PE
			Closeout		**Scope of work for post-occupancy review of building operation, including plan for resolution of outstanding issues		PE
			**Predesign		Statement confirming CxA qualifications and contractual relationships relative to work on this project, demonstrating that CxA is an independent third party.		MEC
EA4		Enhanced Refrigerant Management	Final Design		Refrigerant impact calculation table with all building data and calculation values as shown in LEED 2.2 Reference Guide Example Calculations		MEC
			Final Design		Narrative describing any special circumstances or explanatory remarks OCT09REV		
			Closeout	X	Cut sheets highlighting refrigerant data for all HVAC components.		PE
EA5		Measurement & Verification	Closeout		Statement indicating which compliance path option applies.		PE
			Closeout		Measurement and Verification Plan		PE
			Closeout		**Scope of work for post-occupancy implementation of M&V plan		PE
EA6		Green Power	Closeout		Statement indicating which compliance path option applies.		PE
			Closeout		Option 1: Indicate proposed design total annual electric energy usage		PE
			Closeout		Option 2: Indicate actual total annual electric energy usage		PE
			Closeout		Option 3: Calculation indicating building type, total gross area, median electrical intensity and annual electric energy use		PE

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PAR		**FEATURE**	**DUE AT**		**REQUIRED DOCUMENTATION**	**DATE**	**REV**
			Closeout		Green power provider summary table indicating, for each purchase type, provider name, annual quantity green power purchased and contract term. Indicate total annual green power use and indicate percent green power		PE
			Closeout		Narrative describing how Green Power or Green Tags are purchased		PE
CATEGORY 4 – MATERIALS AND RESOURCES							
MRPR1		Storage & Collection of Recyclables (PREREQUISITE)	Final Design		Statement confirming that recycling area will accommodate recycling of plastic, metal, paper, cardboard and glass. Narrative indicating any other materials addressed and coordination with pickup.		ARC
MR1.1		Building Reuse: Maintain 75% of Existing Walls, Floors & Roof	**Final Design		If project includes a building addition, confirm that area of building addition does not exceed 2x the area of the existing building.		ARC
			**Final Design		Spreadsheet listing, for each building structural/envelope element, the existing area and reused area. Total percent reused.		ARC
MR1.2		Building Reuse: Maintain 95% of Existing Walls, Floors & Roof	Same as MR1.1		Same as MR1.1		ARC
MR1.3		Building Reuse: Maintain 50% of Interior Non-Structural Elements	**Final Design		If project includes a building addition, confirm that area of building addition does not exceed 2x the area of the existing building.		ARC
			**Final Design		Spreadsheet listing, for each building interior non-structural element, the existing area and reused area. Total percent reused.		ARC
MR2.1		Construction Waste Management: Divert 50% From Disposal	**Preconstruction		Waste Management Plan		PE
			**Construction Quarterly and Closeout		Spreadsheet calculations indicating material description, disposal/diversion location (or recycling hauler), weight, total waste generated, total waste diverted, diversion percentage		PE
					OCT09REV		
			**Construction Quarterly and Closeout		Receipts/tickets for all items on spreadsheet		PE
MR2.2		Construction Waste Management: Divert 75% From Disposal	Same as MR2.1		Same as MR2.1		PE
MR3.1		Materials Reuse: 5%	Closeout		Statement indicating total materials value and whether default or actual.		PE
			Closeout		Spreadsheet calculations indicating, for each reused/salvaged material, material description, source or vendor, cost. Total reused/salvaged materials percentage.		PE
MR3.2		Materials Reuse: 10%	Same as MR3.1		Same as MR3.1		PE
MR4.1		Recycled Content: 10% (post-consumer + 1/2 pre-consumer)	Closeout		Statement indicating total materials value and whether default or actual.		PE
			Closeout		Spreadsheet calculations indicating, for each recycled content material, material name/description, manufacturer, cost, post-consumer recycled content percent, pre-consumer recycled content percent, source of recycled content data. Total post-consumer content materials cost, total pre-consumer content materials cost, total combined recycled content materials cost, recycled content materials percentage.		PE
			Final Design or NLT Preconstruction		**Purchasing Plan consisting of spreadsheet indicated above, filled in with estimated quantities to show strategy for achieving goal. OCT09REV		PE
			Closeout	X	Manufacturer published product data or certification, confirming recycled content percentages in spreadsheet		PE
MR4.2		Recycled Content: 20% (post-consumer + 1/2 pre-consumer)	Same as MR4.1		Same as MR4.1		PE
MR5.1		Regional Materials:10% Extracted, Processed & Manufactured Regionally	Closeout		Statement indicating total materials value and whether default or actual.		PE
			Closeout		Spreadsheet calculations indicating, for each regional material, material name/description, manufacturer, cost, percent compliant, harvest distance, manufacture distance, source of manufacture and harvest location data. Total regional materials cost, regional materials percentage.		PE
			Preconstruction OCT09REV		**Purchasing Plan consisting of spreadsheet indicated above, filled in with estimated quantities to show strategy for achieving goal. OCT09REV		PE
			Closeout	X	Manufacturer published product data or certification confirming regional material percentages in spreadsheet		PE

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MR5.2		Regional Materials:20% Extracted, Processed & Manufactured Regionally	Same as MR5.1		Same as MR5.1		PE
MR6		Rapidly Renewable Materials	Closeout		Statement indicating total materials value and whether default or actual.		PE
			Closeout		Spreadsheet calculations indicating, for each rapidly renewable material, material name/description, manufacturer, cost, rapidly renewable content percent, rapidly renewable product value. Total rapidly renewable product value, rapidly renewable materials percentage.		PE
			Final Design OCT09REV		**Purchasing Plan consisting of spreadsheet indicated above, filled in with estimated quantities to show strategy for achieving goal. OCT09REV		ARC
			Closeout	X	Manufacturer published product data or certification confirming rapidly renewable material percentages in spreadsheet		PE
MR7		Certified Wood	Closeout		Statement indicating total materials value and whether default or actual.		PE
			Closeout		Spreadsheet calculations indicating, for each certified wood material, material name/description, vendor, cost, wood component percent, certified wood percent of wood component, FSC chain of custody certificate number. Total certified wood product value, certified wood materials percentage.		PE
			Final Design or NLT Preconstruction		**Purchasing Plan consisting of spreadsheet indicated above, filled in with estimated quantities to show strategy for achieving goal. OCT09REV		PE
			Closeout	X	Vendor invoices, FSC chain of custody certificates and anufacturer published product data or certification confirming all certified wood materials percentages in spreadsheet.		PE
CATEGORY 5 – INDOOR ENVIRONMENTAL QUALITY							
EQPR1		Minimum IAQ Performance (PREREQUISITE)	Final Design		Statement indicating which option for compliance applies, stating applicable criteria/requirement, and confirming that project has been designed to meet the applicable requirements.		MEC
			Final Design		Narrative describing the project's ventilation design, including specifics about fresh air intake volumes and special considerations.		MEC
EQPR2		Environmental Tobacco Smoke (ETS) Control (PREREQUISITE)	Final Design		Statement indicating which option for compliance applies, stating applicable criteria/requirement, and confirming that project has been designed to meet the applicable requirements.		ARC
			Final Design		List of drawing and specification references that convey conformance to applicable requirements (signage, exhaust system, room separation details, etc).		ARC
EQ1		Outdoor Air Delivery Monitoring	Final Design		Statement indicating which option for compliance applies and confirming that project has been designed to meet the applicable requirements.		MEC
			Final Design		List of drawing and specification references that convey conformance to applicable requirements.		MEC
			Final Design		Narrative describing the project's ventilation design and CO2 monitoring system, including specifics about monitors, operational parameters and setpoints.		MEC
			Closeout	X	Cut sheets for CO2 monitoring system.		PE
EQ2		Increased Ventilation	Final Design		Statement indicating which option for compliance applies and confirming that project has been designed to meet the applicable requirements.		MEC
			Final Design		Narrative describing the project's ventilation design, including specifics about zone fresh air intake volumes and demonstrating compliance.		MEC
			Final Design		Option 2: Narrative describing design method used for determining natural ventilation design, including calculation methodology/model results and demonstrating compliance.		MEC
			Final Design		List of drawing and specification references that convey conformance to applicable requirements.		MEC
EQ3.1		Construction IAQ Management Plan: During Construction	**Preconstruction		Construction IAQ Management Plan		PE
			Closeout		Statement confirming whether air handling units were operated during construction		PE
			Closeout		Dated jobsite photos showing examples of IAQ management plan practices being implemented. Label photos to indicate which practice they demonstrate. Minimum one photo of each practice at each building.		PE
			Closeout		Spreadsheet indicating, for each filter installed during construction, the manufacturer, model number, MERV rating, location installed, and if it was replaced immediately prior to occupancy.		PE
EQ3.2		Construction IAQ Management Plan: Before Occupancy	**Preconstruction		Construction IAQ Management Plan		PE

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PAR		**FEATURE**	**DUE AT**		**REQUIRED DOCUMENTATION**	**DATE**	**REV**
			Closeout		Statement indicating which option for compliance applies and confirming that required activities have occurred that meet the applicable requirements.		PE
			Closeout		Option 1a: Narrative describing the project's flushout process, including specifics about temperature, airflow and duration, special considerations (if any) and demonstrating compliance.		PE
			Closeout		Option 1b: Narrative describing the project's pre-occupancy and post-occupancy flushout processes, including specifics about temperature, airflow and duration, special considerations (if any) and demonstrating compliance.		PE
			Closeout		Option 2: Narrative describing the project's IAQ testing process, including specifics about contaminants tested for, locations, remaining work at time of test, retest parameters and special considerations (if any).		PE
			Closeout		Option 2: IAQ testing report demonstrating compliance.		PE
EQ4.1		Low Emitting Materials: Adhesives & Sealants	Closeout		Spreadsheet indicating, for each applicable indoor adhesive, sealant and sealant primer used, the manufacturer, product name/model number, VOC content, LEED VOC limit, and source of VOC data.		PE
			Closeout		Spreadsheet indicating, for each applicable indoor aerosol adhesive, the manufacturer, product name/model number, VOC content, LEED VOC limit, and source of VOC data - OR - Statement confirming no indoor aerosol adhesives were used for the project.		PE
			Closeout	X	Manufacturer published product data or certification confirming material VOCs in spreadsheet		PE
EQ4.2		Low Emitting Materials: Paints & Coatings	Closeout		Spreadsheet indicating, for each applicable indoor paint and coating used, the manufacturer, product name/model number, VOC content, LEED VOC limit, and source of VOC data.		PE
			Closeout		Spreadsheet indicating, for each applicable indoor anti-corrosive/anti-rust paint and coating used, the manufacturer, product name/model number, VOC content, LEED VOC limit, and source of VOC data - OR - Statement confirming no indoor anti-corrosive/anti-rust paints were used for the project .		PE
			Closeout	X	Manufacturer published product data or certification confirming material VOCs in spreadsheet		PE
EQ4.3		Low Emitting Materials: Carpet Systems	Closeout		Spreadsheet indicating, for each indoor carpet used, the manufacturer, product name/model number, if it meets LEED requirement (yes/no) and source of LEED compliance data.		PE
			Closeout		Spreadsheet indicating, for each indoor carpet cushion used, the manufacturer, product name/model number, if it meets LEED requirement (yes/no) and source of LEED compliance data - OR - Statement confirming no indoor carpet cushion was used for the project.		PE
			Closeout	X	Manufacturer published product data or certification confirming material CRI label in spreadsheet		PE
EQ4.4		Low Emitting Materials: Composite Wood & Agrifiber Products	Closeout		Spreadsheet indicating, for each indoor composite wood and agrifiber product used, the manufacturer, product name/model number, if it contains added urea formaldehyde (yes/no) and source of LEED compliance data.		PE
			Closeout	X	Manufacturer published product data or certification confirming material urea formaldehyde in spreadsheet		PE
EQ5		Indoor Chemical & Pollutant Source Control	Closeout OCT09REV		Spreadsheet indicating, for each permanent entryway system used, the manufacturer, product name/model number and description of system. Roll-up and carpet systems requiring weekly cleaning to earn this credit are not a permitted option for Army projects.		PE
			Final Design		List of drawing and specification references that convey locations and installation methods for entryway systems.		ARC
			Final Design		Spreadsheet indicating, for each chemical use area, the room number, room name, description of room separation features (walls, floor/ceilings, openings) and pressure differential from surrounding spaces with doors closed - OR - Statement confirming that project includes no chemical use areas and that no hazardous cleaning materials are needed for building maintenance.		ARC MEC
			Final Design		If project includes chemical use areas: List of drawing and specification references that convey locations of chemical use areas, room separation features and exhaust system.		ARC MEC
			Closeout OCT09REV		If project includes chemical use areas: Spreadsheet indicating, for AHUs/mechanical ventilation equipment serving occupied areas, the manufacturer, model number, MERV rating, location installed, and if it was replaced immediately prior to occupancy (yes/no) - OR - Statement confirming that project does not use mechanical equipment for ventilation of occupied areas.		PE

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PAR		**FEATURE**	**DUE AT**		**REQUIRED DOCUMENTATION**	**DATE**	**REV**
EQ6.1		Controllability of Systems: Lighting	Final Design		Calculation indicating total number of individual workstations, number of workstations with individual lighting controls and the percentage of workstations with individual lighting controls.		ELEC
			Final Design		For each shared multi-occupant space, provide a brief description of lighting controls.		ELEC
			Final Design		Narrative describing lighting control strategy, including type and location of individual controls and type and location of controls in shared multi-occupant spaces.		ELEC
EQ6.2		Controllability of Systems: Thermal Comfort	Final Design		Calculation indicating total number of individual workstations, number of workstations with individual thermal comfort controls and the percentage of workstations with individual thermal comfort controls.		MEC
			Final Design		For each shared multi-occupant space, provide a brief description of thermal comfort controls.		MEC
			Final Design		Narrative describing thermal comfort control strategy, including type and location of individual and shared multi-occupant controls.		MEC
EQ7.1		Thermal Comfort: Design	Final Design		Design criteria spreadsheet indicating, for spring, summer, fall and winter, maximum indoor space design temperature, minimum indoor space design temperature and maximum indoor space design humidity.		MEC
			Final Design		Narrative describing method used to establish thermal comfort control conditions and how systems design addresses the design criteria, including compliance with the referenced standard.		MEC
EQ7.2		Thermal Comfort: Verification	Final Design		Narrative describing the scope of work for the thermal comfort survey, including corrective action plan development		MEC
EQ8.1		Daylight & Views: Daylight 75% of Spaces	Final Design		Option 1: Table indicating all regularly occupied spaces with space area and space area with 2% daylighting factor. Sum of regularly occupied areas and regularly occupied areas with 2% daylighting factor. Percentage calculation of areas with 2% daylighting factor to total regularly occupied areas.		ARC
			Final Design		Option 1: Glazing factor calculation table		ARC
			Final Design		Option 2: Simulation model method, software and output data		ARC
			Final Design		Option 2: Table indicating all regularly occupied spaces with space area, space area with minimum 25 footcandles daylighting illumination, and method of providing glare control. Sum of regularly occupied areas and regularly occupied areas with 25 fc daylighting. Percentage calculation of areas with 25 fc daylighting to total regularly occupied areas.		ARC
			Final Design		For all occupied spaces excluded from the calculation, provide narrative indicating reasons for excluding the space.		ARC
			Final Design		List of drawing and specification references that convey exterior glazed opening head and sill heights and glazing performance properties.		ARC
			Closeout	X	Manufacturer published product data or certification confirming glazing Tvis in spreadsheet		PE
EQ8.2		Daylight & Views: Views for 90% of Spaces	Final Design		Table indicating all regularly occupied spaces with space area and space area with access to views. Sum of regularly occupied areas and regularly occupied areas with access to views. Percentage calculation of areas with views to total regularly occupied areas.		ARC
			Final Design		For all occupied spaces excluded from the calculation, provide narrative indicating reasons for excluding the space.		ARC
			Final Design		LEED Floor plan drawings showing line of sight diagramming of views areas in each regularly occupied space. List of drawing/specification references that convey exterior glazed opening head and sill heights.		ARC
CATEGORY 6 – FACILITY DELIVERY PROCESS							
IDc1.1		Innovation in Design	Final Design OCT09REV		Narrative decribing intent, requirement for credit, project approach to the credit. List of drawings and specification references that convey implementation of credit. All other documentation that validates claimed credit.		
IDc1.2		Innovation in Design	Final Design OCT09REV				
IDc1.3		Innovation in Design	Final Design OCT09REV				
IDc1.4		Innovation in Design	Final Design OCT09REV				
IDc2		LEED Accredited Professional	Final Design		Narrative indicating name of LEED AP, company name of LEED AP, description of LEED AP's role and responsiblilities in the project.		ARC

ATTACHMENT F
Version 07-07-2010

BUILDING INFORMATION MODELING REQUIREMENTS

1.0 Section 1 - Submittal Format

1.1. Design Deliverables. Develop all designs using Building Information Modeling (BIM) and Computer Aided Design (CAD) software. Design submittal drawings shall be 22x34 size, suitable for half-size scaled reproduction.

2.0 Section 2 – Design Requirements

2.1. BIM Model and Facility Data. Contractor shall use BIM application(s) and software(s) to develop project designs. "Facility Data" is defined as associated intelligent attribute data. The "Model" is defined as 3D graphics that includes Facility Data and output as described in the paragraph 'Output' below. Contractors will use the Model to produce accurate Construction Documents. For each Center of Standardization (CoS) facility type included in this project, all BIM Models and associated Facility Data shall be submitted in Bentley Systems BIM BIM v8 with associated USACE Bentley BIM Workspace (which includes specific standard BIM libraries and definitions). This Workspace can be downloaded from the CAD/BIM Technology Center. [Where available, the workspace will be specific to this CoS Facility Standard Design. The Contractor will be provided a baseline multi-discipline BIM Project Model for the CoS Facility Standard Design type, where such a model exists (for the purposes of site adaptation).] The USACE Bentley BIM Workspace is dependent on specific versions of the Bentley BIM suite of products and only the versions of the software that are listed in the Contractor instructions included with the USACE BIM Workspace are permitted to be used.

2.1.1. Reference. Refer to ERDC TR-06-10, "U.S. Army Corps of Engineers Building Information Modeling Road Map" from the CAD/BIM Technology Center website for more information on the USACE BIM implementation goals.

2.2. Drawings. Deliver CAD files used for the creation of the Construction Documents Drawings per requirements in Section 01 33 16, the criteria of the USACE Omaha District District, and as noted herein. Specification of a CAD file format for these Drawings does not limit which BIM application(s) or software(s) may be used for project development and execution.

2.2.1. IFC Support. The Contractor's selected BIM application(s) and software(s) must support the IFC (Industry Foundation Class - see www.iai-tech.org). Submit any deviations from or additions to the IFC property sets for any new spaces, systems, and equipment for Government approval.

2.2.2. Submittal Requirements. BIM submittals shall be fully interoperable, compatible, and editable with the Bentley BIM tools. Use the specified version of the USACE Bentley BIM Workspace and conform to the requirements of **Sections 3 and 4 below**.

2.2.3. BIM Project Execution Plan.

2.2.3.1. Develop a BIM Project Execution Plan ("Plan" or "PxP") documenting the BIM and analysis technologies selected for the Project Model (integrated with the AEC CAD Standard) from concept development through As-Builts as a design, production, coordination, construction, and documentation tool and the collaborative process by which it shall be executed. See Section 7 for additional guidance on developing the Plan.

2.2.4. BIM Requirements..

2.2.4.1. Facility Data. Develop the Facility Data consisting of a set of intelligent elements for the Model (e.g., doors, air handlers, electrical panels). This Facility Data shall include all material definitions and attributes that are necessary for the Project facility design and construction. Additional data in support of Section 6 Contractor Electives is encouraged.

2.2.4.2. Model Content. The Model and Facility Data shall include, at a minimum, the requirements of Section 4 below.

2.2.4.3. Model Granularity. Models may vary in level of detail for individual elements within a model, but at a minimum must include all features that would be included on a quarter inch (1/4" = 1'0") scaled drawing (e.g. at least 1/16th, 1/8th and 1/4th), or appropriately scaled civil drawings.

2.2.4.4. Output. Submitted CAD drawings (e.g., plans, elevations, sections, schedules, details, etc.) shall be derived (commonly known as extractions, views or sheets) and maintained from the submitted Model and Facility Data.

2.3. Quality Control. Implement quality control (QC) parameters for the Model, including:

2.3.1. Model Standards Checks. QC validation used to ensure that the Project Facility Data set has no undefined, incorrectly defined or duplicated elements. Report non-compliant elements and corrective action plan to correct non-compliant elements. Provide the government with detailed justification and request government approval for any non-compliant element which the contractor proposes to be allowed to remain in the Model.

2.3.2. CAD Standards Checks. QC checking performed to ensure that the fonts, dimensions, line styles, levels and other construction document formatting issues are followed per the A/E/C CADD Standard.

2.3.3. Other Parameters. Develop such other QC parameters as Contractor deems appropriate for the Project and provide to the Government for concurrence.

2.4. Design and Construction Reviews. Perform design and construction reviews at each submittal stage under Section 3 to test the Model, including:

2.4.1. Visual Checks. Checking to ensure the design intent has been followed and that there are no unintended elements in the Model.

2.4.2. Interference Management Checks. Locate conflicting spatial data in the Model where two elements are occupying the same space. Log hard interferences (e.g., mechanical vs. structural or mechanical vs. mechanical overlaps in the same location) and soft interferences, (e.g., conflicts regarding equipment clearance, service access, fireproofing, insulation) in a written report and resolve.

2.4.3. IFC Coordination View. Provide an IFC Coordination View in IFC Express format for all deliverables. Provide exported property set data for all IFC supported named building elements.

2.4.4. Other Parameters. Develop such other Review parameters as the Contractor deems appropriate for the Project and provide to the Government for concurrence..

3.0 Section 3 – Design Stage Submittal Requirements

3.1. General Submittal Requirements.

3.1.1. Provide submittals in compliance with BIM Project Execution Plan deliverables at stages as described hereinafter.

3.1.2. At each Stage in Paragraphs 3.3 through 3.6, provide a Contractor-certified written report confirming that consistency checks as identified in Paragraphs 2.3 and 2.4 have been completed. This report shall be discussed as part of the review process and shall address cross-discipline interferences, if any.

3.1.3. At each Stage in Paragraphs 3.3 through 3.6, provide the Government with:

- The Model, Facility Data, Workspace and CAD Data files in native Bentley BIM/CAD.

- A 3-D interactive review format of the Model in Bentley Navigator, Autodesk Navisworks, Adobe 3D PDF 7.0 (or later), Google Earth KMZ or other format per Plan requirements. The file format for reviews can change between submittals.

- A list of all submitted files. The list should include a description, directory, and file name for each file submitted. For all CAD sheets, include the sheet title and sheet number. Identify files that have been produced from the submitted Model and Facility Data.

3.1.4. The Government will confirm acceptability of all submittals identified in Section 3 in coordination with the USACE Omaha District BIM Manager

3.2. Initial Design Conference Submittal.

3.2.1. Submit a digital copy of the Plan where, in addition to Paragraph 3.1.4, the USACE Geographic District BIM Manager will coordinate with the USACE CoS BIM Manager to confirm acceptability of the Plan or advise as to additional processes or activities necessary to be incorporated.

3.2.2. Within thirty (30) days after the approval of the Plan, conduct a demonstration to review the Plan for clarification, and to verify the functionality of Model technology workflow and processes. If modifications are required, the Contractor shall complete the modifications and resubmit the Plan and perform subsequent demonstration for Government acceptance. There will be no payment for design or construction until the Plan is acceptable to the Government. The Government may also withhold payment for design and construction for unacceptable performance in executing the approved Plan.

3.3. Interim Design Submittals.

3.3.1. BIM and CAD Data. The Model shall include the requirements identified in Paragraph 2.2.4 as applicable to the Interim Design package(s).

3.4. Final Design Submissions and Design Complete Submittals.

3.4.1. BIM and CAD Data. The Model shall include the requirements identified in Paragraph 2.2.4. Acceptance according to Paragraph 3.1.4 is required before commencement of construction, as described in Paragraph 3.7.6 of Section 01 33 16.

3.5. Construction Submittals – Over-The-Shoulder Progress Reviews. Periodic quality control meetings or construction progress review meetings shall include quality control reviews on the implementation and use of the Model, including interference management and design change tracking information.

3.6. Final As-Builts BIM and CAD Data Submittal. Submit the final Model, Facility Data, and CAD files reflecting as-built conditions for Government Approval, as specified in Section 01 78 02.00 10, PROJECT CLOSEOUT.

4.0 Section 4 – BIM Model Minimum Requirements and Output

4.1. General Provisions. The deliverable Model shall be developed to include the systems described below as they would be built and the processes of installing them, and to reflect final as-built conditions. The deliverable model at the interim design stage and at the final design stage ("released for construction") shall be developed to include as many of the systems described below as are necessary and appropriate at that design stage.

4.2. Architectural/Interior Design. The Architectural systems Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a quarter inch (1/4"=1'0") scaled drawing. Additional minimum Model requirements include:

4.2.1. Spaces. The Model shall include spaces defining accurate net square footage and net volume, and holding data for the room finish schedule for including room names and numbers. Include Programmatic Information provided by the Government or validated program to verify design space against programmed space, using this information to validate area quantities.

4.2.2. Walls and Curtain Walls. Each wall shall be depicted to the exact height, length, width and ratings (thermal, acoustic, fire) to properly reflect wall types. The Model shall include all walls, both interior and exterior, and the necessary intelligence to produce accurate plans, sections and elevations depicting these design elements.

4.2.3. Doors, Windows and Louvers. Doors, windows and louvers shall be depicted to represent their actual size, type and location. Doors and windows shall be modeled with the necessary intelligence to produce accurate window and door schedules.

4.2.4. Roof. The Model shall include the roof configuration, drainage system, penetrations, specialties, and the necessary intelligence to produce accurate plans, building sections and generic wall sections where roof design elements are depicted.

4.2.5. Floors. The floor slab shall be developed in the structural Model and then referenced by the architectural Model for each floor of the Project building.

4.2.6. Ceilings. All heights and other dimensions of ceilings, including soffits, ceiling materials, or other special conditions shall be depicted in the Model with the necessary intelligence to produce accurate plans, building sections and generic wall sections where ceiling design elements are depicted.

4.2.7. Vertical Circulation. All continuous vertical components (i.e., non-structural shafts, architectural stairs, handrails and guardrails) shall be accurately depicted and shall include the necessary intelligence to produce accurate plans, elevations and sections in which such design elements are referenced.

4.2.8. Architectural Specialties and Woodwork. All architectural specialties (i.e., toilet room accessories, toilet partitions, grab bars, lockers, and display cases) and woodwork (i.e., cabinetry and counters) shall be accurately depicted with the necessary intelligence to produce accurate plans, elevations and sections in which such design elements are referenced.

4.2.9. Signage. The Model shall include all signage and the necessary intelligence to produce accurate plans and schedules.

4.2.10. Schedules. Provide door, window, hardware sets using BHMA designations, flooring, wall finish, and signage schedules from the Model, indicating the type, materials and finishes used in the design.

4.3. Furniture. The furniture systems Model may vary in level of detail for individual elements within a Model, but at a minimum must include all features that would be included on a quarter inch (1/4”=1’0”) scaled drawing, and have necessary intelligence to produce accurate plans. Representation of furniture elements is to be 2D. Contractor may provide a minimal number of 3D representations as examples. Examples of furniture include, but are not limited to, desks, furniture systems, seating, tables, and office storage.

4.3.1. Furniture Coordination. Furniture that makes use of electrical, data or other features shall include the necessary intelligence to produce coordinated documents and data.

4.4. Equipment. The Model may vary in level of detail for individual elements within a Model. Equipment shall be depicted to meet layout requirements with the necessary intelligence to produce accurate plans and minimum schedules depicting their configuration. Examples of equipment include but are not limited to copiers, printers, refrigerators, ice machines and microwaves.

4.4.1. Schedules. Provide furniture and equipment schedules from the model indicating the materials, finishes, mechanical, and electrical requirements.

4.5. Structural. The structural systems Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a quarter inch (1/4”=1’0”) scaled drawing. Additional minimum Model requirements include:

4.5.1. Foundations. All necessary foundation and/or footing elements, with necessary intelligence to produce accurate plans and elevations

4.5.2. Floor Slabs. Structural floor slabs shall be depicted, including all necessary recesses, curbs, pads, closure pours, and major penetrations accurately depicted.

4.5.3. Structural Steel. All steel columns, primary and secondary framing members, and steel bracing for the roof and floor systems (including decks), including all necessary intelligence to produce accurate structural steel framing plans and related building/wall sections.

4.5.4. Cast-in-Place Concrete. All walls, columns, and beams, including necessary intelligence to produce accurate plans and building/wall sections depicting cast-in-place concrete elements.

4.5.5. Expansion/Contraction Joints. Joints shall be accurately depicted.

4.5.6. Stairs. The structural Model shall include all necessary openings and framing members for stair systems, including necessary intelligence to produce accurate plans and building/wall sections depicting stair design elements.

4.5.7. Shafts and Pits. The structural Model shall include all necessary shafts, pits, and openings, including necessary intelligence to produce accurate plans and building/wall sections depicting these design elements.

4.6. Mechanical. The mechanical systems Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a quarter inch (1/4”=1’0”) scaled drawing. Small diameter (less than 1-1/2” NPS) field-routed piping is not required in the model. Additional minimum Model requirements include:

4.6.1. HVAC. All necessary heating, ventilating, air-conditioning and specialty equipment, including air distribution ducts for supply, return, and ventilation and exhaust ducts, including control system, registers, diffusers, grills and hydronic baseboards with necessary intelligence to produce accurate plans, elevations, building/wall sections and schedules.

4.6.1.1. Mechanical Piping. All necessary piping and fixture layouts, and related equipment, including necessary intelligence to produce accurate plans, elevations, building/wall sections, and schedules.

4.6.2. Plumbing. All necessary plumbing piping and fixture layouts, floor and area drains, and related equipment, including necessary intelligence to produce accurate plans, elevations, building/wall sections, riser diagrams, and schedules.

4.6.3. Equipment Clearances. All HVAC and Plumbing equipment clearances shall be modeled for use in interference management and maintenance access requirements.

4.6.4. Elevator Equipment. The Model shall include the necessary equipment and control system, including necessary intelligence to produce accurate plans, sections and elevations depicting these design elements.

4.7. Electrical/Telecommunications. The electrical systems Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a quarter inch (1/4”=1’0”) scaled drawing. Small diameter (less than 1-1/2”Ø) field-routed conduit is not required in the model. Additional minimum Model requirements include:

4.7.1. Interior Electrical Power and Lighting. All necessary interior electrical components (i.e., lighting, receptacles, special and general purpose power receptacles, lighting fixtures, panelboards, cable trays and control systems), including necessary intelligence to produce accurate plans, details and schedules. Lighting and power built into furniture/equipment shall be modeled.

4.7.2. Special Electrical Systems. All necessary special electrical components (i.e., security, Mass Notification, Public Address, nurse call and other special occupancies, and control systems), including necessary intelligence to produce accurate plans, details and schedules.

4.7.3. Grounding Systems. Grounding Systems. All necessary grounding components (i.e., lightning protection systems, static grounding systems, communications grounding systems, bonding), including necessary intelligence to produce accurate plans, details and schedules.

4.7.4. Communications. All existing and new communications service controls and connections, both above ground and underground with necessary intelligence to produce accurate plans, details and schedules. Cable tray routing shall be modeled without detail of cable contents.

4.7.5. Exterior Building Lighting. All necessary exterior lighting with necessary intelligence to produce accurate plans, elevations and schedules. The exterior building lighting Model shall include all necessary lighting, relevant existing and proposed support utility lines and equipment required with necessary intelligence to produce accurate plans, details and schedules.

4.7.6. Equipment Clearances. The model shall incorporate and define all electrical and communications working spaces, clearances, and required access

4.8. Fire Protection. The fire protection system Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a quarter inch (1/4”=1’0”) scaled drawing. Additional minimum Model requirements include:

4.8.1. Fire Protection System. All relevant fire protection components (i.e., branch piping, sprinkler heads, fittings, drains, pumps, tanks, sensors, control panels) with necessary intelligence to produce accurate plans, elevations, building/wall sections, riser diagrams, and schedules. All fire protection piping shall be modeled.

4.8.2. Fire Alarms. Fire alarm/mass notification devices and detection system shall be indicated with necessary intelligence to produce accurate plans depicting them.

4.9. Civil. The civil Model may vary in level of detail for individual elements, but at a minimum must include all features that would be included on a one inch (1”=100’) scaled drawing. Additional minimum Model requirements include:

4.9.1. Terrain (DTM). All relevant site conditions and proposed grading, including necessary intelligence to produce accurate Project site topographical plans and cross sections.

4.9.2. Drainage. All existing and new drainage piping, including upgrades thereto, including necessary intelligence to produce accurate plans and profiles for the Project site.

4.9.3. Storm Water and Sanitary Sewers. All existing and new sewer structures and piping, including upgrades thereto, on the Project site with necessary connections to mains or other distribution points as appropriate, including necessary intelligence to produce accurate plans and profiles for the Project site.

4.9.4. Utilities. All necessary new utilities connections from the Project building(s) to the existing or newly-created utilities, and all existing above ground and underground utility conduits, including necessary intelligence to produce accurate plans and site-sections.

4.9.5. Roads and Parking. All necessary roadways and parking lots or parking structures, including necessary intelligence to produce accurate plans, profiles and cross-sections.

5.0 Section 5 - Ownership and Rights in Data

5.1. Ownership. The Government has ownership of and rights at the date of Closeout Submittal to all CAD files, BIM Model, and Facility Data developed for the Project in accordance with FAR Part 27, clauses incorporated in Section 00 72 00, Contract Clauses and Special Contract Requirement 1.14 GOVERNMENT RE-USE OF DESIGN (Section 00 73 00). The Government may make use of this data following any deliverable.

6.0 Section 6 – Contractor Electives

6.1. Applicable Criteria. If the Contractor elected to include one or more of the following features as an elective in its accepted contract proposal for additional credit during the source selection, as described in the proposal submission requirements and evaluation criteria, the following criteria are requirements, as applicable to those elective feature(s).

6.2. COBIE Compliance. The Model and Facility Data for the Project shall fulfill Construction Operations Building Information Exchange (COBIE) requirements as defined by the Whole Building Design Guide organization, including all requirements for the indexing and submission of Portable Document Format (PDF) and other appropriate file formats that would otherwise be printed and submitted in compliance with Project operations and maintenance handover requirements.

6.3. Project Scheduling using the Model. In the BIM Execution Plan and during the Preliminary BIM Execution Plan Review, provide an overview of the use of BIM in the development and support of the project construction schedule.

6.3.1. Submittal Requirements. During the Submittal stages, the Contractor shall deliver the construction schedule with information derived from the Model.

6.3.1.1. Construction Submittals – Over-The-Shoulder Progress Reviews. Periodic quality control meetings or construction progress review meetings shall include quality control reviews on the implementation and use of the Model for project scheduling.

6.4. Cost Estimating. In the BIM Execution Plan and during the Preliminary BIM Execution Plan Review, provide an overview of the use of BIM in the development and support of cost estimating requirements, or other applications such as cost analysis and estimate validation.

6.4.1. Submittal Requirements. During the Submittal stages, the Contractor shall deliver cost estimating information derived from the Model.

6.4.2. Project completion. At project completion, the Contractor shall provide an MII (Micro Computer Aided Cost Estimating System Generation II) Cost Estimate which follows the USACE Cost Engineering Military Work Breakdown System (WBS), a modified Uniformat, to at least the sub-systems level and uses quantity information supplied directly from BIM output to the maximum extent possible, though other "Gap" quantity information will be included as necessary for a complete and accurate cost estimate.

6.4.2.1. Sub system level extracted quantities from the BIM for use within the estimate shall be provided according to how detailed line items or tasks should be installed/built so that accurate costs can be developed and/or reflected. Therefore, when developing a BIM, the designer shall be cognizant of what tasks need to be separated appropriately at the beginning stages of model development, such as tasks done on the first floor versus the same task on higher floors that will be more labor intensive and therefore need to have a separate quantity and be priced differently. Tasks and their extracted quantities from the BIM shall be broken done by their location (proximity in the structure) as well as the complexity of its installation.

6.4.2.2. At all design stages it shall be understood that BIM output as described in this document will not generate all quantities that are necessary in order to develop a complete and accurate cost estimate of the project based on the design. An example of this would be plumbing that is less than 1.5" diameter and therefore not expected to be modeled due to granularity; this information is commonly referred to as The Gap. Quantities from The Gap and their associated costs shall be included in the final project actual cost estimates as well.

6.5. Other Analyses and Reports. Structural, energy and efficiency, EPACT 2005 & EISA 2007, lighting design, daylighting, electrical power, psychrometric processing, shading, programming, LEED, fire protection, code compliance, Life Cycle Cost, acoustic, plumbing.

7.0 Section 7 – BIM Project Execution Plan Template

7.1. Contractors will utilize the latest version of the USACE BIM PROJECT EXECUTION PLAN (USACE PxP) Template to develop an acceptable Plan. The template can be downloaded from the CAD/BIM Technology Center website.

ATTACHMENT G
DESIGN SUBMITTAL DIRECTORY AND SUBDIRECTORY FILE ARRANGEMENT

Organize electronic design submittal files in a subdirectory/file structure in accordance with the following table. The Contractor may suggest a slightly different structure, subject to the discretion of the government.

Design Submittal Directory and Subdirectory File Arrangement.

Directory	Sub-Directory	Sub-Directory or Files	Files
Submittal/Package Name	Narratives	PDF file or files with updated design narrative for each applicable design discipline	
	Drawings	PDF (subdirectory)	Single PDF file with all applicable drawing sheets - bookmarked by sheet number and name
		BIM (subdirectory) See Attachment F.	BIM project folder (with files) per the USACE Workspace. Include an Excel drawing index file with each drawing sheet listed by sheet #, name and corresponding dgn file name (Final Design & Design Complete only)
	Design Analysis & Calculations	Individual PDF files containing design analysis and calculations for each discipline applicable to the submittal	
		PDF file with Fire Protection and Life Safety Code Review checklist	
	LEED	PDF file with updated Leed Check List	
		PDF file or files with LEED Templates for each point with applicable documentation included in each file.	
		LEED SUBMITTALS	
	Energy Analysis	PDF with baseline energy consumption analysis	
		PDF with actual building energy consumption analysis	
	Specifications	Single PDF file with table of contents and all applicable specifications sections.	
		Submittal Register (Final Design & Design Complete submittal only)	
	Design Quality Control	PDF file or files with DQC checklist(s) and/or statements	
	Building Rendering(s)	PDF file of rendering for each building type included in contract (Final Design & Design Complete).	

SECTION 01 45 01.10
QUALITY CONTROL SYSTEM (QCS)

1.0 GENERAL

1.1. CORRESPONDENCE AND ELECTRONIC COMMUNICATIONS

1.2. QCS SOFTWARE

1.3. SYSTEM REQUIREMENTS

1.4. RELATED INFORMATION

1.5. CONTRACT DATABASE

1.6. DATABASE MAINTENANCE

1.7. IMPLEMENTATION

1.8. DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM

1.9. MONTHLY COORDINATION MEETING

1.10. NOTIFICATION OF NONCOMPLIANCE

1.0 GENERAL

The Government will use the Resident Management System for Windows (RMS) to assist in its monitoring and administration of this contract. The Contractor shall use the Government-furnished Construction Contractor Module of RMS, referred to as QCS, to record, maintain, and submit various information throughout the contract period. The Contractor module, user manuals, updates, and training information can be downloaded from the RMS web site. This joint Government-Contractor use of RMS and QCS will facilitate electronic exchange of information and overall management of the contract. QCS provides the means for the Contractor to input, track, and electronically share information with the Government in the following areas:

- Administration
- Finances
- Quality Control
- Submittal Monitoring
- Scheduling
- Import/Export of Data
- Request for Information
- Accident Reporting
- Safety Exposure Manhours

1.1. CORRESPONDENCE AND ELECTRONIC COMMUNICATIONS

For ease and speed of communications, both Government and Contractor will exchange correspondence and other documents in electronic format. Correspondence, pay requests and other documents comprising the official contract record shall also be provided in paper format, with signatures and dates where necessary. Paper documents will govern, in the event of discrepancy with the electronic version.

1.2. OTHER FACTORS

Particular attention is directed to Contract Clause, "Schedules for Construction Contracts", Contract Clause, "Payments", Section 01 32 01.00 10, PROJECT SCHEDULE, Section 01 33 00, SUBMITTAL PROCEDURES, and Section 01 45 04.00 10, CONTRACTOR QUALITY CONTROL, which have a direct relationship to the reporting to be accomplished through QCS. Also, there is no separate payment for establishing and maintaining the QCS database; all costs associated therewith shall be included in the contract pricing for the work.

1.3. QCS SOFTWARE

QCS is a Windows-based program that can be run on a stand-alone personal computer or on a network. The Government will make available the QCS software to the Contractor after award of the construction contract. Prior to the Pre-Construction Conference, the Contractor shall be responsible to download, install and use the latest version of the QCS software from the Government's RMS Internet Website. Upon specific justification and request by the Contractor, the Government can provide QCS on CD-ROM. Any program updates of QCS will be made available to the Contractor via the Government RMS Website as they become available.

1.4. SYSTEM REQUIREMENTS

The following listed hardware and software is the minimum system configuration that the Contractor shall have to run QCS:

(a) Hardware

- IBM-compatible PC with 1000 MHz Pentium or higher processor
- 256 MB RAM for workstation / 512+ MB RAM for server
- 1 GB hard drive disk space for sole use by the QCS system
- Compact disk (CD) Reader, 8x speed or higher
- SVGA or higher resolution monitor (1024 x 768, 256 colors)
- Mouse or other pointing devise
- Windows compatible printer (Laser printer must have 4+ MB of RAM)
- Connection to the Internet, minimum 56K BPS

(b) Software

- MS Windows 2000 or higher
- MS Word 2000 or newer
- Latest version of : Netscape Navigator, Microsoft Internet Explorer, or other browser that supports HTML 4.0 or higher
- Electronic mail (E-mail), MAPI compatible
- Virus protection software that is regularly upgraded with all issued manufacturer's updates

1.5. RELATED INFORMATION

1.5.1. QCS USER GUIDE

After contract award, the Contractor shall download instructions for the installation and use of QCS from the Government RMS Internet Website. In case of justifiable difficulties, the Government will provide the Contractor with a CD-ROM containing these instructions.

1.5.2. CONTRACTOR QUALITY CONTROL (CQC) TRAINING

The use of QCS will be discussed with the Contractor's QC System Manager during the mandatory CQC Training class.

1.6. CONTRACT DATABASE

Prior to the pre-construction conference, the Government will provide the Contractor with basic contract award data to use for QCS. The Government will provide data updates to the Contractor as needed, generally by using the government's SFTP repository built into QCS import/export function. These updates will generally consist of submittal reviews, correspondence status, QA comments, and other administrative and QA data.

1.7. DATABASE MAINTENANCE

The Contractor shall establish, maintain, and update data for the contract in the QCS database throughout the duration of the contract. The Contractor shall establish and maintain the QCS database at the Contractor's site office. Data updates to the Government, e.g., daily reports, submittals, RFI's, schedule updates, payment requests, etc. shall be submitted using the government's SFTP repository built into QCS export function. If permitted by the Contracting Officer, email or CD-ROM may be used instead (see Paragraph DATA SUBMISSION VIA CD-ROM). The QCS database typically shall include current data on the following items:

1.7.1. ADMINISTRATION

1.7.1.1. Contractor Information

The database shall contain the Contractor's name, address, telephone numbers, management staff, and other required items. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver Contractor administrative data in electronic format.

1.7.1.2. Subcontractor Information

The database shall contain the name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor must be listed separately for each trade to be performed. Each subcontractor/trade shall be assigned a unique Responsibility Code, provided in QCS. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver subcontractor administrative data in electronic format.

1.7.1.3. Correspondence

All Contractor correspondence to the Government shall be identified with a serial number. Correspondence initiated by the Contractor's site office shall be prefixed with "S". Letters initiated by the Contractor's home (main)

office shall be prefixed with "H". Letters shall be numbered starting from 0001. (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C".

All Requests For Information (RFI) shall be exchanged using the Built-in RFI generator and tracker in QCS.

1.7.1.4. Equipment

The Contractor's QCS database shall contain a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates.

1.7.1.5. Management Reporting

QCS includes a number of reports that Contractor management can use to track the status of the project. The value of these reports is reflective of the quality of the data input, and is maintained in the various sections of QCS. Among these reports are: Progress Payment Request worksheet, QA/QC comments, Submittal Register Status, Three-Phase Inspection checklists.

1.7.2. FINANCES

1.7.2.1. Pay Activity Data

The QCS database shall include a list of pay activities that the Contractor shall develop in conjunction with the design and construction schedule. The sum of all pay activities shall be equal to the total contract amount, including modifications. Pay activities shall be grouped by Contract Line Item Number (CLIN), and the sum of the activities shall equal the amount of each CLIN. The total of all CLINs equals the Contract Amount.

1.7.2.2. Payment Requests

All progress payment requests shall be prepared using QCS. The Contractor shall complete the payment request worksheet prompt payment certification, and payment invoice in QCS. The work completed under the contract, measured as percent or as specific quantities, shall be updated at least monthly. After the update, the Contractor shall generate a payment request report using QCS. The Contractor shall submit the payment request, prompt payment certification, and payment invoice with supporting data by using the government's SFTP repository built into QCS export function. If permitted by the Contracting Officer, E-mail or a CD-ROM may be used. A signed paper copy of the approved payment request is also required, which shall govern in the event of discrepancy with the electronic version.

1.7.3. Quality Control (QC)

QCS provides a means to track implementation of the 3-phase QC Control System, prepare daily reports, identify and track deficiencies, document progress of work, and support other contractor QC requirements. The Contractor shall maintain this data on a daily basis. Entered data will automatically output to the QCS generated daily report. The Contractor shall provide the Government a Contractor Quality Control (CQC) Plan within the time required in Section 01 45 04.00 10, CONTRACTOR QUALITY CONTROL. Within seven calendar days of Government acceptance, the Contractor shall submit a QCS update reflecting the information contained in the accepted CQC Plan: schedule, pay activities, features of work, submittal register, QC requirements, and equipment list.

1.7.3.1. Daily Contractor Quality Control (CQC) Reports

QCS includes the means to produce the Daily CQC Report. The Contractor may use other formats to record basic QC data. However, the Daily CQC Report generated by QCS shall be the Contractor's official report. Data from any supplemental reports by the Contractor shall be summarized and consolidated onto the QCS-generated Daily CQC Report. Daily CQC Reports shall be submitted as required by Section 01 45 04.00 10, CONTRACTOR QUALITY CONTROL. Reports shall be submitted electronically to the Government within 24 hours after the date covered by the report. The Contractor shall also provide the Government a signed, printed copy of the daily CQC report.

1.7.3.2. Deficiency Tracking

The Contractor shall use QCS to track deficiencies. Deficiencies identified by the Contractor will be numerically tracked using QC punch list items. The Contractor shall maintain a current log of its QC punch list items in the QCS database. The Government will log the deficiencies it has identified using its QA punch list items. The Government's QA punch list items will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of both QC and QA punch list items.

1.7.3.3. QC Requirements

The Contractor shall develop and maintain a complete list of QC testing and required structural and life safety special inspections required by the International Code Council (ICC), transferred and installed property, and user training requirements in QCS. The Contractor shall update all data on these QC requirements as work progresses, and shall promptly provide this information to the Government via QCS.

1.7.3.4. Three-Phase Control Meetings

The Contractor shall maintain scheduled and actual dates and times of preparatory and initial control meetings in QCS.

1.7.3.5. Labor and Equipment Hours

The Contractor shall log labor and equipment exposure hours on a daily basis. This data will be rolled up into a monthly exposure report.

1.7.3.6. Accident/Safety Tracking Reporting

The Government will issue safety comments, directions, or guidance whenever safety deficiencies are observed. The Government's safety comments will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of the safety comments. In addition, the Contractor shall utilize QCS to advise the Government of any accidents occurring on the jobsite. This supplemental entry is not to be considered as a substitute for completion of mandatory notification and reports, e.g., ENG Form 3394 and OSHA Form 300.

1.7.3.7. Features of Work

The Contractor shall include a complete list of the features of work in the QCS database. A feature of work may be associated with multiple pay activities. However, each pay activity (see subparagraph "Pay Activity Data" of paragraph "Finances") will only be linked to a single feature of work.

1.7.3.8. Hazard Analysis

The Contractor shall use QCS to develop a hazard analysis for each feature of work included in its CQC Plan. The hazard analysis shall address any hazards, or potential hazards, that may be associated with the work

1.7.4. Submittal Management

The Government will provide the submittal register form, ENG Form 4288, SUBMITTAL REGISTER, in electronic format. The Contractor and Designer of Record (DOR) shall develop and maintain a complete list of all submittals, including completion of all data columns and shall manage all submittals. Dates on which submittals are received and returned by the Government will be included in its export file to the Contractor. The Contractor shall use QCS to track and transmit all submittals. ENG Form 4025, submittal transmittal form, and the submittal register update, ENG Form 4288, shall be produced using QCS. QCS and RMS will be used to update, store and exchange submittal registers and transmittals, but will not be used for storage of actual submittals.

1.7.5. Schedule

The Contractor shall develop a design and construction schedule consisting of pay activities, in accordance with Section 01 32 01.00 10, PROJECT SCHEDULE, as applicable. This schedule shall be input and maintained in the QCS database either manually or by using the Standard Data Exchange Format (SDEF) (see Section 01 32 01.00 10 PROJECT SCHEDULE). The updated schedule data shall be included with each pay request submitted by the Contractor.

1.7.5.1. Import/Export of Data

QCS includes the ability to export Contractor data to the Government and to import submittal register and other Government-provided data from RMS, and schedule data using SDEF.

1.8. IMPLEMENTATION

Contractor use of QCS as described in the preceding paragraphs is mandatory. The Contractor shall ensure that sufficient resources are available to maintain its QCS database, and to provide the Government with regular database updates. QCS shall be an integral part of the Contractor's management of quality control.

1.9. DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM

The Government-preferred method for Contractor's submission of QCS data is by using the government's SFTP repository built into QCS export function.. Other data should be submitted using E-mail with file attachment(s). For locations where this is not feasible, the Contracting Officer may permit use of CD-ROM for data transfer. Data on CDs shall be exported using the QCS built-in export function. If used, CD-ROMs will be submitted in accordance with the following:

1.9.1. File Medium

The Contractor shall submit required data on CD-ROMs. They shall conform to industry standards used in the United States. All data shall be provided in English.

1.9.2. Disk Or Cd-Rom Labels

The Contractor shall affix a permanent exterior label to each diskette and CD-ROM submitted. The label shall indicate in English, the QCS file name, full contract number, contract name, project location, data date, name and telephone number of person responsible for the data.

1.9.3. File Names

The files will be automatically named by the QCS software. The naming convention established by the QCS software shall not be altered in any way by the Contractor.

1.10. MONTHLY COORDINATION MEETING

The Contractor shall update the QCS database each workday. At least monthly, the Contractor shall generate and submit an export file to the Government with schedule update and progress payment request. As required in Contract Clause "Payments", at least one week prior to submittal, the Contractor shall meet with the Government representative to review the planned progress payment data submission for errors and omissions.

The Contractor shall make all required corrections prior to Government acceptance of the export file and progress payment request. Payment requests accompanied by incomplete or incorrect data submittals will be returned. The Government will not process progress payments until an acceptable QCS export file is received.

1.11. NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the requirements of this specification. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification.

End of Section 01 45 01.10

SECTION 01 45 04.00 10
CONTRACTOR QUALITY CONTROL

1.0 GENERAL

1.1. REFERENCES

1.2. PAYMENT

2.0 PRODUCTS (NOT APPLICABLE)

3.0 EXECUTION

3.1. GENERAL REQUIREMENTS

3.2. QUALITY CONTROL PLAN

3.3. COORDINATION MEETING

3.4. QUALITY CONTROL ORGANIZATION

3.5. SUBMITTALS AND DELIVERABLES

3.6. CONTROL

3.7. TESTS

3.8. COMPLETION INSPECTION

3.9. DOCUMENTATION

3.10. NOTIFICATION OF NONCOMPLIANCE

1.0 GENERAL

1.1. REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only. Refer to the latest edition, as of the date of the contract solicitation.

- ASTM INTERNATIONAL (ASTM)
- ASTM D 3740 Minimum Requirements for Agencies

  Engaged in the Testing and/or Inspection
  of Soil and Rock as Used in Engineering
  Design and Construction
- ASTM E 329 Agencies Engaged in the Testing

  and/or Inspection of Materials Used in
  Construction
- U.S. ARMY CORPS OF ENGINEERS (USACE)

  ER 1110-1-12 Quality Management

1.2. PAYMENT

There will be no separate payment for providing and maintaining an effective Quality Control program. Include all costs associated therewith in the applicable unit prices or lump-sum prices contained in the Contract Line Item Schedule.

2.0 PRODUCTS (Not Applicable)

3.0 EXECUTION

3.1. GENERAL REQUIREMENTS

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product, which complies with the contract requirements. The system shall cover all design and construction operations, both onsite and offsite, and shall be keyed to the proposed design and construction sequence. The site project superintendent is responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the contract. The site project superintendent in this context shall be the highest level manager responsible for the overall construction activities at the site, including quality and production. The site project superintendent shall maintain a physical presence at the site at all times, except as otherwise acceptable to the Contracting Officer, and shall be responsible for all construction and construction related activities at the site.

3.2. QUALITY CONTROL PLAN

Furnish for Government review, not later than 30 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. The Government will consider an interim plan for the first 30 days of operation. Design and construction may begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. The Government will not permit work outside of the features of work included in an accepted interim plan to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started. Where the applicable Code issued by the International Code Council calls for an inspection by the Building Official, the Contractor shall include the inspections in the Quality Control Plan and shall perform the inspections. The Designer of Record shall develop a program for any special inspections required by the applicable International Codes and the Contractor shall perform these inspections, using qualified inspectors. Include the special inspection plan in the QC Plan.

3.2.1. Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all design and construction operations, both onsite and offsite, including work by subcontractors, fabricators, suppliers, and purchasing agents subcontractors, designers of record, consultants, architect/engineers (AE), fabricators, suppliers, and purchasing agents:

3.2.1.1. A description of the quality control organization. Include a chart showing lines of authority and an acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. A CQC System Manager shall report to the project superintendent or someone higher in the contractor's organization.

3.2.1.2. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function. Also include those responsible for performing and documenting the inspections required by the International Codes and the special inspection program developed by the designer of record.

3.2.1.3. A copy of the letter to the CQC System Manager, signed by an authorized official of the firm, which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Furnish copies of these letters.

3.2.1.4. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, offsite fabricators, suppliers, and purchasing agents subcontractors, designers of record, consultants, architect engineers (AE), offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.

3.2.1.5. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. Use only Government approved Laboratory facilities.

3.2.1.6. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.

3.2.1.7. Procedures for tracking design and construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.

3.2.1.8. Reporting procedures, including proposed reporting formats.

3.2.1.9. A list of the definable features of work. A definable feature of work is a task, which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable feature under a particular section. This list will be agreed upon during the coordination meeting.

3.2.1.10. A list of all inspections required by the International Codes and the special inspection program required by the code and this contract.

3.2.2. Additional Requirements for Design Quality Control (DQC) Plan

The following additional requirements apply to the Design Quality Control (DQC) plan:

3.2.2.1. The Contractor's QCP Plan shall provide and maintain a Design Quality Control (DQC) Plan as an effective quality control program which will assure that all services required by this design-build contract are performed and provided in a manner that meets professional architectural and engineering quality standards. As a minimum, competent, independent reviewers identified in the DQC Plan shall review all documents. Use personnel who were not involved in the design effort to produce the design to perform the independent technical review (ITR). The ITR is intended as a quality control check of the design. Include, at least, but not necessarily limited to, a review of the contract requirements (the accepted contract or task order proposal and amended RFP), the basis of design, design calculations, the design configuration management documentation and check the design documents for

errors, omissions, and for coordination and design integration. The ITR team is not required to examine, compare or comment concerning alternate design solutions but should concentrate on ensuring that the design meets the contract requirements. Correct errors and deficiencies in the design documents prior to submitting them to the Government.

3.2.2.2. Include in the DQC Plan the discipline-specific checklists to be used during the design and quality control of each submittal. Submit these completed checklists at each design phase as part of the project documentation.

3.2.2.3. A Design Quality Control Manager, who has the responsibility of being cognizant of and assuring that all documents on the project have been coordinated, shall implement the DQC Plan This individual shall be a person who has verifiable engineering or architectural design experience and is a registered professional engineer or architect. Notify the Government, in writing, of the name of the individual, and the name of an alternate person assigned to the position.

3.2.3. Acceptance of Plan

Government acceptance of the Contractor's plan is required prior to the start of design and construction. Acceptance is conditional and will be predicated on satisfactory performance during the design and construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.4. Notification of Changes

After acceptance of the CQC Plan, notify the Government in writing of any proposed change. Proposed changes are subject to Government acceptance.

3.3. COORDINATION MEETING

After the Postaward Conference, before start of design or construction, and prior to acceptance by the Government of the CQC Plan, the Contractor and the Government shall meet and discuss the Contractor's quality control system. Submit the CQC Plan for review a minimum of 7 calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, design activities, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. The Government will prepare minutes of the meeting for signature by both parties. . The minutes shall become a part of the contract file. There may be occasions when either party will call for subsequent conferences to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4. QUALITY CONTROL ORGANIZATION

3.4.1. Personnel Requirements

The requirements for the CQC organization are a CQC System Manager, a Design Quality Manager, and sufficient number of additional qualified personnel to ensure contract compliance. The CQC organization shall also include personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly. The Contractor's CQC staff shall maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure contract compliance. The CQC staff shall be subject to acceptance by the Contracting Officer. Provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Promptly furnish complete records of all letters, material submittals, shop drawing submittals, schedules and all other project documentation to the CQC organization. The CQC organization shall be responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

3.4.2. CQC System Manager

Identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System

Manager shall be a graduate engineer, graduate architect, or a BA/BS graduate of an ACCE accredited construction management college program. The CQC system Manager may alternately be an engineering technician with at least 2 years of college and an ICC certification as a Commercial Building Inspector (Residential Building Inspector certification will be required for Military Family Housing projects). In addition, the CQC system manager shall have a minimum of 5 years construction experience on construction similar to this contract. The CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. Assign the CQC System Manager no other duties (except may also serve as Safety and Health Officer, if qualified and if allowed by Section 00 73 00). Identify an alternate for the CQC System Manager in the plan to serve in the event of the System Manager's absence. The requirements for the alternate shall be the same as for the designated CQC System Manager but the alternate may have other duties in addition to serving in a temporary capacity as the acting QC manager.

3.4.3. CQC Personnel

3.4.3.1. In addition to CQC personnel specified elsewhere in the contract provide specialized CQC personnel to assist the CQC System Manager in accordance with paragraph titled Area Qualifications.

3.4.3.2. These individuals may be employees of the prime or subcontractor; be responsible to the CQC System Manager; **are not intended to be full time, but must be physically present at the construction site during work on their areas of responsibility**; have the necessary education and/or experience in accordance with the experience matrix listed herein. These individuals may perform other duties but must be allowed sufficient time to perform their assigned quality control duties as described in the Quality Control Plan. **One person may cover more than one area, provided that they are qualified to perform QC activities for the designated areas below and provided that they have adequate time to perform their duties:**

3.4.4. Experience Matrix

3.4.4.1. Area Qualifications

3.4.4.1.1. Civil - Graduate Civil Engineer or (BA/BS) graduate in construction management with 4 years experience in the type of work being performed on this project or engineering technician with 5 yrs related experience.

3.4.4.1.2. Mechanical - Graduate Mechanical Engineer or (BA/BS) graduate in construction management with 4 yrs related experience or engineering technician with an ICC certification as a Commercial Mechanical Inspector with 5 yrs related experience.

3.4.4.1.3. Electrical - Graduate Electrical Engineer or (BA/BS) graduate in construction management with 4 yrs related experience or engineering technician with an ICC certification as a Commercial Electrical Inspector with 5 yrs related experience.

3.4.4.1.4. Structural - Graduate Structural Engineer or (BA/BS) graduate in construction management with 4 yrs related experience or person with an ICC certification as a Reinforced Concrete Special Inspector and Structural Steel and Bolting Special Inspector (as applicable to the type of construction involved) with 5 yrs related experience.

3.4.4.1.5. Plumbing - Graduate Mechanical Engineer or (BA/BS) graduate in construction management with 4 yrs related experience, or person with an ICC certification as a Commercial Plumbing Inspector with 5 yrs related experience.

3.4.4.1.6. Concrete, Pavements and Soils Materials Technician (present while performing tests) with 2 yrs experience for the appropriate area

3.4.4.1.7. Testing, Adjusting and Balancing Specialist must be a member (TAB) Personnel of AABC or an experienced technician of the firm certified by the NEBB (present while testing, adjusting, balancing).

3.4.4.1.8. Design Quality Control Manager Registered Architect or Professional Engineer (not required on the construction site)

3.4.4.1.9. Registered Fire Protection Engineer with 4 years related experience or engineering technician with 5 yrs related experience (but see requirements for Fire Protection Engineer of Record to witness final testing in Section 01 10 00, paragraph 5.10, Fire Protection).

3.4.4.1.10. QC personnel assigned to the installation of the telecommunication system or any of its components shall be Building Industry Consulting Services International (BICSI) Registered Cabling Installers, Technician Level. Submit documentation of current BICSI certification. In lieu of BICSI certification, QC personnel shall have a minimum of 5 years experience in the installation of the specified copper and fiber optic cable and components. They shall have factory or factory approved certification from each equipment manufacturer indicating that they are qualified to install and test the provided products. QC personnel shall witness and certify the testing of telecommunications cabling and equipment.

3.4.5. Additional Requirement

In addition to the above experience and/or education requirements the CQC System Manager shall have completed the course entitled "Construction Quality Management for Contractors". This course is periodically offered at Colorado Springs, CO; POC: 719-556-4184. Inquire of the District or Division sponsoring the course for fees and other expenses involved, if any, for attendance at this course.

3.4.6. Organizational Changes

When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5. SUBMITTALS AND DELIVERABLES

Make submittals as specified in Section 01 33 00 ***SUBMITTAL PROCEDURES***. The CQC organization shall certify that all submittals and deliverables are in compliance with the contract requirements.

3.6. CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. The CQC organization shall conduct at least three phases of control for each definable feature of the construction work as follows:

3.6.1. Preparatory Phase

Perform this phase prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

3.6.1.1. A review of each paragraph of applicable specifications, reference codes, and standards. Make a copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field at the preparatory inspection. Maintain these copies in the field, available for use by Government personnel until final acceptance of the work.

3.6.1.2. A review of the contract drawings.

3.6.1.3. A check to assure that all materials and/or equipment have been tested, submitted, and approved.

3.6.1.4. Review of provisions that have been made to provide required control inspection and testing.

3.6.1.5. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.

3.6.1.6. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.

3.6.1.7. A review of the appropriate activity hazard analysis to assure safety requirements are met.

3.6.1.8. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.

3.6.1.9. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.

3.6.1.10. Discussion of the initial control phase.

3.6.1.11. Notify the Government at least 24 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. Document the results of the preparatory phase actions by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2. Initial Phase

Accomplish this phase at the beginning of a definable feature of work. Include the following actions:

3.6.2.1. Check work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.

3.6.2.2. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.

3.6.2.3. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.

3.6.2.4. Resolve all differences.

3.6.2.5. Check safety to include compliance with and upgrading of the Accident Prevention plan and activity hazard analysis. Review the activity analysis with each worker.

3.6.2.6. Notify the Government at least 24 hours in advance of beginning the initial phase. The CQC System Manager shall prepare and attach to the daily CQC report separate minutes of this phase. Indicate exact location of initial phase for future reference and comparison with follow-up phases.

3.6.2.7. Repeat the initial phase any time acceptable specified quality standards are not being met.

3.6.3. Follow-up Phase

Perform daily checks to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Conduct final follow-up checks and correct deficiencies prior to the start of additional features of work which may be affected by the deficient work. Do not build upon nor conceal non-conforming work.

3.6.4. Additional Preparatory and Initial Phases

Conduct additional preparatory and initial phases on the same definable features of work if: the quality of on-going work is unacceptable; if there are changes in the applicable CQC staff, onsite production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

3.7. TESTS

3.7.1. Testing Procedure

Perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements and project design documents. Upon request, furnish to the Government

duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory, or establish an approved testing laboratory at the project site. The Contractor may elect to use a laboratory certified and accredited by the Concrete and cement Reference Laboratory (CCRL) or by AASHTO Materials Reference Laboratory (AMRL) for testing procedures that those organizations certify. The Contractor shall perform the following activities and record and provide the following data:

3.7.1.1. Verify that testing procedures comply with contract requirements and project design documents.

3.7.1.2. Verify that facilities and testing equipment are available and comply with testing standards.

3.7.1.3. Check test instrument calibration data against certified standards.

3.7.1.4. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.

3.7.1.5. Include results of all tests taken, both passing and failing tests, recorded on the CQC report for the date taken. Include specification paragraph reference, location where tests were taken, and the sequential control number identifying the test. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. Provide an information copy of tests performed by an offsite or commercial test facility directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7.2. Testing Laboratories

3.7.2.1. Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329.

3.7.2.2. Capability Recheck

If the selected laboratory fails the capability check, the Government will assess the Contractor a charge of $1,375 to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

3.7.3. Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests, and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.4. Furnishing or Transportation of Samples for Government Quality Assurance Testing

The Contractor is responsible for costs incidental to the transportation of samples or materials. Deliver samples of materials for test verification and acceptance testing by the Government to the Corps of Engineers Laboratory, f.o.b., at the following address:

- For delivery by mail:

  As Directed by the Area or Resident Office

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- For other deliveries:

  As Directed by the Area or Resident Office

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The area or resident office will coordinate, exact delivery location, and dates for each specific test.

3.8. COMPLETION INSPECTION

3.8.1. Punch-Out Inspection

Near the end of the work, or any increment of the work established by a time stated in the SPECIAL CONTRACT REQUIREMENTS Clause, "Commencement, Prosecution, and Completion of Work", or by the specifications, the CQC Manager shall conduct an inspection of the work. Prepare a punch list of items which do not conform to the approved drawings and specifications and include in the CQC documentation, as required by paragraph DOCUMENTATION. The list of deficiencies shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

3.8.2. Pre-Final Inspection

As soon as practicable after the notification above, the Government will perform the pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled. Correct any items noted on the Pre-Final inspection in a timely manner. Accomplish these inspections and any deficiency corrections required by this paragraph within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

3.8.3. Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall attend the final acceptance inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups and major commands may also attend. The Government will formally schedule the final acceptance inspection based upon results of the Pre-Final inspection. Provide notice to the Government at least 14 days prior to the final acceptance inspection and include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

3.9. DOCUMENTATION

3.9.1. Maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers using government-provided software, QCS (see Section 01 45 01.10). The report includes, as a minimum, the following information:

3.9.1.1. Contractor/subcontractor and their area of responsibility.

3.9.1.2. Operating plant/equipment with hours worked, idle, or down for repair.

3.9.1.3. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.

3.9.1.4. Test and/or control activities performed with results and references to specifications/drawings requirements. Identify the applicable control phase (Preparatory, Initial, Follow-up). List deficiencies noted, along with corrective action.

3.9.1.5. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.

3.9.1.6. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.

3.9.1.7. Offsite surveillance activities, including actions taken.

3.9.1.8. Job safety evaluations stating what was checked, results, and instructions or corrective actions.

3.9.1.9. Instructions given/received and conflicts in plans and/or specifications.

3.9.1.10. Provide documentation of design quality control activities. For independent design reviews, provide, as a minimum, identity of the ITR team, the ITR review comments, responses and the record of resolution of the comments.

3.9.2. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. Furnish the original and one copy of these records in report form to the Government daily within 24 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, submit one report for every 7 days of no work and on the last day of a no work period. Account for all calendar days throughout the life of the contract. The first report following a day of no work shall be for that day only. The CQC System Manager shall sign and date reports. The report shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel. The Contractor may submit these forms electronically, in lieu of hard copy.

3.10. NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

End of Section 01 45 04.00 10

SECTION 01 50 02
TEMPORARY CONSTRUCTION FACILITIES

1.0 OVERVIEW

1.1. GENERAL REQUIREMENTS

1.2. AVAILABILITY AND USE OF UTILITY SERVICES

1.3. BULLETIN BOARD, PROJECT SIGN, AND PROJECT SAFETY SIGN

1.4. PROTECTION AND MAINTENANCE OF TRAFFIC

1.5. MAINTENANCE OF CONSTRUCTION SITE

1.0 OVERVIEW

1.1. GENERAL REQUIREMENTS

1.1.1. Site Plan

Prepare a site plan indicating the proposed location and dimensions of any area to be fenced and used by the Contractor, the number of trailers to be used, avenues of ingress/egress to the fenced area and details of the fence installation. Identify any areas which may have to be graveled to prevent the tracking of mud. Also indicate if the use of a supplemental or other staging area is desired.

1.2. AVAILABILITY AND USE OF UTILITY SERVICES

1.2.1. See Section 00 72 00, Contract Clauses and Section 00 73 00, Special Contract Requirements, for Utility Availability requirements.

1.2.2. Sanitation

Provide and maintain within the construction area minimum field-type sanitary facilities approved by the Contracting Officer. Government toilet facilities will not be available to Contractor's personnel.

1.2.3. Telephone

Make arrangements and pay all costs for desired telephone facilities.

1.3. BULLETIN BOARD, PROJECT SIGN, AND PROJECT SAFETY SIGN

1.3.1. Bulletin Board

Immediately upon beginning of onsite work, provide a weatherproof glass-covered bulletin board not less than 36 by 48 inches in size for displaying the Equal Employment Opportunity poster, a copy of the wage decision contained in the contract, Wage Rate Information poster, and other information approved by the Contracting Officer. Locate the bulletin board at the project site in a conspicuous place easily accessible to all employees, as approved by the Contracting Officer. Display legible copies of the aforementioned data until work is completed. Remove the bulletin board from the site upon completion of the project.

1.3.2. Project and Safety Signs

Erect a project sign and a site safety sign with informational details as provided by the Government at the Post award conference, within 15 days prior to any work activity on project site. Update the safety sign data daily, with light colored metallic or non-metallic numerals. Remove the signs from the site upon completion of the project. Engineer Pamphlet EP 310-1-6a contains the standardized layout and construction details for the signs. It can be found through a GOOGLE Search or try http://www.usace.army.mil/publications/eng-pamphlets/ep310-1-6a/s-16.pdf.

1.4. PROTECTION AND MAINTENANCE OF TRAFFIC

Provide access and temporary relocated roads as necessary to maintain traffic. Maintain and protect traffic on all affected roads during the construction period except as otherwise specifically directed by the Contracting Officer. Take measures for the protection and diversion of traffic, including the provision of watchmen and flagmen, erection of barricades, placing of lights around and in front of equipment and the work, and the erection and maintenance of adequate warning, danger, and direction signs, as required by the State and local authorities having jurisdiction. Protect the traveling public from damage to person and property.

The Contractor's traffic on roads selected for hauling material to and from the site shall interfere as little as possible with public traffic. Investigate the adequacy of existing roads and the allowable load limit on these roads. Repair any damage to roads caused by construction operations.

1.4.1. Haul Roads

The Contractor shall, at its own expense, construct access and haul roads necessary for proper prosecution of the work under this contract. Construct haul roads with suitable grades and widths. Avoid sharp curves, blind corners, and dangerous cross traffic. Provide necessary lighting, signs, barricades, and distinctive markings for the safe movement of traffic. The method of dust control, although optional, shall be adequate to ensure safe operation at all times. Location, grade, width, and alignment of construction and hauling roads shall be subject to approval by the Contracting Officer. Provide adequate lighting to assure full and clear visibility for full width of haul road and work areas during any night work operations. Remove haul roads designated by the Contracting Officer upon completion of the work and restore those areas.

1.4.2. Barricades

Erect and maintain temporary barricades to limit public access to hazardous areas. Barricades shall be required whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Securely place barricades clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night.

1.5. MAINTENANCE OF CONSTRUCTION SITE

Mow grass and vegetation located within the boundaries of the construction site for the duration of the project, from NTP to contract completion. Edge or neatly trim grass and vegetation along fences, buildings, under trailers, and in areas not accessible to mowers from NTP to contract completion.

End of Section 01 50 02

SECTION 01 57 20.00 10
ENVIRONMENTAL PROTECTION

1.0 GENERAL REQUIREMENTS

1.1. SUBCONTRACTORS

1.2. ENVIRONMENTAL PROTECTION PLAN

1.3. PROTECTION FEATURES

1.4. ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS

1.5. NOTIFICATION

2.0 PRODUCTS (NOT USED)

3.0 EXECUTION

3.1. LAND RESOURCES

3.2. WATER RESOURCES

3.3. AIR RESOURCES

3.4. CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL

3.5. RECYCLING AND WASTE MINIMIZATION

3.6. HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

3.7. BIOLOGICAL RESOURCES

3.8. INTEGRATED PEST MANAGEMENT

3.9. PREVIOUSLY USED EQUIPMENT

3.10. MILITARY MUNITIONS

3.11. TRAINING OF CONTRACTOR PERSONNEL

3.12. POST CONSTRUCTION CLEANUP

1.0 GENERAL REQUIREMENTS

Minimize environmental pollution and damage that may occur as the result of construction operations. Protect the environmental resources within the project boundaries and those affected outside the limits of permanent work during the entire duration of this contract. Comply with all applicable environmental Federal, State, and local laws and regulations. The Contractor shall be responsible for any delays resulting from failure to comply with environmental laws and regulations

1.1. SUBCONTRACTORS

Ensure compliance with this section by subcontractors.

1.2. ENVIRONMENTAL PROTECTION PLAN

1.2.1. The purpose of the Environmental Protection Plan is to present a comprehensive overview of known or potential environmental issues which the Contractor must address during construction. Define issues of concern within the Environmental Protection Plan as outlined in this section. Address each topic in the plan at a level of detail commensurate with the environmental issue and required construction task(s). Identify and discuss topics or issues which are not identified in this section, but which the Contractor considers necessary, after those items formally identified in this section. Prior to commencing construction activities or delivery of materials to the site, submit the Plan for review and Government approval. The Contractor shall meet with the Government prior to implementation of the Environmental Protection Plan, for the purpose of discussing the implementation of the initial plan; possible subsequent additions and revisions to the plan including any reporting requirements; and methods for administration of the Contractor's Environmental Plans. Maintain and keep the Environmental Protection Plan current onsite.

1.2.2. Compliance

No requirement in this Section shall be construed as relieving the Contractor of any applicable Federal, State, and local environmental protection laws and regulations. During Construction, the Contractor shall be responsible for identifying, implementing, and submitting for approval any additional requirements to be included in the Environmental Protection Plan.

1.2.3. Contents

The plan shall include, but shall not be limited to, the following:

1.2.3.1. Name(s) of person(s) within the Contractor's organization who is(are) responsible for ensuring adherence to the Environmental Protection Plan.

1.2.3.2. Name(s) and qualifications of person(s) responsible for manifesting hazardous waste to be removed from the site, if applicable

1.2.3.3. Name(s) and qualifications of person(s) responsible for training the Contractor's environmental protection personnel

1.2.3.4. Description of the Contractor's environmental protection personnel training program

1.2.3.5. An erosion and sediment control plan which identifies the type and location of the erosion and sediment controls to be provided. Include monitoring and reporting requirements to assure that the control measures are in compliance with the erosion and sediment control plan, Federal, State, and local laws and regulations. A Storm Water Pollution Prevention Plan (SWPPP) may be substituted for this plan.

1.2.3.6. Drawings showing locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on the site

1.2.3.7. Traffic control plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather. Include measures to minimize the amount of mud transported onto paved public roads by vehicles or runoff.

1.2.3.8. Work area plan showing the proposed activity in each portion of the area and identifying the areas of limited use or nonuse. Include measures for marking the limits of use areas including methods for protection of features to be preserved within authorized work areas.

1.2.3.9. Drawing showing the location of on-installation borrow areas.

1.2.3.10. A spill control plan shall include the procedures, instructions, and reports to be used in the event of an unforeseen spill of a substance regulated by 40 CFR 68, 40 CFR 302, 40 CFR 355, and/or regulated under State or Local laws and regulations. The spill control plan supplements the requirements of EM 385-1-1. This plan shall include as a minimum:

(a) The name of the individual who will report any spills or hazardous substance releases and who will follow up with complete documentation. This individual shall immediately notify the Government and the local Fire Department in addition to the legally required Federal, State, and local reporting channels (including the National Response Center 1-800-424-8802) if a reportable quantity is released to the environment. The plan shall contain a list of the required reporting channels and telephone numbers.

(b) The name and qualifications of the individual who will be responsible for implementing and supervising the containment and cleanup

(c) Training requirements for Contractor's personnel and methods of accomplishing the training

(d) A list of materials and equipment to be immediately available at the job site, tailored to cleanup work of the potential hazard(s) identified.

(e) The names and locations of suppliers of containment materials and locations of additional fuel oil recovery, cleanup, restoration, and material-placement equipment available in case of an unforeseen spill emergency

(f) The methods and procedures to be used for expeditious contaminant cleanup

1.2.3.11. A solid waste management plan identifying waste minimization, collection, and disposals methods, waste streams (type and quantity), and locations for solid waste diversion/disposal including clearing debris and C&D waste that is diverted (salvaged, reused, or recycled). Detail the contractor's actions to comply with, and to participate in, Federal, state, regional, local government, and installation sponsored recycling programs to reduce the volume of solid waste at the source. Identify any subcontractors responsible for the transportation, salvage and disposal of solid waste. Submit licenses or permits for solid waste disposal sites that are not a commercial operating facility. Attach evidence of the facility's ability to accept the solid waste to this plan. A construction and demolition waste management plan, similar to the plan specified in the UFGS 01 74 19 (formerly 01572) may be used as the non-hazardous solid waste management plan. Provide a Non-Hazardous Solid Waste Diversion Report. Submit the report on the first working day after the first quarter that non-hazardous solid waste has been disposed and/or diverted and each quarter thereafter (e.g. the first working day of January, April, July, and October) until the end of the project. Additionally, a summary report, with all data fields, is required at the end of the project. The report shall indicate the total type and amount of waste generated, total type and amount of waste diverted, type and amount of waste sent to waste-to-energy facility and alternative daily cover, in tons along with the percent that was diverted. Maintain, track and report construction and demolition waste data in a manner such that the installation can enter the data into the Army SWAR database, which separates data by type of material. A cumulative report in LEED Letter Template format may be used but must be modified to include the date disposed of/diverted and include the above stated diversion data. NOTE: The Solid Waste Diversion Reports are separate documentation than the LEED documentation.

1.2.3.12. DELETED.

1.2.3.13. An air pollution control plan detailing provisions to assure that dust, debris, materials, trash, etc., do not become air borne and travel off the project site.

1.2.3.14. A contaminant prevention plan that: identifies potentially hazardous substances to be used on the job site; identifies the intended actions to prevent introduction of such materials into the air, water, or ground; and details provisions for compliance with Federal, State, and local laws and regulations for storage and handling of

these materials. In accordance with EM 385-1-1, include a copy of the Material Safety Data Sheets (MSDS) and the maximum quantity of each hazardous material to be on site at any given time in the contaminant prevention plan. Update the plan as new hazardous materials are brought on site or removed from the site. Reference this plan in the storm water pollution prevention plan, as applicable.

1.2.3.15. A waste water management plan that identifies the methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines. If a settling/retention pond is required, include the design of the pond including drawings, removal plan, and testing requirements for possible pollutants. If land application will be the method of disposal for the waste water, include a sketch showing the location for land application along with a description of the pretreatment methods to be implemented and any required permits. If surface discharge will be the method of disposal, include a copy of the permit and associated documents as an attachment prior to discharging the waste water. If disposal is to a sanitary sewer, include documentation that the waste water treatment plant Operator has approved the flow rate, volume, and type of discharge.

1.2.3.16. A historical, archaeological, cultural resources biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands known to be on the project site: and/or identifies procedures to be followed if historical archaeological, cultural resources, biological resources and wetlands not previously known to be onsite or in the area are discovered during construction. Include methods to assure the protection of known or discovered resources and shall identify lines of communication between Contractor personnel and the Government.

1.2.3.17. A pesticide treatment plan, updated, as information becomes available. Include: sequence of treatment, dates, times, locations, pesticide trade name, EPA registration numbers, authorized uses, chemical composition, formulation, original and applied concentration, application rates of active ingredient (i.e. pounds of active ingredient applied), equipment used for application and calibration of equipment. The Contractor is responsible for Federal, State, Regional and Local pest management record keeping and reporting requirements as well as any additional Installation specific requirements. Follow AR 200-1, Chapter 5, Pest Management, Section 5-4, “Program Requirements” for data required to be reported to the Installation.

1.3. PROTECTION FEATURES

This paragraph supplements the Contract Clause PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES AND IMPROVEMENTS. Prior to start of any onsite construction activities, the Contractor and the Government shall make a joint condition survey. Immediately following the survey, the Contractor shall prepare a brief report including a plan describing the features requiring protection under the provisions of the Contract Clauses, which are not specifically identified on the drawings as environmental features requiring protection along with the condition of trees, shrubs and grassed areas immediately adjacent to the site of work and adjacent to the Contractor's assigned storage area and access route(s), as applicable. Both the Contractor and the Government will sign this survey, upon mutual agreement as to its accuracy and completeness. The Contractor develop a plan that depicts how it will protect those environmental features included in the survey report and any indicated on the drawings, regardless of interference which their preservation may cause to the Contractor's work under the contract.

1.4. ENVIRONMENTAL ASSESSMENT OF CONTRACT DEVIATIONS

Any deviations, requested by the Contractor, from the drawings, plans and specifications which may have an environmental impact will be subject to approval by the Government and may require an extended review, processing, and approval time. The Government reserves the right to disapprove alternate methods, even if they are more cost effective, if the Government determines that the proposed alternate method will have an adverse environmental impact.

1.5. NOTIFICATION

The Government will notify the Contractor in writing of any observed noncompliance with Federal, State or local environmental laws or regulations, permits, and other elements of the Contractor's Environmental Protection plan. The Contractor shall, after receipt of such notice, inform the Government of the proposed corrective action and take such action when approved by the Government. The Government may issue an order stopping all or part of the

work until satisfactory corrective action has been taken. No time extensions shall be granted or equitable adjustments allowed to the Contractor for any such suspensions. This is in addition to any other actions the Government may take under the contract, or in accordance with the Federal Acquisition Regulation or Federal Law.

2.0 PRODUCTS (NOT USED)

3.0 EXECUTION

3.1. LAND RESOURCES

Confine all activities to areas defined by the drawings and specifications. Prior to the beginning of any construction, identify any land resources to be preserved within the work area. Except in areas indicated on the drawings or specified to be cleared, do not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, topsoil, and land forms without approval. Do not attach or fasten any ropes, cables, or guys to any trees for anchorage unless specifically authorized. Provide effective protection for land and vegetation resources at all times as defined in the following subparagraphs. Remove all stone, soil, or other materials displaced into uncleared areas..

3.1.1. Work Area Limits

Prior to commencing construction activities, mark the areas that need not be disturbed under this contract. Mark or fence isolated areas within the general work area which are not to be disturbed. Protect monuments and markers before construction operations commence. Where construction operations are to be conducted during darkness, any markers shall be visible in the dark. Personnel shall be knowledgeable of the purpose for marking and/or protecting particular objects.

3.1.2. Landscape

Clearly identify trees, shrubs, vines, grasses, land forms and other landscape features indicated and defined on the drawings to be preserved by marking, fencing, or wrapping with boards, or any other approved techniques. Restore landscape features damaged or destroyed during construction operations outside the limits of the approved work area.

3.1.3. Erosion and Sediment Controls

Provide erosion and sediment control measures in accordance with Federal, State, and local laws and regulations. Coordinate with approving authorities (federal, state, etc.) for specific requirements to be included in the plan. The erosion and sediment controls selected and maintained by the Contractor shall be such that water quality standards are not violated as a result of the Contractor's construction activities. Keep the area of bare soil exposed at any one time by construction operations to a minimum necessary. Construct or install temporary and permanent erosion and sediment control best management practices (BMPs). BMPs may include, but not be limited to, vegetation cover, stream bank stabilization, slope stabilization, silt fences, construction of terraces, interceptor channels, sediment traps, inlet and outfall protection, diversion channels, and sedimentation basins. Remove any temporary measures after the area has been stabilized.

3.1.4. Contractor Facilities and Work Areas

Place field offices, staging areas, stockpile storage, and temporary buildings in areas designated on the drawings or as directed by the Government. Make only approved temporary movement or relocation of Contractor facilities. Provide erosion and sediment controls for on-site borrow and spoil areas to prevent sediment from entering nearby waters. Control temporary excavation and embankments for plant and/or work areas to protect adjacent areas.

3.2. WATER RESOURCES

Monitor construction activities to prevent pollution of surface and ground waters. Do not apply toxic or hazardous chemicals to soil or vegetation unless otherwise indicated. Monitor all water areas affected by construction activities. For construction activities immediately adjacent to impaired surface waters, the Contractor shall be capable of quantifying sediment or pollutant loading to that surface water when required by state or federally issued Clean Water Act permits.

3.2.1. Stream Crossings

Stream crossings shall allow movement of materials or equipment without violating water pollution control standards of the Federal, State, and local governments or impede state-designated flows.

3.2.2. Wetlands

Do not enter, disturb, destroy, or allow discharge of contaminants into any wetlands.

3.3. AIR RESOURCES

Comply with all Federal and State air emission and performance laws and standards for equipment operation, activities, or processes.

3.3.1. Particulates

Control dust particles; aerosols and gaseous by-products from construction activities; and processing and preparation of materials, such as from asphaltic batch plants, including weekends, holidays and hours when work is not in progress. Maintain excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and other work areas within or outside the project boundaries free from particulates which would cause the Federal, State, and local air pollution standards to be exceeded or which would cause a hazard or a nuisance. Sprinkling, chemical treatment of an approved type, baghouse, scrubbers, electrostatic precipitators or other methods are permitted to control particulates in the work area. Sprinkling, to be efficient, must be repeated to keep the disturbed area damp at all times. Provide sufficient, competent equipment available to accomplish these tasks. Perform particulate control as the work proceeds and whenever a particulate nuisance or hazard occurs. Comply with all State and local visibility regulations.

3.3.2. Odors

Control odors from construction activities at all times. Odors shall not cause a health hazard and shall be in compliance with State regulations and/or local ordinances.

3.3.3. Sound Intrusions

Keep construction activities under surveillance and control to minimize environment damage by noise. Comply with the provisions of the state and Installation rules.

3.3.4. Burning

Burning is not allowed on the project site unless specified in other sections of the specifications or by written authorization. Specific times, locations, and manners of burning shall be subject to approval.

3.4. CHEMICAL MATERIALS MANAGEMENT AND WASTE DISPOSAL

Disposal of wastes shall be as directed below, unless otherwise specified in other sections and/or shown on the drawings.

3.4.1. Solid Wastes

Place solid wastes (excluding clearing debris) in containers which are emptied on a regular schedule. Conduct handling, storage, and disposal to prevent contamination. Employ segregation measures so that no hazardous or toxic waste will become co-mingled with solid waste. Transport solid waste off Government property and dispose of it in compliance with Federal, State, and local requirements for solid waste disposal. The minimum acceptable off-site solid waste disposal option is a Subtitle D RCRA permitted landfill. Verify that the selected transporters and disposal facilities have the necessary permits and licenses to operate. Comply with Federal, State, and local laws and regulations pertaining to the use of landfill areas.

3.4.2. Chemicals and Chemical Wastes

Dispense chemicals, ensuring no spillage to the ground or water. Perform and document periodic inspections of dispensing areas to identify leakage and initiate corrective action. The Government may periodically review this documentation. Collect chemical waste in corrosion resistant, compatible containers. Monitor and remove collection drums to a staging or storage area when contents are within 6 inches of the top. Classify, manage, store, and dispose of wastes in accordance with Federal, State, and local laws and regulations.

3.4.3. Contractor Generated Hazardous Wastes/Excess Hazardous Materials

Hazardous wastes are defined in 40 CFR 261, or are as defined by applicable state and local regulations. Hazardous materials are defined in 49 CFR 171 - 178. At a minimum, manage and store hazardous waste in compliance with 40 CFR 262. Take sufficient measures to prevent spillage of hazardous and toxic materials during dispensing. Segregate hazardous waste from other materials and wastes; protect it from the weather by placing it in a safe covered location and take precautionary measures, such as berming or other appropriate measures, against accidental spillage. Store, describe, package, label, mark, and placard hazardous waste and hazardous material in accordance with 49 CFR 171 - 178, state, and local laws and regulations. Transport Contractor generated hazardous waste off Government property in accordance with the Environmental Protection Agency and the Department of Transportation laws and regulations. Dispose of hazardous waste in compliance with Federal, State and local laws and regulations. Immediately report spills of hazardous or toxic materials to the Government and the Facility Environmental Office. Contractor will be responsible for cleanup and cleanup costs due to spills. Contractor is responsible for the disposition of Contractor generated hazardous waste and excess hazardous materials.

3.4.4. Fuel and Lubricants

Conduct storage, fueling and lubrication of equipment and motor vehicles in a manner that affords the maximum protection against spill and evaporation. Manage and store fuel, lubricants and oil in accordance with all Federal, State, Regional, and local laws and regulations.

3.5. RECYCLING AND WASTE MINIMIZATION

Participate in State and local government sponsored recycling programs. The Contractor is further encouraged to minimize solid waste generation throughout the duration of the project. Line and berm fueling areas and establish storm water control structures at discharge points for site run-off. Keep a liquid containment clean-up kit available at the fueling area.

3.6. HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

Existing historical, archaeological, and cultural resources within the Contractor's work area are shown on the drawings. Protect and preserve these resources during the life of the Contract. Temporarily suspend all activities that may damage or alter such resources, if any previously unidentified or unanticipated historical, archaeological, and cultural resources are discovered or found during excavation or other construction activities. Resources covered by this paragraph include but are not limited to: any human skeletal remains or burials; artifacts; shell, midden, bone, charcoal, or other deposits; rock or coral alignments, pavings, wall, or other constructed features; and any indication of agricultural or other human activities. Upon such discovery or find, notify the Government so that the appropriate authorities may be notified and a determination made as to their significance and what, if any, special disposition of the finds should be made. Cease all activities that may result in impact to or the destruction of these resources. Secure the area and prevent employees or other persons from trespassing on, removing, or otherwise disturbing such resources.

3.7. BIOLOGICAL RESOURCES

Minimize interference with, disturbance to, and damage to fish, wildlife, and plants, including their habitat. Protect threatened and endangered animal and plant species including their habitat in accordance with Federal, State, Regional, and local laws and regulations.

3.8. INTEGRATED PEST MANAGEMENT

Coordinate, through the Government, with the Installation Pest Management Coordinator (IPMC) at the earliest possible time prior to pesticide application, in order to minimize impacts to existing fauna and flora. Discuss

integrated pest management strategies with the IPMC and receive concurrence from the IPMC, through the COR, prior to the application of any pesticide associated with these specifications. Give IMPC personnel the opportunity to be present at all meetings concerning treatment measures for pest or disease control and during application of the pesticide. The use and management of pesticides are regulated under 40 CFR 152 - 186.

3.8.1. Pesticide Delivery and Storage

Deliver pesticides, approved for use on the Installation, to the site in the original, unopened containers bearing legible labels indicating the EPA registration number and the manufacturer's registered uses.

3.8.2. Qualifications

Use the services of a subcontractor for pesticide application whose principal business is pest control. The subcontractor shall be licensed and certified in the state where the work is to be performed.

3.8.3. Pesticide Handling Requirements

Formulate, treat with, and dispose of pesticides and associated containers in accordance with label directions.

3.8.4. Application

A state certified pesticide applicator shall apply pesticides in accordance with EPA label restrictions and recommendations.

3.9. PREVIOUSLY USED EQUIPMENT

Clean all previously used construction equipment prior to bringing it onto the project site. Ensure that the equipment is free from soil residuals, egg deposits from plant pests, noxious weeds, and plant seeds. Consult with the USDA jurisdictional office for additional cleaning requirements.

3.10. MILITARY MUNITIONS

Immediately stop work in that area and immediately inform the Government, in the event military munitions, as defined in 40 CFR 260, are discovered or uncovered.

3.11. TRAINING OF CONTRACTOR PERSONNEL

Train personnel in all phases of environmental protection and pollution control. Conduct environmental protection/pollution control meetings for all Contractor personnel prior to commencing construction activities. Conduct additional meetings for new personnel and when site conditions change. The training and meeting agenda shall include methods of detecting and avoiding pollution; familiarization with statutory and contractual pollution standards; installation and care of devices, vegetative covers, and instruments required for monitoring purposes to ensure adequate and continuous environmental protection/pollution control; anticipated hazardous or toxic chemicals or wastes, and other regulated contaminants; recognition and protection of archaeological sites, artifacts, wetlands, and endangered species and their habitat that are known to be in the area.

3.12. POST CONSTRUCTION CLEANUP

Clean up all areas used for construction in accordance with Contract Clause: "Cleaning Up". Unless otherwise instructed in writing , obliterate all signs of temporary construction facilities such as haul roads, work area, structures, foundations of temporary structures, stockpiles of excess or waste materials, and other vestiges of construction prior to final acceptance of the work. Grade, fill and seed the entire disturbed area, unless otherwise indicated.

SECTION 01 62 35
RECYCLED/RECOVERED MATERIAL

1.0 GENERAL

1.1. REFERENCES

1.2. OBJECTIVES

1.3. EPA DESIGNATED ITEMS INCORPORATED IN THE WORK

1.4. EPA PROPOSED ITEMS INCORPORATED IN THE WORK

1.5. EPA LISTED ITEMS USED IN CONDUCT OF THE WORK BUT NOT INCORPORATED IN THE WORK

1.0 GENERAL

1.1. REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

- U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)
- 40 CFR 247 Comprehensive Procurement Guideline for Products Containing Recovered Materials

1.2. OBJECTIVES

Government procurement policy is to acquire, in a cost effective manner, items containing the highest percentage of recycled and recovered materials practicable consistent with maintaining a satisfactory level of competition without adversely affecting performance requirements or exposing suppliers' employees to undue hazards from the recovered materials. The Environmental Protection Agency (EPA) has designated certain items which must contain a specified percent range of recovered or recycled materials. The Contractor shall make all reasonable efforts to use recycled and recovered materials in providing the EPA designated products and in otherwise utilizing recycled and recovered materials in the execution of the work.

1.3. EPA DESIGNATED ITEMS INCORPORATED IN THE WORK

Materials that have been designated by EPA as being products which are or can be made with recovered or recycled materials, when incorporated into the work under this contract, shall contain at least the minimum percentage of recycled or recovered materials indicated by EPA unless adequate justification (non-availability) for non-use is provided. When a designated item is specified as an option to a non-designated item, the designated item requirements apply only if the designated item is used in the work.

1.4. EPA PROPOSED ITEMS INCORPORATED IN THE WORK

Products other than those designated by EPA are still being researched and are being considered for future Comprehensive Procurement Guideline (CPG) designation. It is recommended that these items, when incorporated in the work under this contract, contain the highest practicable percentage of recycled or recovered materials, provided specified requirements are also met.

1.5. EPA LISTED ITEMS USED IN CONDUCT OF THE WORK BUT NOT INCORPORATED IN THE WORK

There are many products listed in 40 CFR 247 which have been designated or proposed by EPA to include recycled or recovered materials that may be use by the Contractor in performing the work but will not be incorporated into the work. These products include office products, temporary traffic control products, and pallets. It is recommended that these non-construction products, when used in the conduct of the work, contain the highest practicable percentage of recycled or recovered materials and that these products be recycled when no longer needed.

End of Section 01 62 35

SECTION 01 78 02.00 10
CLOSEOUT SUBMITTALS

1.0 OVERVIEW

1.1. SUBMITTALS

1.2. PROJECT RECORD DOCUMENTS

1.3. EQUIPMENT DATA

1.4. CONSTRUCTION WARRANTY MANAGEMENT

1.5. MECHANICAL TESTING, ADJUSTING, BALANCING, AND COMMISSIONING

1.6. OPERATION AND MAINTENANCE MANUALS

1.7. FIELD TRAINING

1.8. PRICING OF CONTRACTOR-FURNISHED AND INSTALLED PROPERTY AND GOVERNMENT-FURNISHED CONTRACTOR-INSTALLED PROPERTY

1.9. LEED REVIEW MEETINGS

1.10. RED ZONE MEETING

1.11. FINAL CLEANING

1.12. INTERIM FORM DD1354 "TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY

EXHIBIT 1 SAMPLE RED ZONE MEETING CHECKLIST

1.0 OVERVIEW

1.1. SUBMITTALS

Government approval is required for any submittals with a "G" designation; submittals not having a "G" designation are for Designer of Record approval or for information only. Submit the following in accordance with Section 01 33 00 submittals***:***

SD-02 Shop Drawings

– As-Built Drawings - G

▪ Drawings showing final as-built conditions of the project. Provide electronic drawing files as specified in Section 01 33 16, 3 sets of blue-line prints and one set of the approved working as-built drawings.

SD-03 Product Data

– As-Built Record of Equipment and Materials

▪ Two copies of the record listing the as-built materials and equipment incorporated into the construction of the project.

– Construction Warranty Management Plan

▪ Three sets of the construction warranty management plan containing information relevant to the warranty of materials and equipment incorporated into the construction project, including the starting date of warranty of construction. Furnish with each warranty the name, address, and telephone number of each of the guarantor's representatives nearest to the project location.

– Warranty Tags

▪ Two record copies of the warranty tags showing the layout and design.

– Final Cleaning

▪ Two copies of the listing of completed final clean-up items.

1.2. PROJECT RECORD DOCUMENTS

1.2.1. As-Built Drawings – G

An as-built drawing is a construction drawing revised to reflect the final as-built conditions of the project as a result of modifications and corrections to the project design required during construction. The final as-built drawings shall not have the appearance of marked up drawings, but that of professionally prepared drawings as if they were the "as designed" drawings.

1.2.2. Maintenance of As-Built Drawings

1.2.2.1. The Configuration Management Plan shall describe how the Contractor will maintain up-to-date drawings, how it will control and designate revisions to the drawings and specifications (In accordance with Special Contract Requirement: ***Deviating from the Accepted Design*** and Section 01 33 16: ***Design after Award***, the Designer of Record's approval is necessary for any revisions to the accepted design).

1.2.2.2. Make timely updates, carefully maintaining a record set of working as-built drawings at the job site, marked in red, of all changes and corrections from the construction drawings. Enter changes and corrections on drawings promptly to reflect "Current Construction". Perform this update no less frequently than weekly for the blue line drawings and update no less frequently than quarterly for the CADD/CAD and BIM files, which were prepared previously in accordance with Section 01 33 16. Include a confirmation that the as-builts are up to date with the submission of the monthly project schedule.

1.2.2.3. If the DB Contractor fails to maintain the as-built drawings as required herein, the Government will retain from the monthly progress payment, an amount representing the estimated monthly cost of maintaining the as-built drawings. Final payment with respect to separately priced facilities or the contract as a whole will be withheld until the Contractor submits acceptable as-built drawings and the Government approves them.

1.2.2.4. The marked-up set of drawings shall reflect any changes, alterations, adjustments or modifications. Changes must be reflected on all sheets affected by the change. Changes shall include marking the drawings to reflect structural details, foundation layouts, equipment sizes, and other extensions of design.

1.2.2.5. Typically, room numbers shown on the drawings are selected for design convenience and do not represent the actual numbers intended for use by the end user. Final as-built drawings shall reflect actual room numbers adopted by the end user.

1.2.2.6. If there is no separate contract line item (CLIN) for as-built drawings, the Government will withhold the amount of $35,000, or 1% of the present construction value, whichever is the greater, until the final as-built drawing submittal has been approved by the Government.

1.2.3. Underground Utilities

The drawings shall indicate, in addition to all changes and corrections, the actual location, kinds and sizes of all sub-surface utility lines. In order that the location of these lines and appurtenances may be determined in the event the surface openings or indicators become covered over or obscured, the as-built drawings shall show, by offset dimensions to two permanently fixed surface features, the end of each run including each change in direction. Locate Valves, splice boxes and similar appurtenances by dimensioning along the utility run from a reference point. Record average elevation of the top of each run or underground structure..

1.2.4. Partial Occupancy

For projects where portions of construction are to be occupied or activated before overall project completion, including portions of utility systems, supply as-built drawings for those portions of the facility being occupied or activated at the time the facility is occupied or activated. Show this same as-built information previously furnished on the final set of as-built drawings.

1.2.5. As-Built Conditions That are Different From the construction Drawings

Accurately reflect all as-built conditions that are different, such as dimensions, road alignments and grades, and drainage and elevations, from the construction drawings on each drawing. If the as-built condition is accurately reflected on a shop drawing, then furnish that shop drawing in CADD format. Reference the final as-built construction drawing the shop drawing file that includes the as-built information. In turn, the shop drawing shall reference the applicable construction as-built drawing. Delete any options shown on drawings and not selected clearly reflect options selected on final as-built drawings.

1.2.6. Additional As-Built Information that Exceeds the Detail Shown on the construction Drawings:

These as-built conditions include those that reflect structural details, foundation layouts, equipment, sizes, mechanical and electrical room layouts and other extensions of design, that were not shown in the project design documents because the exact details were not known until after the time of approved shop drawings. It is recognized that these shop drawing submittals (revised showing as-built conditions) will serve as the as-built record without actual incorporation into the construction drawings, piping, and equipment drawings. Include locations of all explorations, logs of all explorations, and results of all laboratory testing, including those provided by the Government. Furnish all such shop drawings in CADD /CADformat. Include fire protection details, such as wiring, performed for the design of the project.

1.2.7. Final As-Built Drawings

Submit final as-built CADD/CAD and BIM Model(s) and Facility Data files at the time of Beneficial Occupancy of the project or at a designated phase of the project. In the event the Contractor accomplishes additional work after this submittal, which changes the as-built conditions, submit a new DVD with all drawing sheets and three blue-line copies of affected sheets which depict additional changes.

1.2.8. Title Blocks

In accordance with the configuration management plan, clearly mark title blocks to indicate final as-built drawings.

1.2.9. Other As-Built Documents

Provide scans of all other documents such as design analysis, catalog cuts, certification documents that are not available in native electronic format in an organized manner in Adobe.pdf format.

1.2.9.1. LEED Documentation

Update LEED documentation on at least a monthly basis and have it available for review by the Government on the jobsite at all times during construction. Submit the final LEED Project Checklist(s), final LEED submittals checklist and complete project documentation, verifying the final LEED score and establishing the final rating. Provide full support to the validation review process, including credit audits. See also the LEED documentation requirements in Section 01 33 16, DESIGN AFTER AWARD.

1.2.9.2. GIS Documentation

Provide final geo-referenced GIS database of the new building footprint along with any changes made to exterior of the building. The intent of capturing the final building footprint and exterior modifications in a GIS database is to provide the installation with a data set of the comprehensive changes made to the landscape as a result of the construction project. The Government will incorporate this data set into the installations existing GIS MasterPlan or Enterprise GIS system. The GIS database deliverable shall follow a standard template provided to the Contractor by the Government, adhere to detailed specifications outlined in ECB No 2006-15, and be documented using the Federal Geographic Data Committee (FGDC) metadata standard.

1.3. EQUIPMENT DATA

1.3.1. Real Property Equipment

Provide an Equipment-in-Place list of all installed equipment furnished under this contract. Include all information usually listed on manufacturer's name plate. Include the cost of each piece of installed property F.O.B. construction site. For each of the items which is specified herein to be guaranteed for a specified period from the date of acceptance thereof, provide the following information: The name, serial and model number address of equipment supplier, or manufacturer originating the guaranteed item. The Contractor's guarantee to the Government of these items will not be limited by the terms of any manufacturer's guarantee to the Contractor. Furnish the list as one (1) reproducible and three (3) copies thirty (30) calendar days before completion of any segment of the contract work which has an incremental completion date.

1.3.2. Maintenance and Parts Data

Furnish a brochure, catalog cut, parts list, manufacturer's data sheet or other publication showing detailed parts data on all other equipment subject to repair and maintenance procedures not otherwise required in Operations and Maintenance Manuals specified elsewhere in this contract. Distribution of directives shall follow the same requirements as listed in paragraph above.

1.3.3. Construction Specifications

Furnish permanent electronic files of final as-built construction specifications, including modifications thereto, with the as-built drawings.

1.4. CONSTRUCTION WARRANTY MANAGEMENT

1.4.1. Prior to the end of the one year warranty, the Government may conduct an infrared roof survey on any project involving a membrane roofing system. This survey will be conducted in accordance with ASTM C1153-90, "Standard Practice for Location of Wet Insulation in Roofing Systems Using Infrared Imaging". The Contractor shall replace all damaged materials and locate and repair sources of moisture penetration.

1.4.2. Management

1.4.2.1. Warranty Management Plan

Develop a warranty management plan containing information relevant to the clause ***Warranty of Construction*** in FAR 52.246-21. Submit the warranty management plan for Government approval at least 30 days before the planned pre-warranty conference. In the event of phased turn-over of the contract, update the Warranty Management Plan as necessary to include latest information required. Include all required actions and documents to assure that the Government receives all warranties to which it is entitled. The plan shall be in narrative form and contain sufficient detail to render it suitable for use by future maintenance and repair personnel, whether tradesmen, or of engineering background, not necessarily familiar with this contract. The term "status" as indicated below shall include due date and whether item has been submitted or was accomplished. Submit warranty information made available during the construction phase prior to each monthly pay estimate. Assemble information in a binder and turn over to the Government upon acceptance of the work. The construction warranty period shall begin on the date of project acceptance and shall continue for the full product warranty period. The Contractor, Government, including the Customer Representative shall jointly conduct warranty inspections, 4 months and 9 months, after acceptance. The warranty management plan shall include, but shall not be limited to, the following information:

(1) Roles and responsibilities of all personnel associated with the warranty process, including points of contact and telephone numbers within the organizations of the contractors, subcontractors, manufacturers or suppliers involved.

(2) Listing and status of delivery of all Certificates of Warranty for extended warranty items, to include roofs, HVAC balancing, pumps, motors, transformers, and for all commissioned systems such as fire protection and alarm systems, sprinkler systems, lightning protection systems, etc.

(3) A list for each warranted equipment, item, feature of construction or system indicating:

(i) Name of item.

(ii) Model and serial numbers.

(iii) Location where installed.

(iv) Name and phone numbers of manufacturers or suppliers.

(v) Names, addresses and telephone numbers of sources of spare parts.

(vi) Warranties and terms of warranty. Include one-year overall warranty of construction. Indicate those items, which have extended warranties with separate warranty expiration dates.

(vii) Cross-reference to warranty certificates as applicable.

(viii) Starting point and duration of warranty period.

(ix) Summary of maintenance procedures required to continue the warranty in force.

(x) Cross-reference to specific pertinent Operation and Maintenance manuals.

(xi) Organization, names and phone numbers of persons to call for warranty service.

(xii) Typical response time and repair time expected for various warranted equipment.

(4) The Contractor's plans for attendance at the 4 and 9 month post-construction warranty inspections conducted by the Government.

(5) Procedure and status of tagging of all equipment covered by extended warranties.

(6) Copies of instructions to be posted near selected pieces of equipment where operation is critical for warranty and/or safety reasons.

1.4.3. Performance Bond

1.4.3.1. The Contractor's Performance Bond will remain effective throughout the construction warranty period.

1.4.3.2. In the event the Contractor or his designated representative(s) fails to commence and diligently pursue any work required under this clause, and in a manner pursuant to the requirements thereof, the Government shall have

a right to demand that said work be performed under the Performance Bond by making written notice on the surety. If the surety fails or refuses to perform the obligation it assumed under the Performance Bond, the Government shall have the work performed by others, and after completion of the work, may make demand for reimbursement of any or all expenses incurred by the Government while performing the work, including, but not limited to administrative expenses.

1.4.3.3. In the event sufficient funds are not available to cover the construction warranty work performed by the Government at the Contractor's expense, the Government will have the right to recoup expenses from the bonding company.

1.4.3.4. Following oral or written notification of required warranty repair work, the Contractor will respond as dictated by para. 1.4.5. Written verification will follow oral instructions. Failure of the Contractor to respond will be cause for the Government to proceed against the Contractor as outlined in the paragraph 1.4.5.5 and/or above.

1.4.4. Pre-Warranty Conference

Prior to contract completion, or completion of any phase or portion of contract to be turned over, and at a time designated by the Contracting Officer, the Contractor shall meet with the Government to develop a mutual understanding with respect to the requirements of this clause. Communication procedures for Contractor notification of warranty defects, priorities with respect to the type of defect, reasonable time required for Contractor response, and other details deemed necessary by the Government for the execution of the construction warranty shall be established/reviewed at this meeting. In connection with these requirements and at the time of the Contractor's quality control completion inspection, the Contractor will furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue warranty work action on behalf of the Contractor. This point of contact will be located within the local service area of the warrantied construction, will be continuously available, and will be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of his responsibilities in connection with other portions of this provision.

1.4.5. Contractor's Response to Warranty Service Requirements.

Following Government oral or written notification, which may include authorized installation maintenance personnel, the Contractor shall respond to warranty service requirements in accordance with the "Warranty Service Priority List" and the three categories of priorities listed below. Submit a report on any warranty item that has been repaired during the warranty period. The report shall include the cause of the problem, date reported, corrective action taken, and when the repair was completed. If the Contractor does not perform the construction warranty within the timeframe specified, the Government will perform the work and backcharge the construction warranty payment item established.

1.4.5.1. First Priority Code 1 Perform onsite inspection to evaluate situation, and determine course of action within 4 hours, initiate work within 6 hours and work continuously to completion or relief.

1.4.5.2. Second Priority Code 2 Perform onsite inspection to evaluate situation, and determine course of action within 8 hours, initiate work within 24 hours and work continuously to completion or relief.

1.4.5.3. Third Priority Code 3 All other work to be initiated within 3 work days and work continuously to completion or relief.

1.4.5.4. The "Warranty Service Priority List" is as follows:

- Code 1 - Air Conditioning System

(a) Buildings with computer equipment.

(b) Barracks, mess halls (entire building down).

- Code 2 - Air Conditioning Systems

(a) Recreational support.

(b) Air conditioning leak in part of building, if causing damage.

(c) Air conditioning system not cooling properly

(d) Admin buildings with Automated Data Processing (ADP) equipment not on priority list.

- Code 1 - Doors

(a) Overhead doors not operational.

- Code 1 - Electrical

(a) Power failure (entire area or any building operational after 1600 hours).

(b) Traffic control devices.

(c) Security lights.

(d) Smoke detectors and fire alarm systems

(e) Power or lighting failure to an area, facility, portion of a facility, which may adversely impact health, safety, security, or the installation's mission requirement, or which may result in damage to property.

- Code 2 - Electrical

(a) Power failure (no power) for unoccupied buildings or portions thereof or branch circuits within occupied buildings, not listed as Code 1.

(a) Receptacle and lights, not listed as code 1.

- Code 3 - Electrical

(a) Street, parking area lights

- Code 1 - Gas

(a) Leaks and breaks.

(b) No gas to cantonment area.

- Code 1 - Heat

(a) Area power failure affecting heat.

(b) Heater in unit not working.

- Code 2 Heat

(a) All heating system failures not listed as Code 1.

- Code 3 - Interior

(a) Floor damage

(b) Paint chipping or peeling

- Code 1 - Intrusion Detection Systems - N/A.
- Code 2 - Intrusion Detection Systems other than those listed under Code 1
- Code 1 - Kitchen Equipment

(a) Dishwasher.

(b) All other equipment hampering preparation of a meal.

- Code 2 - Kitchen Equipment

(a) All other equipment not listed under Code 1.

- Code 2 - Plumbing

(a) Flush valves not operating properly

(b) Fixture drain, supply line commode, or water pipe leaking.

(c) Commode leaking at base.

- Code 3 - Plumbing

(a) Leaking faucets

- Code 1 - Refrigeration

(a) Mess Hall.

(b) Medical storage.

- Code 2 - Refrigeration

(a) Mess hall - other than walk-in refrigerators and freezers.

- Code 1 - Roof Leaks

(a) Temporary repairs will be made where major damage to property is occurring.

- Code 2 - Roof Leaks

(a) Where major damage to property is not occurring, check for location of leak during rain and complete repairs on a Code 2 basis.

- Code 1 - Sprinkler System

(a) All sprinkler systems, valves, manholes, deluge systems, and air systems to sprinklers.

- Code 1 - Tank Wash Racks (Bird Baths)

(a) All systems which prevent tank wash.

- Code 1 - Water (Exterior)

(a) Normal operation of water pump station.

- Code 2 - Water (Exterior)

(a) No water to facility.

- Code 1 - Water, Hot (and Steam)

(a) Barracks (entire building).

- Code 2 - Water, Hot

(a) No hot water in portion of building listed under Code 1

1.4.5.5. Should parts be required to complete the work and the parts are not immediately available, the Contractor shall have a maximum of 12 hours after arrival at the job site to provide the Government, with firm written proposals for emergency alternatives and temporary repairs for Government participation with the Contractor to provide emergency relief until the required parts are available on site for the Contractor to perform permanent warranty repair. The Contractors proposals shall include a firm date and time that the required parts shall be available on site to complete the permanent warranty repair. The Government will evaluate the proposed alternatives and negotiate the alternative considered to be in the best interest of the Government to reduce the impact of the emergency condition. Alternatives considered by the Government will include the alternative for the Contractor to "Do Nothing" while waiting until the required parts are available to perform permanent warranty repair. Negotiating a proposal which will require Government participation and the expenditure of Government funds shall constitute a separate procurement action by the using service.

1.4.6. Equipment Warranty Identification Tags

1.4.6.1. Provide warranty identification tags at the time of installation and prior to substantial completion shall provide warranty identification tags on all Contractor and Government furnished equipment which the Contractor has installed.

(a) The tags shall be suitable for interior and exterior locations, resistant to solvents, abrasion, and to fading caused by sunlight, precipitation, etc. These tags shall have a permanent pressure-sensitive adhesive back, and they shall be installed in a position that is easily (or most easily) noticeable. Tag each component of contractor furnished equipment that has differing warranties on its components.

(b) Submit sample tags, representing how the other tags will look, for Government review and approval.

(c) Tags for Warrantied Equipment: The tag for this equipment shall be similar to the following: Exact format and size will be as approved.

EQUIPMENT WARRANTY - CONTRACTOR FURNISHED EQUIPMENT

MFG NAME MODEL NO.

SERIAL NO.

CONTRACT NO.

CONTRACTOR NAME

CONTRACTOR WARRANTY EXPIRES

MFG WARRANTY(IES) EXPIRE

EQUIPMENT WARRANTY - GOVERNMENT FURNISHED EQUIPMENT

MFG NAME MODEL NO.

SERIAL NO.

CONTRACT NO.

DATE EQUIP PLACED IN SERVICE

MFG WARRANTY(IES) EXPIRE

(d) If the manufacturer's name (MFG), model number and serial number are on the manufacturer's equipment data plate and this data plate is easily found and fully legible, this information need not be duplicated on the equipment warranty tag

1.4.6.2. Execution: Complete the required information on each tag and install these tags on the equipment by the time of and as a condition of final acceptance of the equipment.

1.5. MECHANICAL TESTING, ADJUSTING, BALANCING, AND COMMISSIONING

Submit; all reports, statements, certificates, and completed checklists for testing, adjusting, balancing, and commissioning of mechanical systems prior to final inspection and transfer of the completed facility for approval, as specified in applicable technical specification sections.

1.6. OPERATION AND MAINTENANCE MANUALS

1.6.1. General Requirements

1.6.1.1. Inasmuch as the operations and maintenance manuals are required to operate and maintain the facility, the operations and maintenance (O&M) manuals will be considered a requirement prior to substantial completion of any facility to be turned over to the Government. Beneficial occupancy of all or portions of a facility prior to substantial completion will not relieve the Contractor of liquidated damages, if substantial completion exceeds the required completion date.

1.6.1.2. Provide one permanent electronic copy on CD-ROM and 2 hard copies of the Equipment Operating, Maintenance, and Repair Manuals. Provide separate manuals for each utility system as defined hereinafter. Submit Operations and Maintenance manuals for approval before field training or 90 days before substantial completion (whichever occurs earlier). If there is no separate CLIN for O&M Manuals, the Government will withhold an amount representing $20,000, as non-progressed work, until submittal and approval of all O&M manuals are complete.

1.6.2. Definitions

1.6.2.1. Equipment

A single piece of equipment operating alone or in conjunction with other equipment to accomplish a system function.

1.6.2.2. System

A combination of one or more pieces of equipment which function together to accomplish an intended purpose (i.e. HVAC system is composed of many individual pieces of equipment such as fans, motors, compressors, valves, sensors, relays, etc.)

1.6.3. Hard Cover Binders

The manuals shall be hard cover with posts, or 3-ring binders, so sheets may be easily substituted. Print the following identification on the cover: the words "EQUIPMENT OPERATING, MAINTENANCE, AND REPAIR MANUALS," the project name, building number, and an indication of utility or systems covered, the name of the Contractor, and the Contract number. Manuals shall be approximately 8-1/2 by 11-inches with large sheets folded in and capable of being easily pulled out for reference. All manuals for the project must be similar in appearance, and be of professional quality.

1.6.4. Warning Page

Provide a warning page to warn of potential dangers (if they exist, such as high voltage, toxic chemicals, flammable liquids, explosive materials, carcinogens, high pressures, etc.). Place the warning page inside the front cover and in front of the title page. Include any necessary Material Safety Data Sheets (MDSD) here.

1.6.5. Title Page

The title page shall include the same information shown on the cover and show the name of the preparing firm and the date of publication.

1.6.6. Table of Contents

Each volume of the set of manuals for this project shall include a table of contents, for the entire set, broken down by volume.

1.6.7. GENERAL

Organize manuals according to the following format, and include information for each item of equipment Submit a draft outline and table of contents for approval at 50% contract completion.

TABLE OF CONTENTS

PART I: Introduction

- Equipment Description
- Functional Description
- Installation Description

PART II: Operating Principles

PART III: Safety

PART IV: Preventive Maintenance

- Preventive Maintenance Checklist, Lubrication
- Charts and Diagrams

PART V: Spare Parts Lists

- Troubleshooting Guide
- Adjustments
- Common Repairs and Parts Replacement

PART VI: Illustrations

1.6.7.1. Part I-Introduction

Part I shall provide an introduction, equipment or system description, functional description and theory of operation, and installation instructions for each piece of equipment. Include complete instructions for uncrating, assembly, connection to the power source and pre-operating lubrication in the installation instructions as applicable. Illustrations, including wiring and cabling diagrams, are required as appropriate in this section. Include halftone pictures of the equipment in the introduction and equipment description, as well as system layout drawings with each item of equipment located and marked. Do not use copies of previously submitted shop drawings in these manuals.

1.6.7.2. Part II-Operating Principles

Part II shall provide complete instructions for operating the system, and each piece of equipment. Illustrations, halftone pictures, tables, charts, procedures, and diagrams are required when applicable. This will include step-by-step procedures for start-up and shutdown of both the system and each component piece of equipments, as well as adjustments required to obtain optimum equipment performance, and corrective actions for malfunctions. Show performance sheets and graphs showing capacity data, efficiencies, electrical characteristics, pressure drops, and flow rates here, also. Marked-up catalogs or catalog pages do not satisfy this requirement. Present performance information as concisely as possible with only data pertaining to equipment actually installed. Include actual test data collected for Contractor performance here.

1.6.7.3. Part III-Safety

Part III shall contain the general and specific safety requirements peculiar to each item of equipment. Repeat safety information as notes cautions and warnings in other sections where appropriate to operations described.

1.6.7.4. Part IV-Preventive Maintenance

Part IV shall contain a troubleshooting guide, including detailed instructions for all common adjustments and alignment procedures, including a detailed maintenance schedule. Also include a diagnostic chart showing symptoms and solutions to problems. Include test hookups to determine the cause, special tools and test equipment, and methods for returning the equipment to operating conditions. Information may be in chart form or in tabular format with appropriate headings. Include instructions for the removal, disassembly, repair, reassembly, and replacement of parts and assemblies where applicable and the task is not obvious.

1.6.7.5. Part V-Spare Parts List

Part V shall contain a tabulation of description data and parts location illustrations for all mechanical and electrical parts. The heading of the parts list shall clearly identify the supplier, purchase order number, and equipment. Include the unit price for each part. List parts by major assemblies, and arrange the listing in columnar form. Include names and addresses of the nearest manufacturer's representatives, as well as any special warranty information. Provide a list of spare parts that are recommended to be kept in stock by the Government installation.

1.6.7.6. Part VI-Illustrations

Part VI shall contain assembly drawings for the complete equipment or system and for all major components. Include complete wiring diagrams and schematics. Other illustrations, such as exploded views, block diagrams, and cutaway drawings, are required as appropriate.

1.6.8. Framed Instructions

Post framed instructions are required for substantial completion. Post framed instructions under glass or in laminated plastic, including wiring and control diagrams showing the complete layout of the entire system, including equipment, ductwork, piping valves, dampers, and control sequence at a location near the equipment described. Prepare condensed operating instructions explaining preventive maintenance procedures methods of checking the system for normal safe operation, valve schedule and procedures for safely starting and stopping the system in type form, framed as specified above for the wiring and control diagrams and posted beside the diagrams. Submit proposed diagrams, instructions, and other sheets prior to posting. Post the framed instructions before field training.

1.6.9. (Reserved. See 1.7 for Field Training)

1.6.10. System/Equipment Requirements

1.6.10.1. Facility Heating System

Provide information on the following equipment: boilers, water treatment, chemical feed pumps and tanks, converters, heat exchangers, pumps, unit heaters, fin-tube radiation, air handling units (both heating only and heating and cooling), and valves (associated with heating systems).

1.6.10.2. Air-Conditioning Systems

Provide information in chillers, packaged air-conditioning equipment, towers, water treatment, chemical feed pumps and tanks, air-cooled condensers, pumps, compressors, air handling units, and valves (associated with air-conditioning systems).

1.6.10.3. Temperature Control and HVAC Distribution Systems

Provide all information described for the following equipment: valves, fans, air handling units, pumps, boilers, converters and heat exchangers, chillers, water cooled condensers, cooling towers, and fin-tube radiation, control air compressors, control components (sensors, controllers, adapters and actuators), and flow measuring equipment.

1.6.10.4. Central Heating Plants

Provide the information described for the following equipment: boilers, converters, heat exchangers, pumps, fans, steam traps, pollution control equipment, chemical feed equipment, control systems, fuel handling equipment, de-aerators, tanks (flash, expansion, return waters, etc.), water softeners, and valves.

1.6.10.5. Heating Distribution Systems

Provide the information described for the following equipment: valves, fans, pumps, converters and heat exchangers, steam traps, tanks (expansion, flash, etc.), and piping systems.

1.6.10.6. Exterior Electrical Systems

Provide information on the following equipment: power transformers, relays, reclosers, breakers, and capacitor bank controls.

1.6.10.7. Interior Electrical Systems

Provide information on the following equipment: relays, motor control centers, switchgear, solid state circuit breakers, motor controller, EPS lighting systems, wiring diagrams and troubleshooting flow chart on control systems, and special grounding systems.

1.6.10.8. Energy Monitoring and Control Systems

The maintenance manual shall include descriptions of maintenance for all equipment, including inspection, periodic preventative maintenance, fault diagnosis, and repair or replacement of defective components.

1.6.10.9. Domestic Water Systems

Provide the identified information on the following equipment: tanks, unit process equipment, pumps, motors, control and monitoring instrumentation, laboratory test equipment, chemical feeders, valves, switching gear, and automatic controls.

1.6.10.10. Wastewater Treatment Systems

Provide the identified information on the following equipment: tanks, unit process equipment, pumps, motors, control and monitoring instrumentations, laboratory test equipment chemical feeders, valves, scrapers, skimmers, comminutors, blowers, switching gear, and automatic controls.

1.6.10.11. Fire Protection Systems

Provide information on the following equipment: alarm valves, manual valves, regulators, foam and gas storage tanks, piping materials, sprinkler heads, nozzles, pumps, and pump drivers.

1.6.10.12. Fire Alarm and Detection Systems

(1) The maintenance manual shall include description of maintenance for all equipment, including inspection, periodic preventive maintenance, fault diagnosis, and repair or replacement of defective components.

(2) Provide all software; database with complete identification of programmable portions of system equipment and devices, and all other system programming data on all modes of the system; connecting cables; and proprietary equipment necessary for the operation, maintenance, testing, repair and programming, etc. of the system and that may be required for implementation of future changes to the fire system (additional and/or relocated initiating devices, notification devices, etc.

(3) Provide all system and equipment technical data and computer software with the requisite rights to Government use, in accordance with the applicable contract clauses.

(4) Training shall include software and programming required for the effective operation, maintenance, testing, diagnostics and expansion of the system.

1.6.10.13. Plumbing Systems

Provide information on the following equipment: water heaters, valves, pressure regulators backflow preventors, piping materials, and plumbing fixtures.

1.6.10.14. Liquid Fuels Systems

Provide information on the following equipment: tanks, automatic valves manual valves, filter separators, pumps, mechanical loading arms, nozzles, meters, electronic controls, electrical switch gear, and fluidic controls.

1.6.10.15. Cathodic Protection Systems

Provide information on the following material and equipment: rectifiers, meters, anodes, anode backfill, anode lead wire, insulation material and wire size, automatic controls (if any), rheostats, switches, fuses and circuit breakers, type and size of rectifying elements, type of oil in oil-immersed rectifiers, and rating of shunts.

1.6.10.16. Generator Installations

Provide information on the following equipment: generator sets, automatic transfer panels, governors, exciters, regulators starting systems, switchgear, and protective devices.

1.6.10.17. Miscellaneous Systems

Provide information on the following: communication and ADP systems, security and intrusion alarm, elevators, material handling, active solar, photovoltaic, nurse call, paging, intercom, closed circuit TV, irrigation, sound and material delivery systems, kitchen, refrigeration, disposal, ice making equipment, and other similar type special systems not otherwise specified.

1.6.10.18. Laboratory, Environmental and Pollution Control Systems

Provide information on the following equipment: wet scrubbers, quench chambers, scrub tanks, liquid oil separators, and fume hoods.

1.7. FIELD TRAINING

Field Training is a requirement for substantial completion. Conduct a training course for the operating staff for each particular system. Conduct the training is to be conducted during hours of normal working time after the system is functionally complete. The field instructions shall cover all of the items contained in the Equipment Operating, Maintenance and Repair Manuals. The training will include both classroom and "hands-on" training. Submit a lesson plan outlining the information to be discussed during training periods. Submit this lesson plan for approval 90 days before contract completion before the field training occurs. Record training on DVD and furnish to the Government within ten (10) days following training. Document all training and furnish a list of all attendees.

1.8. PRICING OF CONTRACTOR-FURNISHED AND INSTALLED PROPERTY AND GOVERNMENT-FURNISHED CONTRACTOR-INSTALLED PROPERTY

Promptly furnish and require any sub-contractor or supplier to furnish, in like manner, unit prices and descriptive data required by the Government for Property Record purposes of fixtures and equipment furnished and/or installed by the Contractor or sub-contractor, except prices do not need to be provided for Government-Furnished Property.

1.9. LEED REVIEW MEETINGS

1.9.1. Pre-Closeout Meeting. Approximately 30 days before submittal of LEED closeout documentation, the Contractor and the Government's project delivery team (including Installation representative) will meet to review the documentation, determine which, if any, credits will be audited and identify any corrections/missing items prior to the closeout LEED documentation submittal.

1.9.2. Approximately 14 days after submittal of LEED closeout documentation, the Contractor and the Government's project delivery team (including Installation representative) will meet to review the LEED closeout

documentation. The review conference will include discussion of and resolution of all review comments to ensure consensus on achievement of credits and satisfactory documentation. At the review conference a final score will be determined and endorsed in writing by all parties.

1.10. RED ZONE MEETING

At approximately 80% of contract completion or 60 days before the anticipated Beneficial Occupancy Date (BOD), whichever occurs first, the Contractor and the Government's project delivery team will conduct what is known as the Red Zone Meeting to discuss the close-out process, to schedule the events and review responsibilities for actions necessary to produce a timely physical, as well as fiscal, project close-out. The Red Zone meeting derives its name from the football term used to describe the team effort to move the ball the last 20 yards into the end zone. The close-out of a construction project sometimes can be equally as hard and most definitely requires the whole team's efforts. The ACO will chair the meeting. If not already provided, shortly before the meeting, the Contractor shall provide an electronic copy or access to the CADD as-built drawings, completed commensurate with the amount of work completed at the time of the Red Zone Meeting, as an indicator of the Contractors' understanding of and ability to meet the USACE CADD Standards and to ensure that the Contractor is making progress with CADD As-Built requirements. EXHIBIT 1 is a generic meeting checklist.

1.11. FINAL CLEANING

Clean the premises in accordance with FAR clause 52.236-12 and additional requirements stated here. Remove stains, foreign substances, and temporary labels from surfaces. Vacuum carpet and soft surfaces. Clean equipment and fixtures to a sanitary condition. Clean or replace filters of operating equipment if cleaning isn't possible or practicable. Remove debris from roofs, drainage systems, gutters, and downspouts. Sweep paved areas and rake clean landscaped areas. Remove waste, surplus materials, and rubbish from the site. Remove all temporary structures, barricades, project signs, fences and construction facilities. Submit a list of completed clean-up items on the day of final inspection.

1.12. INTERIM FORM DD1354 "TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY

Near the completion of Project, but a minimum of 60 days prior to final acceptance of the work, complete, update draft provided with the final design package(s) (see Section 01 33 16, paragraph 3.7.5) and submit an accounting of all installed property on Interim Form DD1354 "Transfer and Acceptance of Military Real Property." Include any additional assets/improvements/alterations and cost updates from the Draft DD Form 1354. Contact the COR for any project specific information necessary to complete the DD Form 1354. This form will be a topic for the Red Zone Meeting discussed above. For information purposes, a blank DD Form 1354 (fill-able) in ADOBE (PDF) may be obtained at the following web site: http://www.dtic.mil/whs/directives/infomgt/forms/eforms/dd1354.pdf Submit the completed Checklist for Form DD1354 of Government-Furnished and Contractor-Furnished/Contractor Installed items. Attach this list to the updated DD Form 1354. Instructions for completing the form and a blank checklist (fill-able) in ADOBE (PDF) may be obtained at the following web site:
http://www.wbdg.org/ccb/DOD/UFC/ufc_1_300_08.pdf

EXHIBIT 1

SAMPLE

Red Zone Meeting Checklist

Date:_____

Contract No.	
Description / Location	
Contractor	
Contracting Officer	

Action	**Completion Milestone**	√
Inspections		
Fire		
Safety		
Pre-final		
Mechanical Test & Balance		
Commissioning		
Landscaping Complete		
Erosion Control		
Beneficial Occupancy Date (BOD)		
Furniture Installation		
Comm Installation		
As-Built Drawings		
Provide all O&M manuals, tools, shop drawings, spare parts, etc. to customer		
Training of O&M Personnel		
Provide Warranty documents to Customer		
Contract completion		

Ribbon cutting		
Payroll Clearances		
DD Form 2626 - Construction Contractor Performance Evaluation		
DD Form 2631 – A-E Performance Rated after Construction		
Status of Pending Mods and REA's/Claims		
Final Payment Completed		
Release of Claims		
Return of Unobligated Funds		
Move Project from CIP to General Ledger		
Financial completion		

End of Section 01 78 02.00 10

PRELIMINARY SOILS INFORMATION REPORT
EN BATTALION HQ-SOUTH (FY11)
FORT CARSON, COLORADO

1. Scope

This report presents preliminary subsurface information on soil and bedrock conditions in the vicinity of the EN Battalion HQ-South project at Fort Carson, Colorado. Information in this report is based on results of field observations and laboratory testing. The report is intended for informational purposes and does not contain sufficient information for final design. It may however be utilized for preliminary design and to supplement information obtained during site-specific subsurface investigations and analyses required of the Design/Build Contractor to support final design. The final investigation scope is described in the Request For Proposal; specific conditions that must be investigated and addressed prior to final design, typical practices, and recommended features are also described herein.

This report also contains information regarding the EAB EN COF and TEMF which were constructed in FY08.

2. Proposed Construction

The project scope at the time of report preparation involves the construction of an approximately 100 by 100 foot headquarters facility (BN HQ), and associated paved parking areas. The headquarters structure is located northeast of the intersection of Specker Avenue and Barkeley Avenue.

3. Subsurface Investigations

3.1. General

The preliminary field investigation was conducted in October of 2007 and consisted of nine soil borings numbered FC07-26 through FC07-34. Boring locations were arranged as shown on the soil boring location plan in the drawings. Seven borings were advanced to bedrock, with the remaining two advanced to ten feet below the surface since they were located in area that will be paved. Drilling was performed by a U.S. Army Corps of Engineers drill crew with a Gus Pech 1100C drill rig equipped with 4.375-inch inside diameter hollow-stem augers. A 4.25-inch center bit was used to advance the boring. The completed diameter of the borings was approximately 8.5 inches. Holes were backfilled with bentonite pellets and topped with soil obtained during drilling.

3.2. Standard Penetration Tests

Standard penetration tests were taken in all borings at depth intervals of 2.5 feet for the first 10 feet and every 5 feet for the remaining depth of the boring. Standard Penetration Test samples were obtained in accordance with ASTM D 1586-99 "Penetration Test and Split-Barrel Sampling of Soils", using a 140-pound automatic trip hammer. Borings were advanced to either the planned depth or the point at which further penetration of the split-spoon was not possible. As described on the

boring logs, "split-spoon refusal" is defined as an interval where penetration resistance exceeded sixty blows per foot of penetration as this corresponds to a soil consistency where heavy excavation equipment or other non-conventional excavation techniques are necessary.

3.3. Disturbed Sampling

Representative disturbed samples of the subsoils were taken with a 2-inch outside diameter (O.D.) standard steel split spoon sampler using a 140-pound automatic SPT hammer, in accordance with ASTM D 1586-99. Samples were collected every 2.5 feet for the first 10 feet, then every 5 feet for the remaining depth of the hole. Samples were placed in a pint jar and the lid sealed airtight with at least three wraps of electrical tape. Each jar was labeled, denoting the hole and sample number, depth, date collected, and the project name. The jars were placed in wooden boxes that were subsequently labeled with the appropriate project information.

4. Laboratory Testing

Samples with transmittal sheets were shipped to the Terracon Inc. laboratory in Omaha, Nebraska. Tests were performed to determine visual classification, Atterberg Limits, grain size distribution, natural moisture content, sulfate ion content, soil pH, and soil resistivity. All tests were conducted in accordance with ASTM standards and generally accepted geotechnical practices.

Based upon the results of the testing program, the field logs were revised and supplemented. These logs represent an interpretation and compilation of the content of the field logs and the results of the laboratory tests of the field samples. The stratification lines shown on the boring logs represent the approximate boundaries between soil types and may be gradual. Boring logs are included in the RFP amendment package, and are available from the Geotechnical Branch, Soils Section A, of the Omaha District upon request through the Project Manager.

5. Site Conditions

5.1. General Geology

Fort Carson is located on the western edge of the Colorado Piedmont section of the Great Plains Physiographic Province, in the Arkansas River drainage basin. The basin is comprised of dendritic drainage with numerous intermittent streams. Fountain Creek is a major tributary of the Arkansas in this area and drains the northern and eastern portion of Fort Carson by eastward and southeastward flowing tributaries. Other southward flowing tributaries of the Arkansas River drain the southern and southwestern portions of Fort Carson.

The original mantle of Pleistocene sand and gravel has been progressively removed and bordered by stream erosion so the area consists of mesas capped by sand and gravel and bordered by stream valleys. Overburden, where present, generally consists of sands gravels and clays of alluvial origin, or residual soil weathered in place from the shale bedrock. Overburden units include the Nussbaum Alluvium, the Rocky Flats Alluvium, the Verdos Alluvium, an unnamed rock fall deposit, the Slocum Alluvium, and the Louviers Alluvium – all of Pleistocene age,

eolian sands and landslide deposits of the Pleistocene to Holocene, and the Piney Creek Alluvium of Holocene age. The Nussbaum Rocky Flats, Verdos, Slocum, and Louviers alluviums are all poorly sorted, stratified, weathered gravels that form a series of terraces or pediments above the level of major streams. Boulder-containing along the Front Range, these alluviums generally become finer grained and contain more clay and silt to the east. The Piney Creek Alluvium is a clayey to gravelly, humus-rich silt and sand alluvium along all valleys. The rock fall deposit, probably from the Yarmouth Interglacial period, occurs west of state highway 115, the western boundary of Fort Carson. The deposit is composed of granodiorite boulders from a rock fall off of the east face of Cheyenne Mountain. The eolian sand is a fine to coarse windblown sand from the Pinedale and post Pinedale Glaciation. The landslide deposits consist of earth flow and debris slides on steep slopes, along the western side of Fort Carson.

Several geologic formations are present in the area. The Cretaceous Pierre Shale forms the shallow bedrock under the north and eastern third of Fort Carson, including the cantonment area. The Pierre Shale is composed of predominantly of marine shale containing bentonite beds. Large irregular limestone masses, siltstone and sandstone beds also occur within the formation. The south and central third of the post is underlain mostly by the Smokey Hill Shale member of the Cretaceous Niobrara Formation, a calcareous shale with ledge forming limestone and chalk. The western third of Fort Carson is underlain by a series of progressively older formations from east to west, including the Fort Hays Limestone member of the Niobrara Formation through the Permian and Pennsylvanian Fountain Formation, and consist mostly of upturned beds of sandstone, shale, and limestone, in the Timber Mountain area.

5.2. Site-Specific Geology

The overburden soils in the vicinity include mainly clay near or above the transition between low and high plasticity (liquid limit of 50). Underlying the overburden shale bedrock was encountered at depths ranging from 18 to 33 feet below the surface at the COF and TEMF site, with greater depths being reported at lower topographic elevation. Bedrock was encountered at depths between 18 and 23 feet below the surface at the BN HQ site. Standard Penetration Test blow counts in the overburden soils were typically greater than ten blows per foot of penetration. The borings were stopped when two consecutive sampling intervals returned a blow count greater than 60 blows per six-inches of penetration.

5.3. Ground Water

Ground water was not encountered any of the borings at the COF/TEMF site during drilling. It was reported in boring FC07-27 twenty-four hours after drilling at a depth of 9.2 feet below the surface. At the BN HQ site ground water was encountered during drilling at 17.5 and 13.2 feet below the surface in borings FC07-31 and FC07-32, respectively. Twenty-four hours after drilling water was reported at 13.0 and 10.0 feet below the surface, respectively. The presence and depth of ground water in small diameter borings in relatively low permeability soils is difficult to determine during the short time that such borings remain open. The depths indicated on the logs should not be interpreted as static ground water levels for this site, but rather that ground water will likely be present at these or shallower depths. If project features sensitive to ground water depth are planned, the Design/Build Contractor should

consider installing temporary piezometers as part of the final subsurface investigation.

5.4. Seismic Evaluation

The state of Colorado has exhibited a low to moderate frequency of earthquakes in historic time. In reference to the U.S. Army Corps of Engineers Technical Instructions "Seismic Design for Buildings" TI 809-04, dated 31 December 1998, and the Federal Emergency Management Agency (FEMA) publication "NEHRP Recommended Provisions for Seismic Regulations for New Buildings and Other Structures, 1997 Edition", Ft. Carson has a 0.2 second Spectral Response Acceleration (S_s) of 0.18 g and a one second spectral response acceleration (S_1) of 0.06 g. These accelerations were interpolated from 1:5,000,000 scale maps prepared by the U.S. Geologic Survey (USGS), Building Seismic Safety Council (BSSC), and FEMA for 0.2 Sec. Spectral Response Acceleration (5% of Critical Damping), Site Class B, and 1.0 Sec. Spectral Response Acceleration (5% Critical Damping), Site Class B, respectively. For all structures located within regions of the maps having values of S_s greater than 0.15 g, or values of S_1 greater than 0.04 g the spectral response accelerations taken from these maps must be adjusted for site class effects using coefficients provided in the aforementioned guidance. Table 3-1 in TI 809-04, Site Classification, provides six site classes, Class A through Class F, which is defined on various geotechnical parameters (shear wave velocity, Standard Penetration Resistance, or undrained shear strength). For this investigation, shear wave velocity and undrained shear strength were not determined. Therefore, the site classification is based on Standard Penetration Resistance (SPT blow counts). For design purposes, the reference site condition for this project is taken as site class D. This is based on the limited Standard Penetration Resistance (ASTM D 1586) data collected during the investigation and the exception noted for Table 3-1 of TI 809-04 that states "when soil properties are not known in sufficient detail to determine the Site Class, Site Class D shall be used. A Site Class D is used here for the following reason. Table 3-1 of TI 809-04 defines a site class D site as having an average standard penetration resistance ($\overline{N}$) of 15-50 for the top 100 feet of the site profile. Chapter 3 of FEMA 450 defines $\overline{N}$ as the average standard penetration resistance for the top 100 ft of a soil profile. Site class D is used here because the $\overline{N}$ value for all soil borings drilled at the site is 23.4.

The adjusted maximum considered earthquake spectral response acceleration parameters using the Site Class D response coefficients (for $S_s \leq 0.25$ and $S_1 \leq 0.10$) are:

The Short-Period Spectral Acceleration ($S_{MS} = F_a S_S$) is (1.6 x 0.18) = 0.288.

The 1 Second Period Spectral Acceleration ($S_{M1} = F_v S_1$) is (2.4 x 0.06) = 0.144.

6. Subsurface Recommendations

6.1. General

The Design/Build Contractor is responsible for obtaining and evaluating subsurface data necessary to complete design of all project features. The number, locations and depths of soil borings, as well as the types and parameters of geotechnical testing shall be determined by the Design/Build Contractor, consistent with industry standards. The Design/Build Contractor is responsible for obtaining sufficient information to fully characterize surface and subsurface conditions for each project feature to be designed. Included herein are specific conditions that must be investigated and accounted for, typical design values used successfully in the past, as well as recommended design features believed to be appropriate for the soils encountered during the preliminary investigation.

The predominant subsurface condition that must be addressed is the expansive nature of high plasticity clay overburden soils. Expansive clay manifests greatest problems with heaving of pavement, floor slabs and improperly designed shallow footings. In addition to the potential for movement, they exhibit poor engineering and construction properties with regard to achieving and maintaining compaction. Replacement, moisture-conditioning, water-proof coatings and chemical stabilization are common methods of addressing this property. Bedrock consists of highly compacted clay and silt transformed into shale. Specialized excavation using rippers and other heavy equipment is typically necessary if this material is excavated; scrapers and light excavators may not penetrate the surface. Rebound of the exposed shale in especially deep cuts is possible, as is deterioration due to changes in moisture content.

6.2. Typical Foundation Design

Due to the relatively shallow depth of competent bedrock and the potentially expansive nature of overburden soils, a deep foundation should be investigated. Historically drilled cast-in-place piers have been used at the installation. Recently auger-cast piles have been successfully used as they require less time for placement and result in a reduced foundation cost. The final geotechnical investigation should be conducted with the need for a deep foundation in mind.

Drilled piers typically use a combination of end-bearing and side friction and are advanced into competent bedrock a minimum of five feet or two diameters, whichever is greater. When situated in competent shale, piers are typically designed for an end-bearing pressure of 20,000 to 30,000 psf. Side friction for that portion of the pier located below the bedrock surface (i.e. the five foot or two pier diameters penetration into bedrock) is typically approximately 5,000 psf, and for that portion of the shaft between the bedrock surface and 5 feet below the ground surface 2000-3000 psf. The uppermost 5 feet of the shaft is generally discounted for support. The minimum length regardless of depth to bearing is generally ten feet. The depth to competent bedrock should be determined for all structures, bearing in mind the depth may vary across relatively small building footprints. There was a large variation in the reported depth of split-spoon refusal at the COF/TEMF site.

Auger-cast piles are typically designed for end-bearing resistance with a modest additional resistance from that portion within the bedrock. An end-bearing pressure of 25,000 to 30,000 psf for 18-inch diameter piles embedded 5 feet into competent rock is normal. An additional 5,000 psf of lateral resistance for the bedrock socket is used. Deeper penetration into competent rock yields a greater allowable bearing pressure. With an embedment of 10 feet the allowable pressure typically increases to 40,000 to 45,000 psf, again with the same 5,000 psf lateral resistance from the socket. Uplift resistance may be assumed to result from the bedrock socket, and be seventy-five percent of the lateral resistance. For piles subject to tensile forces, full-length reinforcement will be necessary. Piles without a tensile component normally have reinforcing steel in their upper half.

Because of the need to penetrate resistant bedrock, the final geotechnical report should specify any special equipment and procedures for installing and load testing auger-cast piles.

Conventional shallow spread footings are possible in areas where overburden soils are deep enough and do not exhibit significant expansive behavior; however, steps must be taken to protect footings and floors from movement due to expansive soils, or settlement of low strength soils. Footings bearing directly on native clay subgrade are not recommended. Footings bearing on moisture-conditioned and re-compacted native soil are not recommended. Spread footings bearing pressure is generally limited by settlement concerns rather than absolute bearing capacity, and are designed for an excess pressure of 2000-3000 psf. The minimum depth for frost protection is 3.5 feet.

6.3. Floor Slabs

Floor slabs are particularly vulnerable to heave and normally are structurally tied to the foundation system with a void beneath to isolate them from the subgrade in the case of pier foundations. For conventional footings, replacement of some depth of the expansive and/or soft soil below the slab is normally undertaken; the required depth being dependant on the characteristics of the soil. Capillary water and vapor barriers are generally used for slabs bearing on the subgrade.

6.4. Pavement Design

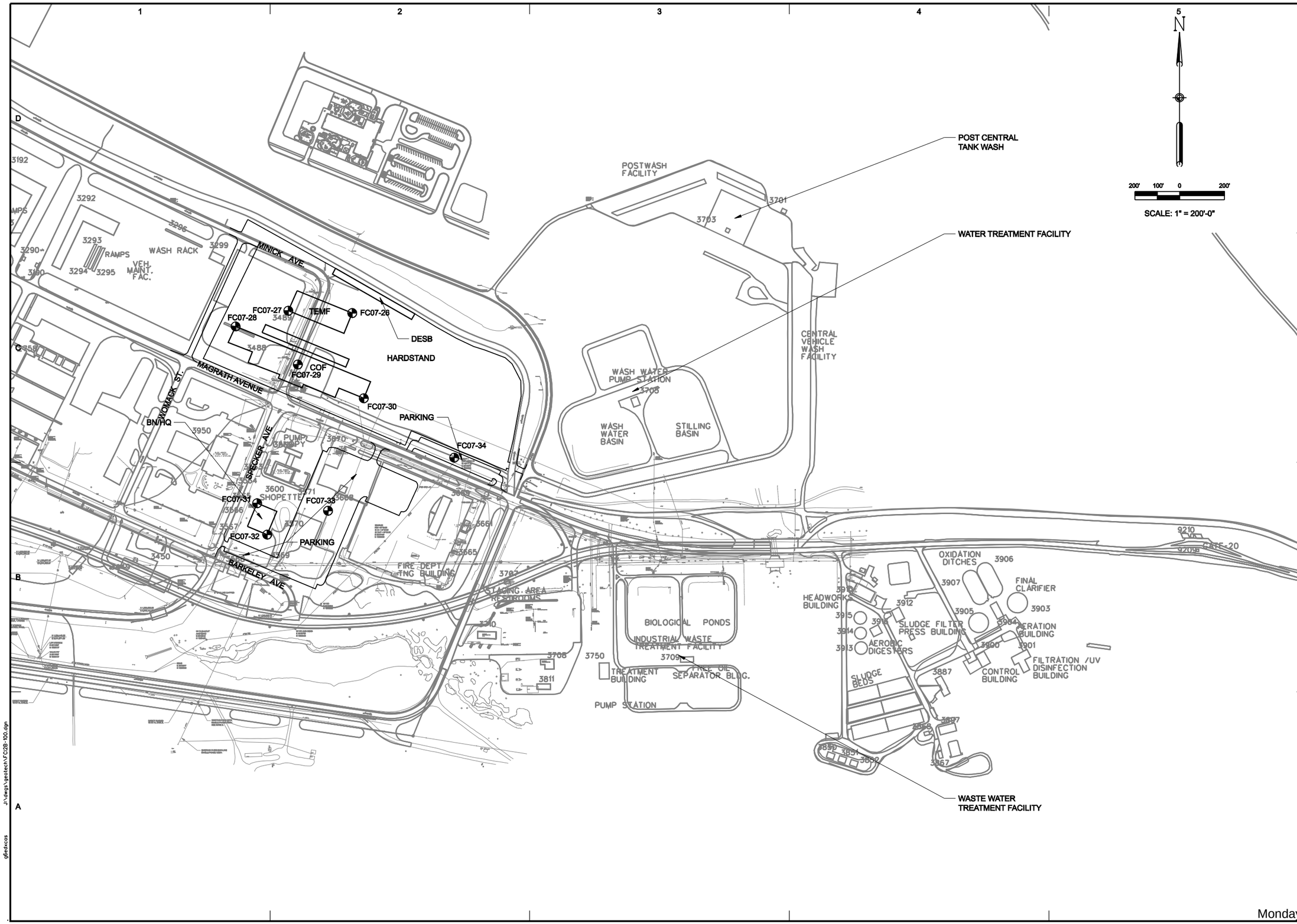
Soil underlying pavement is mainly moderately to highly plastic clay. Where significant grading will take place the surface may consist of weathered shale. These soils typically have a frost design classification of F3, a modulus of subgrade reaction "K" of 100 pci, and a California Bearing Ratio (CBR) value of 5 or less for subgrade compacted to 95 percent of maximum Modified Proctor density per ASTM D 1557 (2002) when frost is not allowed to penetrate the subgrade. Lime stabilization of the subgrade or sealing of the exposed subgrade with a bituminous emulsion along with full-depth asphalt pavement are methods used successfully in previous projects. Sulfate content must be determined as the formation of highly expansive calcium sulfate minerals is possible if special procedures are not followed. An extended “mellowing” sequence and staged lime application are typically used. Reinforcement of the subgrade with geogrid and aggregate layers has also been used. The appropriateness of these or other methods should be investigated for design of the various pavement types utilized for this project.

6.5. Cementing Properties

Sulfate ion content tests were performed on representative samples from site borings. Test results are shown on the boring logs. The data indicate that a variable but generally moderate to high sulfate ion content is present, which is consistent with conditions in the area. These results may be used to evaluate the need for sulfate-resistant concrete. Additional tests should be performed to more fully characterize the site if required by the designer.

6.6. Corrosion Potential

Soil resistivity and pH tests were performed on representative samples from site borings. Test results are shown on the boring logs. The data indicate that a severe corrosion potential exists, which is consistent with conditions in the area. Corrosion protection of all underground metallic utilities will be necessary. Additional tests should be performed to more fully characterize the site if required by the designer.



US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY: CAF
DWN BY: CAF
CKD BY: BNJ
SUBMITTED BY: BNJ
FILE NAME: FC028-100.dgn
SIZE: 33.1X22
PLOT SCALE: 0.667 = 1 IN.
DATE: NOV 2007
SOLICITATION NO.: W912HN-07-X-0001X
CONTRACT NO.: W912BF-07-C-0001X
FILE NUMBER: X
PLOT DATE: 1/30/2008

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
OMAHA, NEBRASKA

EN BN HQ
FORTCARSON, COLORADO
PN 68763 (FY08)

EN COF, TEMF AND BN HQ
SOIL BORING LOCATION PLAN

SHEET IDENTIFICATION NUMBER
B-100

J:\dwgs\geotech\FC028-100.dgn
g6edxcas

FC07-26
OCT. 15, 2007

N	M	LL	PI		
22		57	38	CH	SANDY FAT CLAY, olive brown and white, very stiff, 64% fines, 18% fine sand, 17% medium sand, 1% coarse sand, dry, white mineral
42	15.0			CL	LEAN CLAY, mottled dark grayish brown and white, hard, dry to damp
41	15.8				← Resistivity=138 ohms-cm, pH=7.4, SO_4=0.50%
21				CL	LEAN CLAY WITH SAND, olive brown, very stiff, fines, some fine and medium sand, trace coarse sand, and fine gravel, dry, white mineral
17		54	35	GC	CLAYEY GRAVEL, olive brown and white, medium dense, 41% fines, 4% fine sand, 7% medium sand, 3% coarse sand, 45% coarse gravel, damp
63				CL	SHALE (WEATHERED), olive gray and rust, hard, dry, blocky, white mineral
60+					

Split-Spoon Refusal at 24.4 feet
Ground water table not encountered

FC07-27
OCT. 16, 2007

N	M	LL	PI		
					FILL, red
15				CL	SANDY LEAN CLAY, dark olive brown, very stiff, fines, fine and medium sand, trace coarse sand, and fine gravel, damp to dry
17	20.5			SC	CLAYEY SAND, olive brown, medium dense, fines, fine and medium sand, trace coarse sand and fine gravel, damp
14					
9	16.1			CL	LEAN CLAY, mottled dark grayish brown and white, stiff, moist
10/17 ▽					
11				SC	CLAYEY SAND, olive brown, medium dense, fines, fine and medium sand, trace coarse sand and fine gravel, moist
62				CL	LEAN CLAY, mottled dark grayish brown and white, hard, damp, white mineral, iron oxide, shale fragments
96				CH	SHALE (WEATHERED), very dark grayish brown, hard, dry, iron oxide, white mineral, blocky, thinly bedded
44				CL	SHALE (WEATHERED), olive gray and rust, hard, dry, blocky, white mineral
104				CH	SHALE (WEATHERED), very dark grayish brown, hard, damp, iron oxide, white mineral, blocky
60+				CH	SHALE (WEATHERED), very dark gray, hard, dry, friable, thinly bedded

Split-Spoon Refusal at 38.5 feet

FC07-28
OCT. 16, 2007

N	M	LL	PI		
					GRASS and FILL, red and brown
					ASPHALT
6				CL	LEAN CLAY WITH SAND, olive brown, medium stiff, fines, some fine and medium sand, trace coarse sand, and fine gravel, moist
10					← Resistivity=398 ohms-cm, pH=7.46, SO_4=0.11%
13	18.5			SC	CLAYEY SAND, olive brown, medium dense, fines, fine and medium sand, trace coarse sand and fine gravel, moist
17					← Resistivity=161 ohms-cm, pH=7.23, SO_4=0.44%
17	23.2	56	35	CH	SANDY FAT CLAY, dark grayish brown, very stiff, 64% fines, 18% fine sand, 17% medium sand, 1% coarse sand, moist
16					
13				CH	LEAN CLAY WITH SAND, olive brown, very stiff, fines, some fine and medium sand, trace coarse sand, and fine gravel, moist
20					
47				CH	SHALE (WEATHERED), very dark grayish brown, hard, damp to dry, iron oxide, thinly bedded
60+				CH	SHALE (WEATHERED), very dark gray, hard, dry, friable, thinly bedded
60+					

Split-Spoon Refusal at 43.5 feet
Ground water table not encountered

Depth In Feet: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45

BORING LEGEND

FC07-13	Drill hole number
OCT. 11, 2007	Date boring completed
M	Natural moisture content in percent
LL	Liquid limit
PI	Plasticity index
N	Standard penetration blow count. Number of blows for a 140-pound weight dropping 30 inches, to drive a 2-inch outside diameter sampler, 1 foot.
SO_4	Sulfate ion content in soil, percent
% fines	Percent of soil by dry weight passing the No.200 sieve
- - - -	Approx. Top of Bedrock
10/12▽	Ground water level and date encountered

BORING NOTES

1. The descriptive data at the right of the logs are the results of field and laboratory data. The terms "dry, moist, wet, etc." are field descriptions made by the inspector in the field at the time of drilling. See "M" on the condensed log of borings for laboratory determination of moisture contents for the soil. Laboratory classifications are in accordance with ASTM D 2487.

2. The logs furnished represent the types of soil encountered at their respective locations and the water level encountered at that time. The boring logs are considered representative of the soils which were encountered; however, the water level recorded can fluctuate appreciably at different seasons of the year or from year to year depending largely on climatic conditions. The contractor should satisfy himself as to the ground water conditions he will encounter at the time of construction.

3. Field logs, laboratory classification data, test results of borings, and all related geotechnical studies or reports, are on file in the Omaha District Office and are available for examination by any interested contractor at said office.

4. For Soil Boring Locations, see sheet B-100.

5. Refusal (N=60+) is defined as a cummulative blow count exceeding 60 in any six-inch interval of the Standard Penetration Test (SPT). Once refusal is encountered, the SPT is discontinued.

6. NOTE THAT BORING LOGS INDICATE HARD CLAY SOILS WITH SPT VALUES EXCEEDING 60 WERE ENCOUNTERED.

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
OMAHA, NEBRASKA

DESIGNED BY: C.A.F. | DATE: NOV 2007
DWN BY: C.A.F. | CKD BY: D.S.L. | SOLICITATION NO.: W912DY-X-X-0XXX
SUBMITTED BY: B.N.J. | CONTRACT NO.: W912HN-07-C-0XXX
FILE NAME: FC28-201.dgn | FILE NUMBER:
SIZE: 33.1X22 | PLOT SCALE: 0.1667 ft / IN. | PLOT DATE: 7/30/2008

EN BN HQ
FORTCARSON, COLORADO
PN 66763 (FY08)

SOIL BORING LOGS
DRILL HOLES FC07-26 THROUGH FC07-28

SHEET IDENTIFICATION NUMBER
B-201

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g6ndxcas

FC07-29
OCT. 16, 2007

N	M	LL	PI		
					TOPSOIL, grass and roots
19	11.7			CH	SANDY FAT CLAY, olive brown and white, very stiff, fines, fine and medium sand, trace coarse sand, damp
16				CL	LEAN CLAY WITH SAND, olive brown, very stiff, fines, some fine and medium sand, trace coarse sand, and fine gravel, dry
19				CL	SANDY LEAN CLAY, dark olive brown, very stiff, fines, fine and medium sand, trace coarse sand and fine gravel, dry, white mineral and iron oxide
18				CL	SANDY LEAN CLAY, very dark grayish brown, very stiff, fines and fine sand, some medium sand, dry
19				CH	SANDY FAT CLAY, dark grayish brown, very stiff, fines, fine and medium sand, trace coarse sand, moist
17				SC	CLAYEY SAND, olive brown, medium dense, fines, fine and medium sand, trace coarse sand and fine gravel, moist, iron oxide
19	13.6	38	22	SC	CLAYEY SAND WITH GRAVEL, light olive brown and reddish brown, medium dense to dense, 36% fines, 13% fine sand, 22% medium sand, 10% coarse sand, 4% fine gravel, 15% coarse gravel, wet
30				CH	SHALE (WEATHERED), very dark gray, hard, dry, friable, thinly bedded, trace white mineral
60+					
60+					

Split-Spoon Refusal at 39 feet
Ground water table not encountered

FC07-30
OCT. 15, 2007

N	M	LL	PI		
					TOPSOIL, grass and roots
26	11.3			CH	SANDY FAT CLAY, olive brown and white, very stiff, fines, fine and medium sand, trace coarse sand, dry, roots
30				CL	LEAN CLAY WITH SAND, olive brown, hard, fines, some fine and medium sand, trace coarse sand, and fine gravel, dry, resistivity=249 ohms-cm, pH=7.68, SO =0.10%
41				CH	SANDY LEAN CLAY, dark olive brown, very stiff, fines, fine and medium sand, trace coarse sand and fine gravel
22				CL	SANDY LEAN CLAY, very dark grayish brown, very stiff, fines and fine sand, some medium sand, damp to dry
25				CH	SANDY FAT CLAY, dark grayish brown, very stiff, fines, fine and medium sand, trace coarse sand, dry, white mineral and iron oxide
21				SM	SILTY SAND WITH GRAVEL, reddish brown, medium dense, 13% fines, 13% fine sand, 30% medium sand, 15% coarse sand, 25% fine gravel, 4% coarse gravel, dry, nonplastic
20				SC	CLAYEY SAND WITH GRAVEL, light olive brown and reddish brown, dense, fines, medium sand, coarse gravel, some fine and coarse sand, trace fine gravel, damp
35				CH	SHALE (WEATHERED), very dark gray, hard, damp to dry, thinly bedded, white mineral
68					
60+					
60+					

Split-Spoon Refusal at 43.9 feet
Ground water table not encountered

FC07-31
OCT. 16, 2007

N	M	LL	PI		
					TOPSOIL, grass and roots
20	17.9	57	38	CL	SANDY LEAN CLAY, dark olive brown, very stiff, fines, fine and medium sand, trace coarse sand and fine gravel, dry
20				CH	FAT CLAY, very dark gray, very stiff, dry
28	20.9	55	39	CH	FAT CLAY WITH SAND, mottled dark grayish brown, rust and gray, very stiff, 72% fines, 15% fine sand, 13% medium sand, dry, white mineral, iron oxide
21				CL	LEAN CLAY WITH SAND, olive brown, very stiff, fines, some fine and medium sand, trace coarse sand and fine gravel, damp, iron oxide
10/17					
12		25	7	SC-SM	SILTY CLAYEY SAND, yellowish brown, medium dense, 30% fines, 30% fine sand, 29% medium sand, 10% coarse sand, 1% fine gravel, wet
After Drilling					
During Drilling					
49				CL	SANDY LEAN CLAY, very dark grayish brown, hard, fines and fine sand, some medium sand, damp
60+				CL	SHALE (WEATHERED), very dark gray, hard, damp
60+					

Split-Spoon Refusal at 28.2 feet

BORING LEGEND

FC07-29	Drill hole number
OCT. 16, 2007	Date boring completed
M	Natural moisture content in percent
LL	Liquid limit
PI	Plasticity index
N	Standard penetration blow count. Number of blows for a 140-pound weight dropping 30 inches, to drive a 2-inch outside diameter sampler, 1 foot.
SO_4	Sulfate ion content in soil, percent
% fines	Percent of soil by dry weight passing the No.200 sieve
- - - -	Approx. Top of Bedrock
10/12 ▽	Ground water level and date encountered

BORING NOTES

1. The descriptive data at the right of the logs are the results of field and laboratory data. The terms "dry, moist, wet, etc." are field descriptions made by the inspector in the field at the time of drilling. See "M" on the condensed log of borings for laboratory determination of moisture contents for the soil. Laboratory classifications are in accordance with ASTM D 2487.

2. The logs furnished represent the types of soil encountered at their respective locations and the water level encountered at that time. The boring logs are considered representative of the soils which were encountered; however, the water level recorded can fluctuate appreciably at different seasons of the year or from year to year depending largely on climatic conditions. The contractor should satisfy himself as to the ground water conditions he will encounter at the time of construction.

3. Field logs, laboratory classification data, test results of borings, and all related geotechnical studies or reports, are on file in the Omaha District Office and are available for examination by any interested contractor at said office.

4. For Soil Boring Locations, see sheet B-100.

5. Refusal (N=60+) is defined as a cummulative blow count exceeding 60 in any six-inch interval of the Standard Penetration Test (SPT). Once refusal is encountered, the SPT is discontinued.

6. NOTE THAT BORING LOGS INDICATE HARD CLAY SOILS WITH SPT VALUES EXCEEDING 60 WERE ENCOUNTERED.

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
OMAHA, NEBRASKA

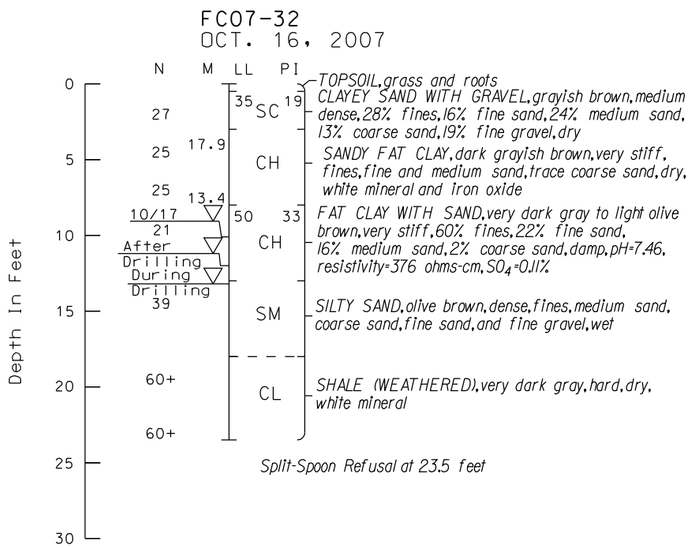
DESIGNED BY: C.A.F. | DWN BY: C.A.F. | CKD BY: G.C.L. | SUBMITTED BY: B.N.H. | FILE NAME: FC28-202.dgn | SIZE: 33.1X22 | PLOT SCALE: 0.1667 ft / in. | DATE: NOV 2007 | SOLICITATION NO.: W912HN-X-XXXX | CONTRACT NO.: W912HN-07-C-0XXX | FILE NUMBER: | PLOT DATE: 1/30/2008

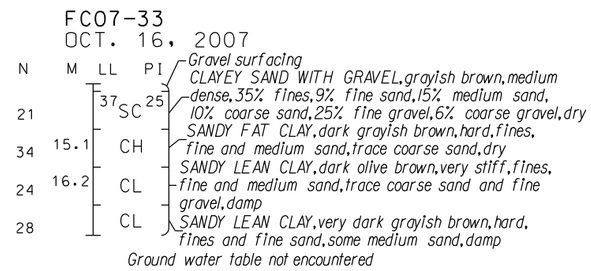
EN BN HQ
FORTCARSON, COLORADO
PN 68763 (FY08)

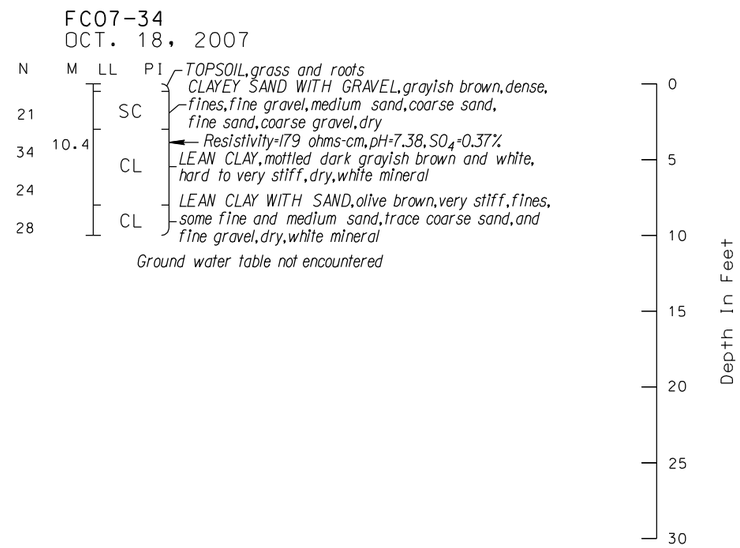
SOIL BORING LOGS
DRILL HOLES FC07-29 THROUGH FC07-31

SHEET IDENTIFICATION NUMBER
B-202

J:\dwgs\geotech\FC28-202.dgn
g6edccas







BORING LEGEND

FC07-31	Drill hole number
OCT. 16, 2007	Date boring completed
M	Natural moisture content in percent
LL	Liquid limit
PI	Plasticity index
N	Standard penetration blow count. Number of blows for a 140-pound weight dropping 30 inches, to drive a 2-inch outside diameter sampler, 1 foot.
SO_4	Sulfate ion content in soil, percent
% fines	Percent of soil by dry weight passing the No.200 sieve
- - - -	Approx. Top of Bedrock
10/12 ▽	Ground water level and date encountered

BORING NOTES

1. The descriptive data at the right of the logs are the results of field and laboratory data. The terms "dry, moist, wet, etc." are field descriptions made by the inspector in the field at the time of drilling. See "M" on the condensed log of borings for laboratory determination of moisture contents for the soil. Laboratory classifications are in accordance with ASTM D 2487.

2. The logs furnished represent the types of soil encountered at their respective locations and the water level encountered at that time. The boring logs are considered representative of the soils which were encountered; however, the water level recorded can fluctuate appreciably at different seasons of the year or from year to year depending largely on climatic conditions. The contractor should satisfy himself as to the ground water conditions he will encounter at the time of construction.

3. Field logs, laboratory classification data, test results of borings, and all related geotechnical studies or reports, are on file in the Omaha District Office and are available for examination by any interested contractor at said office.

4. For Soil Boring Locations, see sheet B-100.

5. Refusal (N=60+) is defined as a cummulative blow count exceeding 60 in any six-inch interval of the Standard Penetration Test (SPT). Once refusal is encountered, the SPT is discontinued.

6. NOTE THAT BORING LOGS INDICATE HARD CLAY SOILS WITH SPT VALUES EXCEEDING 60 WERE ENCOUNTERED.

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
OMAHA, NEBRASKA

DESIGNED BY: C.A.F. | DWN BY: C.A.F. | CKD BY: D.G.L. | SUBMITTED BY: B.N.J. | FILE NAME: FC02B-203.dgn | SIZE: 33.1X22 | PLOT SCALE: 0.1667 ft / IN. | DATE: NOV 2007 | SOLICITATION NO.: W912HN-07-X-XXXX | CONTRACT NO.: W912BF-01-C-00XX | FILE NUMBER: | PLOT DATE: 1/30/2008

EN BN HQ
FORTCARSON, COLORADO
PN 68763 (FY08)

SOIL BORING LOGS
DRILL HOLES FC07-32 THROUGH FC07-34

SHEET IDENTIFICATION NUMBER
B-203

J:\dwgs\geotech\FC02B-203.dgn
g6edxcos

APPENDIX B

LIST OF DRAWINGS

1. APPENDIX J – DRAWINGS

SHEET NUMBER	DESCRIPTION
GI 101	LOCATION PLAN
CD100	SITE DEMOLITION PLAN
CS100	OVERALL CONCEPT SITE PLAN
CS101	CONCEPT SITE PLAN
CU101	UTILITY CONNECTION PLAN
EU101	UTILITY CONNECTION PLAN
LP101	CONCEPT LANDSCAPE PLAN

2. CADD FILES AND CADD FILES ORIGINAL SURVEY:

The CADD survey files and other electronic CADD files as identified below have been included via the .zip file available on CD ROM or provided FTP Site. The other electronic CADD files are provided to assist the Contractor in preparing their proposal. The Contractor shall take all professionally prudent and reasonable actions to verify the accuracy of the data provided and shall assume all liability from the use of these files. The Contractor shall be responsible for obtaining any other software necessary to view the files provided. No other CADD design files will be provided for proposal preparation. CADD files require Microstation V8 software. CADD files for Architectural Floor Plans are provided in Adobe and AutoCAD format. See Section 01 33 16 Design After Award for CAD format required for this solicitation.

DRAWING FILE INDEX

STANDARD CADD FILES	DESCRIPTION
FCP6-G-BS.dgn	Corps Standard Border Sheet (reference file)
FCP6-G-SEED.dgn	Corps Standard 'seed file'

INSTALLATION FILES	DESCRIPTION
FCP6C-bggen.dgn	Fort Carson (existing buildings reference file)
FCP6C-travhgd.dgn	Fort Carson (existing roads reference file)

SITE WORK 'SHEET FILES'	DESCRIPTION
FCP6GI-101.dgn	Location Map (drawing 'sheet file')
FCP6CD-101.dgn	Site Demolition Plan (drawing 'sheet file')
FCP6C-CS-100.dgn	Overall Concept Site Plan (drawing 'sheet file')
FCP6C-CS-101.dgn	Concept Site Plan (drawing 'sheet file')
FCP6CU-101.dgn	Utility Plan (drawing 'sheet file')
FCP6EU-101.DGN	Utility Connection Plan (drawing 'sheet file')
FCP6LP-101.dgn	Concept Landscape Plan (drawing 'sheet file')

SITE / UTILITY REFERENCE FILES	DESCRIPTION
FCP6C-SP-001.dgn	Site Plan (reference file)
FCP6C-XD.001.dgn	Existing Conditions (reference file)
FCP6C-LP-001.dgn	Landscape Plan (reference file)
FCP6M-UP-001.dgn	Utility Plan (reference file)

FCP6EU-101.dgn	Utility Connection Plan (reference file)

ARCHITECTURAL 'SHEET FILES'	**DESCRIPTION**
BN-_LG--SR-_A-FPF1--.dgn	First Floor Plan
BN-_LG--SR-_A-FPF2--[1].dgn	Second Floor Plan

ARCHITECUTURAL REFERENCE	**DESCRIPTION**
BN-_LG--SR-_A-FPF1--.dgn	First Floor Plan (reference file)
BN-_LG--SR-_A-FPF2--[1].dgn	Second Floor Plan (reference file)

APPENDIX C

Utility Connections

Utility connections are shown on the drawings provided in Appendix J.

EN Battalion Headquarters, PN 68763
Fort Carson, Colorado

APPENDIX D

Results of Fire Flow Tests

EN BN HQ

Fire hydrant flow data from the computer model for the west side of the facility as follow:

Static pressure 80 psi
Residual pressure 72 psi
Residual flow 1000 gpm

Flow hydrant #3950A is located at the intersection of Weston Street and Barkley Ave. Test hydrant # 3956 is north of the flow hydrant and on the west side of Weston Street. Hydrant numbers are based on the installation utility drawings.

7413(a)(3) and 7413(d), has assessed a civil penalty for these violations:

249 South 51st Avenue, Phoenix, AZ 85043;
808 County Road, Monett, MO 65708;
200 Economic Drive, Commerce, TX 75248.

EPA will not issue an order in this proceeding prior to the close of the public comment period.

Dated: January 20, 2010.

Bernadette Rappold,

Director, Special Litigation and Projects Division, Office of Enforcement and Compliance Assurance.

[FR Doc. 2010–1741 Filed 1–27–10; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[FRL–9107–3, EPA–HQ–OW–2008–0238]

Modification to 2008 National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated With Construction Activities

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: EPA Regions 1, 2, 3, 5, 6, 7, 8, 9, and 10 today are modifying the 2008 National Pollutant Discharge Elimination System (NPDES) general permits for stormwater discharges associated with construction activity in order to extend by one year the expiration date of the permit. Hereinafter, these NPDES general permits will be referred to as "permit" or "2008 construction general permit" or "2008 CGP." The 2008 CGP was originally issued for a period of two (2) years. Today, EPA is modifying the CGP in order to extend the 2 year term of the 2008 CGP by one year so that it expires on June 30, 2011, instead of June 30, 2010, resulting in a permit that will be in effect for a total period of three (3) years. By Federal law, no NPDES permit may be issued for a period that exceeds five (5) years.

DATES: EPA is modifying its 2008 Construction General Permit by extending the permit by one year. This permit modification is effective on January 20, 2010. The 2008 Construction General Permit will now expire on midnight June 30, 2011, instead of June 30, 2010.

FOR FURTHER INFORMATION CONTACT: Greg Schaner, Water Permits Division, Office of Wastewater Management (Mail Code: 4203M), Environmental Protection Agency, 1200 Pennsylvania Avenue, NW., EPA East, Washington, DC 20460; telephone number: (202) 564–0721; fax number: (202) 564–6431; e-mail address: *schaner.greg@epa.gov.*

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does This Action Apply to Me?

If a discharger chooses to apply for coverage under the 2008 CGP, the permit provides specific requirements for preventing contamination of stormwater discharges from the following construction activities:

Category	Examples of affected entities	North American Industry Classification System (NAICS) code
Industry	Construction site operators disturbing 1 or more acres of land, or less than 1 acre but part of a larger common plan of development or sale if the larger common plan will ultimately disturb 1 acre or more, and performing the following activities:	
	Building, Developing and General Contracting	233
	Heavy Construction	234

EPA does not intend the preceding table to be exhaustive, but provides it as a guide for readers regarding entities likely to be regulated by this action. This table lists the types of activities that EPA is now aware of that could potentially be affected by this action. Other types of entities not listed in the table could also be affected. To determine whether your facility is affected by this action, you should carefully examine the definition of "construction activity" and "small construction activity" in existing EPA regulations at 40 CFR 122.26(b)(14)(x) and 122.26(b)(15), respectively. If you have questions regarding the applicability of this action to a particular entity, consult the person listed for technical information in the preceding "**FOR FURTHER INFORMATION CONTACT**" section.

Eligibility for coverage under the 2008 CGP is limited to operators of "new projects" or "unpermitted ongoing projects." A "new project" is one that commences after the effective date of the 2008 CGP. An "unpermitted ongoing project" is one that commenced prior to the effective date of the 2008 CGP, yet never received authorization to discharge under the 2003 CGP or any other NPDES permit covering its construction-related stormwater discharges. This permit is effective only in those areas where EPA is the permitting authority. A list of eligible areas is included in Appendix B of the 2008 CGP.

B. How Can I Get Copies of This Document and Other Related Information?

1. Docket. EPA has established an official public docket for this action under Docket ID No. EPA–HQ–OW–2008–0238. The official public docket is the collection of materials that is available for public viewing at the Water Docket in the EPA Docket Center, (EPA/DC) EPA West, Room 3334, 1301 Constitution Ave., NW., Washington, DC 20460. Although all documents in the docket are listed in an index, some information is not publicly available, i.e., Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Publicly available docket materials are available electronically through *http://www.regulations.gov* and in hard copy at the EPA Docket Center Public Reading Room, open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744 and the telephone number for the Water Docket is (202) 566–2426.

2. Electronic Access. You may access this **Federal Register** document electronically through the EPA Internet under the "**Federal Register**" listings at *http://www.epa.gov/fedrgstr/.* Electronic versions of the final permit and fact sheet are available at EPA's stormwater Web site *http://www.epa.gov/npdes/stormwater.*

An electronic version of the public docket is available through EPA's electronic public docket and comment system, EPA Dockets. You may use EPA Dockets at *http://www.regulations.gov/fdmspublic/component/main* view public comments, access the index listing of the contents of the official public docket, and to access those documents in the public docket that are available electronically. Once in the system, select "search", then key in the appropriate docket identification number.

Certain types of information will not be placed in the EPA Dockets. Information claimed as CBI and other information whose disclosure is restricted by statute, which is not included in the official public docket, will not be available for public viewing in EPA's electronic public docket. EPA policy is that copyrighted material will not be placed in EPA's electronic public docket but will be available only in printed, paper form in the official public docket. Although not all docket materials may be available electronically, you may still access any of the publicly available docket materials through the docket facility identified in Section I.B.1.

C. Response to Public Comments

EPA received 4 comments on the proposal to extend the 2008 CGP. All commenters were supportive of EPA's proposed extension. Three of the commenters recommended that EPA modify the 2008 CGP to extend the expiration date of the permit for 3 years, so that the permit would expire on June 30, 2013, instead of the proposed expiration date of June 30, 2011, thus making it a 5-year permit. EPA declined to adopt the commenter's recommendation. It is important to minimize the delay in issuing a new CGP that incorporates the new federal requirements for the discharges from construction and development sites, which were published in the **Federal Register** December 1, 2009. 74 FR 62996. For a copy of the "Construction and Development Effluent Limitations Guidelines" (or "C&D rule"), and other related information, go to *http://www.epa.gov/guide/construction/*.

The 2008 CGP was issued for a shorter term than the statutorily allowed 5 years so that the newly promulgated C&D rule requirements could be incorporated into the permit as soon as practicable. Many States will be looking at the Agency's next CGP to gain insight into how to implement the C&D ELG requirements into permits. The C&D ELG established numeric effluent limitations and monitoring requirements, both of which may be new to the large number of construction sites throughout the country. EPA would like to issue the next CGP implementing these requirements as soon as possible. By promulgating a final CGP that incorporates the C&D ELG by June 30, 2011 EPA will assist State agencies that must reissue their permits in the next few years and incorporate the C&D ELG into their permits.

One commenter further recommended that EPA make modifications to the 2008 CGP in addition to the one-year extension of the permit. This commenter specifically recommended that EPA take the opportunity to streamline the CGP and the process for authorizing dischargers, such as through a simplified option for single lot construction projects, a simplified qualified local program option, and a certification of no pollutant discharge added to the permit. EPA is aware of the issues that the commenter has raised; however, EPA is not inclined to make further modifications to the 2008 CGP at this time beyond the one-year extension. The expiration date of the 2008 CGP is the only issue for which EPA proposed a modification; EPA believes the issues raised by the commenter, which will require a significant amount of time to consider for incorporation into the permit, are best contemplated for the new permit to be issued prior to June 30, 2011.

D. Who Are The EPA Regional Contacts for This Permit?

For EPA Region 1, contact Jessica Hing at tel.: (617) 918–1560 or e-mail at *hing.jessica@epa.gov.*

For EPA Region 2, contact Stephen Venezia at tel.: (212) 637–3856 or e-mail at *venezia.stephen@epa.gov,* or for Puerto Rico, contact Sergio Bosques at tel.: (787) 977–5838 or e-mail at *bosques.sergio@epa.gov.*

For EPA Region 3, contact Garrison Miller at tel.: (215) 814–5745 or e-mail at *miller.garrison@epa.gov.*

For EPA Region 5, contact Brian Bell at tel.: (312) 886–0981 or e-mail at *bell.brianc@epa.gov.*

For EPA Region 6, contact Brent Larsen at tel.: (214) 665–7523 or e-mail at: *larsen.brent@epa.gov.*

For EPA Region 7, contact Mark Matthews at tel.: (913) 551–7635 or e-mail at: *matthews.mark@epa.gov.*

For EPA Region 8, contact Greg Davis at tel.: (303) 312–6314 or e-mail at: *davis.gregory@epa.gov.*

For EPA Region 9, contact Eugene Bromley at tel.: (415) 972–3510 or e-mail at *bromley.eugene@epa.gov.*

For EPA Region 10, contact Dick Hetherington at tel.: (206) 553–1941 or e-mail at *hetherington.dick@epa.gov.*

II. Background of Permit

A. Statutory and Regulatory History

The Clean Water Act ("CWA") establishes a comprehensive program "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. 1251(a). The CWA also includes the objective of attaining "water quality which provides for the protection and propagation of fish, shellfish and wildlife." 33 U.S.C. 1251(a)(2)). To achieve these goals, the CWA requires EPA to control discharges through the issuance of National Pollutant Discharge Elimination System ("NPDES") permits, which may be issued for fixed terms that may not exceed five (5) years. 33 U.S.C. 1342(b)(1)(B).

Section 405 of the Water Quality Act of 1987 (WQA) added section 402(p) of the Clean Water Act (CWA), which directed EPA to develop a phased approach to regulate stormwater discharges under the NPDES program. EPA published a final regulation in the **Federal Register** on the first phase of this program on November 16, 1990, establishing permit application requirements for "storm water discharges associated with industrial activity." See 55 FR 47990. EPA defined the term "storm water discharge associated with industrial activity" in a comprehensive manner to cover a wide variety of facilities. Construction activities, including activities that are part of a larger common plan of development or sale, that ultimately disturb at least five acres of land and have point source discharges to waters of the U.S. were included in the definition of "industrial activity" pursuant to 40 CFR 122.26(b)(14)(x). Phase II of the stormwater program was published in the **Federal Register** on December 8, 1999, and required NPDES permits for discharges from construction sites disturbing at least one acre, but less than five acres, including sites that are part of a larger common plan of development or sale that will ultimately disturb at least one acre but less than five acres, pursuant to 40 CFR 122.26(b)(15)(i). See 64 FR 68722. EPA is proposing to extend the expiration date of the 2008 CGP under the statutory and regulatory authority cited above.

NPDES permits issued for construction stormwater discharges are required under Section 402(a)(1) of the CWA to include conditions for meeting technology-based effluent limits established under Section 301 and, where applicable, Section 306. Once an

effluent limitations guideline or new source performance standard is promulgated in accordance with these sections, NPDES permits are required to incorporate limits based on such limitations and standards. See 40 CFR 122.44(a)(1). Prior to the promulgation of national effluent limitations and standards, permitting authorities incorporate technology-based effluent limitations on a best professional judgment basis. CWA section 402(a)(1)(B); 40 CFR 125.3(a)(2)(ii)(B).

B. Summary of 2008 CGP

EPA announced the issuance of the 2008 CGP on July 14, 2008. See 73 FR 40338. Construction operators choosing to be covered by the 2008 CGP must certify in their notice of intent (NOI) that they meet the requisite eligibility requirements, described in Part 1.3 of the permit. If eligible, operators are authorized to discharge under this permit in accordance with Part 2. Permittees must install and implement control measures to meet the effluent limits applicable to all dischargers in Part 3, and must inspect such stormwater controls and repair or modify them in accordance with Part 4. The permit in Part 5 requires all construction operators to prepare a stormwater pollution prevention plan (SWPPP) that identifies all sources of pollution, and describes control measures used to minimize pollutants discharged from the construction site. Part 6 details the requirements for terminating coverage under the permit.

The 2008 CGP permit provides coverage for discharges from construction sites that occur in areas not covered by an approved State NPDES program. EPA Regions 1, 2, 3, 5, 6, 7, 8, 9, and 10 issued the 2008 CGP to replace the expired 2003 CGP for operators of new and unpermitted ongoing construction projects. The geographic coverage and scope of the 2008 CGP is listed in Appendix B of the permit.

C. What Is EPA's Rationale for the Modification of the 2008 CGP for a One-Year Extension of the Expiration Date?

As stated above, any NPDES permit issued after the effective date of the C&D rule, whether issued by EPA or an authorized state, must incorporate the substantive technology-based requirements of the rule into the permit. The effective date of the C&D rule is February 1, 2010. Therefore, EPA's next permit, which will be issued after the effective date of the C&D rule, will require that the requirements of the rule be incorporated into the permit. While as discussed above, EPA wants to issue a CGP that incorporates the C&D ELG as soon as possible in order to provide guidance to state permitting authorities, today's one-year extension is necessary due to EPA's judgment that an extension of one year is needed to provide sufficient time to incorporate the new C&D rule requirements, provide guidance to state permitting authorities, and to be able to manage the additional actions and initiatives that are being undertaken at the same time by the Agency. Without the one-year extension, EPA fears that it would be left with an inadequate amount of time to issue a new CGP, placing potentially thousands of construction projects at risk of discharging without an effective stormwater permit.

Prior to the extension, the 2008 CGP would have expired on June 30, 2010, giving EPA approximately seven months to propose and finalize a new CGP. In EPA's judgment, the seven-month period would have been insufficient to properly draft new requirements that reflect the C&D rule, and to modify these permit conditions in response to public comments. The seven-month timeframe to propose and finalize a new permit would have been impracticable based on EPA's past experience in issuing stormwater general permits, in general, and with the construction general permit specifically. In the past, EPA required an estimated eighteen months to propose and finalize the 2003 CGP, and a similar amount of time for the previous construction general permits. While EPA does not believe the 2008 Multi-Sector General Permit (MSGP) for stormwater discharges associated with industrial activities was typical, that permit required almost three years to finalize after the proposed permit was published. Beyond incorporating updated modifications to the permit based on changes to the technology-based and water quality-based effluent limitations into the permit, EPA is required to conduct many additional tasks that are automatically required of final Federal actions, such as conducting consultations under the Endangered Species Act and National Historic Properties Act, obtaining CWA section 401 certifications for the permit from States and Indian Country lands, providing the public with an opportunity to comment, and responding to all comments received during the public comment period. Separately, these tasks have historically required more than seven months. The combined effect of these tasks, which are each necessary to issue a general permit, on EPA's schedule for permit issuance is to make a seven-month permit issuance timeframe impracticable.

While a seven-month schedule to finalize a new CGP would be impracticable under the circumstances, as discussed above, what would have made this period of time even more challenging is the incorporation of the new Federal C&D rule requirements into the general permit. The C&D rule has introduced several concepts that may be new to most construction sites, including the requirement for certain sized construction sites to comply with a numeric effluent limitation for turbidity. Additionally, the non-numeric effluent limitations in the C&D ELG will need to be properly translated into permit conditions and modified based on public comments received. The additional one-year extension will ensure that the Agency has sufficient time to accomplish these tasks.

Also weighing heavily in favor of extending the expiration date of the 2008 CGP are the risks associated with failing to issue a replacement permit prior to the 2008 CGP's original expiration date. If EPA fails to issue a new CGP before the expiration of the 2008 CGP, no new construction projects would be able to be eligible for coverage by the 2008 CGP, leaving individual NPDES permits as the only available option for permitting new projects. The sole reliance on individual permits will mean that discharge authorizations will be delayed due to the greater amount of time and Agency resources that are required for developing and issuing individual permits. EPA is unwilling to risk the possibility of such delays. The one-year extension to the 2008 CGP's expiration date will provide the Agency with the time needed to issue a new permit, without any gaps in permit coverage.

D. EPA's Authority To Modify NPDES Permits

EPA regulations establish when the permitting authority may make modifications to existing NPDES permits. In relevant part, EPA regulations state that "[w]hen the Director receives any information * * * he or she may determine whether or not one or more of the causes listed in paragraph (a) * * * of this section for modification * * * exist. If cause exists, the Director may modify * * * the permit accordingly, subject to the limitations of 40 CFR 124.5(c)." 40 CFR 122.62. For purposes of this **Federal Register** notice, the relevant cause for modification is at 40 CFR 122.62(a)(2), which states a permit may be modified when "[t]he Director has received new

information" and that information was not available at the time of permit issuance * * * and would have justified the application of different permit conditions at the time of issuance." Pursuant to EPA regulations, "[w]hen a permit is modified, only the conditions subject to the modification are reopened." 40 CFR 122.62.

In the case of the 2008 CGP, a permit modification is justified based on the new information EPA received since issuance of the 2008 CGP in July 2008, in terms of the new actions EPA is planning or undertaking that are putting new demands on the Agency's available resources in the NPDES stormwater program. New actions and the resulting resource demands have come about as a result of EPA's desire to respond to the 2008 National Research Council report, *Urban Stormwater Management in the United States* (see *http://www.epa.gov/npdes/pubs/nrc_stormwaterreport.pdf*), and to take action under the President's May 2009 Executive Order on Chesapeake Bay Protection and Restoration (see *http://www.whitehouse.gov/the_press_office/Executive-Order-Chesapeake-Bay-Protection-and-Restoration/*). Related to these efforts, EPA has announced its intention to initiate a national rulemaking to establish a program to reduce stormwater discharges from new development and redevelopment, and to make other regulatory improvements to strengthen its stormwater program. Refer to *http://www.epa.gov/npdes/stormwater/rulemaking.* EPA's meeting these new demands, while implementing new Federal requirements for the construction and development industry, is not practical in a seven-month time period. Additionally, at the time of the 2008 CGP was issued, EPA did not know the final content of the C&D ELG. If this information was available at the time of permit issuance, it would have justified EPA establishing an expiration date for the 2008 CGP later than midnight June 30, 2010. As a result, cause exists under EPA regulations to justify modification of the 2008 CGP to extend the expiration date of the permit from midnight June 30, 2010 to midnight June 30, 2011.

Authority: Clean Water Act, 33 U.S.C. 1251 *et seq.*

Dated: January 20, 2010.

Curt Spalding,

Regional Administrator, EPA Region 1.

Dated: January 20, 2010.

Carl-Axel P. Soderberg,

Division Director, Caribbean Environmental Protection Division, EPA Region 2.

Dated: January 20, 2010.

Barbara A. Finazzo,

Division Director, Division of Environmental Planning & Protection, EPA Region 2.

Dated: January 20, 2010.

Jon M. Capacasa,

Director, Water Protection Division, EPA Region 3.

Dated: January 20, 2010.

Timothy C. Henry,

Associate Director, Water Division, EPA Region 5.

Dated: January 20, 2010.

Miguel I. Flores,

Director, Water Quality Protection Division, EPA Region 6.

Dated: January 20, 2010.

William A. Spratlin,

Director, Wetlands and Pesticides Division, EPA Region 7.

Dated: January 20, 2010.

Stephen S. Tuber,

Assistant Regional Administrator, Office of Partnerships & Regulatory Assistance, EPA Region 8.

Dated: January 20, 2010.

Alexis Strauss,

Director, Water Division, EPA Region 9.

Dated: January 20, 2010.

Michael A. Bussell,

Director, Office of Water and Watersheds, EPA Region 10.

[FR Doc. 2010–1743 Filed 1–27–10; 8:45 am]

BILLING CODE 6560–50–P

EXPORT-IMPORT BANK OF THE UNITED STATES

Sunshine Act Meeting Notice

ACTION: Notice of a Partially Open Meeting of the Board of Directors of the Export-Import Bank of the United States.

TIME AND PLACE: Thursday, January 28, 2010 at 9:30 a.m. The meeting will be held at Ex-Im Bank in Room 1143, 811 Vermont Avenue, NW., Washington, DC 20571.

Open Agenda Items

ITEM NO. 1: Ex-Im Bank Advisory Committee (16th & 17th Members) for 2010.

ITEM NO. 2: Ex-Im Bank Sub-Saharan Africa Advisory Committee for 2010.

PUBLIC PARTICIPATION: The meeting will be open to public observation for Items No. 1 & 2 only.

FOR FURTHER INFORMATION CONTACT: Office of the Secretary, 811 Vermont Avenue, NW., Washington, DC 20571, (202) 565–3957.

Jonathan J. Cordone,

Senior Vice President and General Counsel.

[FR Doc. 2010–1737 Filed 1–27–10; 8:45 am]

BILLING CODE 6690–01–M

FEDERAL COMMUNICATIONS COMMISSION

[CC Docket No. 92–237; DA 10–101]

Next Meeting of the North American Numbering Council

AGENCY: Federal Communications Commission.

ACTION: Notice.

SUMMARY: On January 20, 2010, the Commission released a public notice announcing the February 18, 2010 meeting and agenda of the North American Numbering Council (NANC). The intended effect of this action is to make the public aware of the NANC's next meeting and agenda.

DATES: Thursday, February 18, 2010, 9:30 a.m.

ADDRESSES: Competition Policy Division, Wireline Competition Bureau, Federal Communications Commission, Portals II, 445 Twelfth Street, SW., Suite 5–C162, Washington, DC 20554. Requests to make an oral statement or provide written comments to the NANC should be sent to Deborah Blue.

FOR FURTHER INFORMATION CONTACT: Deborah Blue, Special Assistant to the Designated Federal Officer (DFO) at (202) 418–1466 or *Deborah.Blue@fcc.gov.* The fax number is: (202) 418–1413. The TTY number is: (202) 418–0484.

SUPPLEMENTARY INFORMATION: *Released:* January 20, 2010.

The North American Numbering Council (NANC) has scheduled a meeting to be held Thursday, February 18, 2010, from 9:30 a.m. until 5 p.m. The meeting will be held at the Federal Communications Commission, Portals II, 445 Twelfth Street, SW., Room TW–C305, Washington, DC. This meeting is open to members of the general public. The FCC will attempt to accommodate as many participants as possible. The public may submit written statements to the NANC, which must be received two business days before the meeting. In addition, oral statements at the meeting by parties or entities not represented on

NPDES General Permit for Stormwater Discharges From Construction Activities

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National Pollutant Discharge Elimination System
General Permit for Discharges from
Large and Small Construction Activities

In compliance with the provisions of the Clean Water Act, 33 U.S.C. §1251 et. seq., (hereafter CWA or the Act), as amended by the Water Quality Act of 1987, P.L. 100-4, operators of large and small construction activities that are described in Part 1.3 of this National Pollutant Discharge Elimination System (NPDES) general permit, except for those activities excluded from authorization of discharge in Part 1.3.C of this permit are authorized to discharge pollutants to waters of the United States in accordance with the conditions and requirements set forth herein. Permit coverage is required from the "commencement of construction activities" until "final stabilization" as defined in Appendix A.

This permit shall become effective on June 30, 2008.

This permit and the authorization to discharge shall expire at midnight, June 30, 2010.

Signed:

Stephen S. Perkins, Director, Office of Ecosystem Protection
EPA Region 1

Jon M. Capacasa, Director, Water Protection Division
EPA Region 3

Miguel I. Flores, Director, Water Quality Protection Division
EPA Region 6

William A. Spratlin, Director, Water, Wetlands and Pesticides Division
EPA Region 7

Stephen S. Tuber, Assistant Regional Administrator, Office of Partnerships & Regulatory Assistance
EPA Region 8

Alexis Strauss, Director, Water Division
EPA Region 9

Michael Gearheard, Director, Office of Water and Watersheds
EPA Region 10

The signatures are for the permit conditions in Parts 1 through 10 and Appendices A through G, and for any additional conditions which apply to facilities located in the corresponding state, Indian country, or other area.

PART 1: COVERAGE UNDER THIS PERMIT

1.1 Introduction

This Construction General Permit (CGP) authorizes stormwater discharges from large and small construction activities that result in a total land disturbance of equal to or greater than one acre, where those discharges enter surface waters of the United States or a municipal separate storm sewer system (MS4) leading to surface waters of the United States subject to the conditions set forth in this permit. This permit also authorizes stormwater discharges from any other construction activity designated by EPA where EPA makes that designation based on the potential for contribution to an excursion of a water quality standard or for significant contribution of pollutants to waters of the United States. This permit replaces the permit issued in 2003 (68 FR 39087, July 1, 2003), including the modification made to that permit in 2004 (69 FR 76743, December 22, 2004).

This permit is presented in a reader-friendly, plain language format. This permit uses the terms “you” and “your” to identify the person(s) who owns or operates a “facility” or “activity” as defined in Appendix A and who must comply with the conditions of this permit. This format should allow you, the permittee and operator of a large or small construction activity, to easily locate and understand applicable requirements.

The goal of this permit is to minimize the discharge of stormwater pollutants from construction activity.

1.2 Permit Area

If your large or small construction activity is located within the areas listed in Appendix B, you may be eligible to obtain coverage under this permit. Permit coverage is actually provided by legally separate and distinctly numbered permits covering each of the areas listed in Appendix B.

1.3 Eligibility

Permit eligibility is limited to discharges from “large” and “small” construction activity, and to “new projects” and “unpermitted ongoing projects,” as defined in Appendix A or as otherwise designated by EPA. This general permit contains eligibility restrictions, as well as permit conditions and requirements. You may have to take certain actions to be eligible for coverage under this permit. In such cases, you must continue to satisfy those eligibility provisions to maintain permit authorization. If you do not meet the requirements that are a pre-condition to eligibility, then resulting discharges constitute unpermitted discharges. By contrast, if you eligible for coverage under this permit and do not comply with the requirements of the general permit, you may be in violation of the general permit for your otherwise eligible discharges.

A. Allowable Stormwater Discharges

Subject to compliance with the terms and conditions of this permit, you are authorized to discharge pollutants in:

1. Stormwater discharges associated with large and small construction activity from "new projects" and "unpermitted ongoing projects" as defined in Appendix A;
2. Stormwater discharges designated by EPA as needing a stormwater permit under 40 CFR §122.26(a)(1)(v) or §122.26(b)(15)(ii);
3. Discharges from support activities (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) provided:
   a. The support activity is directly related to the construction site required to have NPDES permit coverage for discharges of stormwater associated with construction activity;
   b. The support activity is not a commercial operation serving multiple unrelated construction projects by different operators, and does not operate beyond the completion of the construction activity at the last construction project it supports; and
   c. Pollutant discharges from support activity areas are minimized in compliance with Part 3.1.G; and
4. Discharges composed of allowable discharges listed in 1.3.A and 1.3.B commingled with a discharge authorized by a different NPDES permit and/or a discharge that does not require NPDES permit authorization.

B. Allowable Non-Stormwater Discharges

You are authorized for the following non-stormwater discharges, provided the non-stormwater component of the discharge is in compliance with Part 5.4 (Non-Stormwater Discharges):

1. Discharges from fire-fighting activities;
2. Fire hydrant flushings;
3. Waters used to wash vehicles where detergents are not used;
4. Water used to control dust in accordance with Part 3.1.B;
5. Potable water including uncontaminated water line flushings;
6. Routine external building wash down that does not use detergents;
7. Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used;
8. Uncontaminated air conditioning or compressor condensate;
9. Uncontaminated ground water or spring water;
10. Foundation or footing drains where flows are not contaminated with process materials such as solvents;
11. Uncontaminated excavation dewatering;
12. Landscape irrigation.

C. Limitations on Coverage

1. This permit does not authorize post-construction discharges that originate from the site after construction activities have been completed and the site has achieved final stabilization, including any temporary support activity. Post-construction

stormwater discharges from industrial sites may need to be covered by a separate NPDES permit.

2. This permit does not authorize discharges mixed with non-stormwater. This exclusion does not apply to discharges identified in Part 1.3.B, provided the discharges are in compliance with Part 5.4 (Non-Stormwater Discharges).
3. This permit does not authorize stormwater discharges associated with construction activity that have been covered under an individual permit or required to obtain coverage under an alternative general permit in accordance with Part 2.6.
4. This permit does not authorize discharges that EPA, prior to authorization under this permit, determines will cause, have the reasonable potential to cause, or contribute to an excursion above any applicable water quality standard. Where such a determination is made prior to authorization, EPA may notify you that an individual permit application is necessary in accordance with Part 2.6. However, EPA may authorize your coverage under this permit after you have included appropriate controls and implementation procedures in your permit designed to bring your discharge into compliance with water quality standards.
5. *Discharging into Receiving Waters With an Approved or Established Total Maximum Daily Load Analysis*
   a. You are not eligible for coverage under this permit for discharges of pollutants of concern to waters for which there is a total maximum daily load (TMDL) established or approved by EPA unless implement measures or controls that are consistent with the assumptions and requirements of such TMDL. To be eligible for coverage under this general permit, you must implement conditions applicable to your discharges necessary for consistency with the assumptions and requirements of such TMDL. If a specific wasteload allocation has been established that would apply to your discharge, you must implement necessary steps to meet that allocation.
   b. In a situation where an EPA-approved or established TMDL has specified a general wasteload allocation applicable to construction stormwater discharges, but no specific requirements for construction sites have been identified in the TMDL**,** you should consult with the State or Federal TMDL authority to confirm that meeting the effluent limits in Part 3 of this permit will be consistent with the approved TMDL. Where an EPA-approved or established TMDL has not specified a wasteload allocation applicable to construction stormwater discharges, but has not specifically excluded these discharges, compliance with the effluent limits in Part 3 of this permit will generally be assumed to be consistent with the approved TMDL. If the EPA-approved or established TMDL specifically precludes such discharges, the operator is not eligible for coverage under the CGP.
6. *Endangered and Threatened Species and Critical Habitat Protection*
   a. Coverage under this permit is available only if your stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities, as defined in Appendix A, are not likely to jeopardize the continued existence of any species that are federally-listed as endangered or threatened (“listed”) under the Endangered Species Act (ESA) or result in the adverse

modification or destruction of habitat that is federally-designated as critical under the ESA ("critical habitat").

b. You are not eligible to discharge if the stormwater discharges, allowable non-stormwater discharges, or stormwater discharge-related activities would cause a prohibited "take" of federally-listed endangered or threatened species (as defined under section 3 of the ESA and 50 CFR 17.3), unless such takes are authorized under sections 7 or 10 of the ESA.

c. Determining Eligibility: You must use the process in Appendix C (ESA Review Procedures) to determine eligibility *PRIOR* to submittal of the Notice of Intent (NOI). You must meet one or more of the following six criteria (A-F) for the entire term of coverage under the permit:

Criterion A. No federally-listed threatened or endangered species or their designated critical habitat are in the project area as defined in Appendix C; or

Criterion B. Formal consultation with the Fish and Wildlife Service and/or the National Marine Fisheries Service under section 7 of the ESA has been concluded and that consultation:

i. Addressed the effects of the project's stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities on federally-listed threatened or endangered species and federally-designated critical habitat, and

ii. The consultation resulted in either:

a. Biological opinion finding no jeopardy to federally-listed species or destruction/adverse modification of federally-designated critical habitat, or

b. Written concurrence from the Service(s) with a finding that the stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities are not likely to adversely affect federally-listed species or federally-designated critical habitat; or

Criterion C. Informal consultation with the Fish and Wildlife Service and/or the National Marine Fisheries Service under section 7 of the ESA has been concluded and that consultation:

i. Addressed the effects of the project's stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities on federally-listed threatened or endangered species and federally-designated critical habitat, and

ii. The consultation resulted in either:

a. Biological opinion finding no jeopardy to federally-listed species or destruction/adverse modification of federally-designated critical habitat, or

b. Written concurrence from the Service(s) with a finding that the stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities are

not likely to adversely affect federally-listed species or federally-designated critical habitat; or

Criterion D. The construction activities are authorized through the issuance of a permit under section 10 of the ESA, and that authorization addresses the effects of the stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities on federally-listed species and federally-designated critical habitat; or

Criterion E. Stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities are not likely to adversely affect any federally-listed threatened or endangered species or result in the destruction or adverse modification of federally-designated critical habitat; or

Criterion F. The project's stormwater discharges, allowable non-stormwater discharges, and stormwater discharge-related activities were already addressed in another operator's valid certification of eligibility under Criteria A-E which included your construction activities and there is no reason to believe that federally-listed species or federally-designated critical habitat not considered in the prior certification may be present or located in the project area. By certifying eligibility under this criterion, you agree to comply with any measures or controls upon which the other operator's certification was based.

You must comply with any applicable terms, conditions, or other requirements developed in the process of meeting the eligibility requirements of the criteria in this section to remain eligible for coverage under this permit.

7. *Historic Properties*
   [Reserved]
   You are reminded that you must comply with applicable state, tribal and local laws concerning the protection of historic properties and places.

1.4 Waivers for Certain Small Construction Activities

Three scenarios exist under which small construction activities (see definition in Appendix A) may be waived from the NPDES permitting requirements detailed in this general permit. These exemptions are predicated on certain criteria being met and proper notification procedures being followed. Details of the waiver options and procedures for requesting a waiver are provided in Appendix D.

PART 2: AUTHORIZATION FOR DISCHARGES OF STORMWATER FROM CONSTRUCTION ACTIVITY

2.1 How to Obtain Authorization

To obtain coverage under this general permit, you, the operator, must prepare and submit a complete and accurate Notice of Intent (NOI), as described in this Part. Discharges are not authorized if your NOI is incomplete or inaccurate or if you were never eligible for permit coverage.

2.2 How to Submit Your NOI

You must either use EPA's electronic NOI system (accessible at www.epa.gov/npdes/eNOI or use a paper form (included in Appendix E) and then submit that paper form to:

For Regular U.S. Mail Delivery:
EPA Stormwater Notice Processing Center
Mail Code 4203M
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

For Overnight/Express Mail Delivery:
EPA Stormwater Notice Processing Center
Room 7420
U.S. EPA
1201 Constitution Avenue, NW
Washington, DC 20004

2.3 Authorization to Discharge Date

You are authorized to discharge stormwater from construction activities under the terms and conditions of this permit seven (7) calendar days after acknowledgment of receipt of your complete NOI is posted on EPA's NPDES website http://www.epa.gov/npdes/stormwater/cgp. The exception to this 7-day timeframe is if EPA delays your authorization based on eligibility considerations of Part 1.3 (e.g., ESA concerns). Under this circumstance, you are not authorized for coverage under this permit until you receive notice from EPA of your eligibility.

2.4 Submission Deadlines

A. *New Projects:* To obtain coverage under this permit, you must submit a complete and accurate NOI and be authorized consistent with Part 2.3 prior to your commencement of construction activities.

B. *Permitted Ongoing Projects:* Permitted ongoing projects are not eligible for coverage under this permit. If you previously received authorization to discharge for your project under the 2003 CGP, your authorization will be automatically continued under that permit until the expiration of this permit and the issuance of a new CGP, or the termination of coverage by you under the 2003 CGP, whichever is earlier. Note: If you are an operator of a permitted ongoing project and you transfer ownership of the project, or a portion thereof, to a different operator, that operator will be required to submit a complete and accurate NOI for a new project in accordance with Part 2.2.

C. *Unpermitted Ongoing Projects:* If you previously did not receive authorization to discharge for your project under the 2003 CGP and you wish to obtain coverage under this permit, you must submit an NOI within 90 days of the issuance date of this permit.

D. *Late Notifications:* Operators are not prohibited from submitting NOIs after initiating clearing, grading, excavation activities, or other construction activities. When a late NOI is submitted, authorization for discharges occurs consistent with Part 2.3. The Agency reserves the right to take enforcement action for any unpermitted discharges that occur between the commencement of construction and discharge authorization.

2.5 Continuation of the Expired General Permit

If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with the Administrative Procedure Act and remain in force and effect. If you were granted permit coverage prior to the expiration date, you will automatically remain covered by the continued permit until the earliest of:

A. Reissuance or replacement of this permit, at which time you must comply with the conditions of the new permit to maintain authorization to discharge; or

B. Your submittal of a Notice of Termination; or

C. Issuance of an individual permit for the project's discharges; or

D. A formal permit decision by EPA to not reissue this general permit, at which time you must seek coverage under an alternative general permit or an individual permit.

2.6 Requiring Coverage Under an Individual Permit or an Alternative General Permit

A. EPA may require you to apply for and/or obtain either an individual NPDES permit or coverage under an alternative NPDES general permit. Any interested person may petition EPA to take action under this paragraph. If EPA requires you to apply for an individual NPDES permit, EPA will notify you in writing that a permit application is required. This notification will include a brief statement of the reasons for this decision and an application form. In addition, if you are an existing permittee covered under this permit, the notice will set a deadline to file the application, and will include a statement that on the effective date of issuance or denial of the individual NPDES permit or the coverage or denial of coverage under the alternative general permit as it applies to you, coverage under this general permit will automatically terminate. Applications must be submitted to EPA at the applicable EPA Regional offices listed in Appendix B of this permit. EPA may grant additional time to submit the application upon your request. If you are covered under this permit and you fail to submit in a timely manner an individual NPDES permit application as required by EPA, then the applicability of this permit to you is automatically terminated at the end of the day specified by EPA as the deadline for application submittal.

B. You may request to be excluded from coverage under this general permit by applying for an individual permit. In such a case, you must submit an individual application in accordance with the requirements of 40 CFR §122.26(c)(1)(ii), with reasons supporting the request, to EPA at the applicable EPA Regional office listed in

Appendix B of this permit. The request may be granted by issuance of an individual permit or coverage under an alternative general permit if your reasons are adequate to support the request.

C. When an individual NPDES permit is issued to you (as an entity that is otherwise subject to this permit), or you are authorized to discharge under an alternative NPDES general permit, the applicability of this permit to you is automatically terminated on the effective date of the individual permit or the date of authorization of coverage under the alternative general permit, whichever the case may be. If you (as an entity that is otherwise subject to this permit) are denied an individual NPDES permit or an alternative NPDES general permit, the applicability of this permit to you is automatically terminated on the date of such denial, unless otherwise specified by EPA.

PART 3: EFFLUENT LIMITS

This section includes technology-based and water quality-based effluent limits that apply to all dischargers, unless otherwise specified. You must select, install, and maintain control measures (e.g., Best Management Practices ("BMPs"), controls, practices, etc.) for each major construction activity, identified in your Part 5 project description, to meet these effluent limits. All control measures must be properly selected, installed, and maintained in accordance with any relevant manufacturer specifications and good engineering practices. You must implement the control measures from commencement of construction activity until final stabilization is complete.

The term "minimize" as used in Part 3 means reduce and/or eliminate to the extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice.

3.1 Effluent Limits to Reduce Pollutants in Stormwater Discharges

You must implement control measures to minimize pollutants in stormwater discharges.

A. ***Sediment Controls:*** You must implement the following, where applicable:

1. Sediment Basins: For common drainage locations that serve an area with 10 or more acres disturbed at one time, a temporary (or permanent) sediment basin that provides storage for a calculated volume of runoff from the drainage area from a 2-year, 24-hour storm, or equivalent control measures, must be provided where attainable until final stabilization of the site. Where no such calculation has been performed, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent control measures, must be provided where attainable until final stabilization of the site. When computing the number of acres draining into a common location, it is not necessary to include flows from offsite areas and flows from on-site areas that are either undisturbed or have undergone final stabilization where such flows are diverted around both the disturbed area and the sediment basin. In determining whether installing a sediment basin is attainable, the operator may consider factors such as site soils,

slope, available area on-site, etc. In any event, the operator must consider public safety, especially as it relates to children, as a design factor for the sediment basin, and alternative sediment controls must be used where site limitations would preclude a safe design.

2. For drainage locations which serve 10 or more disturbed acres at one time and where a temporary sediment basin or equivalent controls is not attainable, smaller sediment basins and/or sediment traps should be used. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries (and for those side slope boundaries deemed appropriate as dictated by individual site conditions).

3. For drainage locations serving less than 10 acres, smaller sediment basins and/or sediment traps should be used. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries (and for those side slope boundaries deemed appropriate as dictated by individual site conditions) of the construction area unless a sediment basin providing storage for a calculated volume of runoff from a 2-year, 24-hour storm or 3,600 cubic feet of storage per acre drained is provided.

B. ***Off-Site Sediment Tracking and Dust Control:*** You must minimize off-site vehicle tracking of sediments onto paved surfaces and the generation of dust. If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize off-site impacts.

C. ***Runoff Management:*** You must divert flows from exposed soils, retain/detain flows or otherwise minimize runoff and the discharge of pollutants from exposed areas of the site. You must avoid placement of structural practices in floodplains to the degree technologically and economically practicable and achievable.

D. ***Erosive Velocity Control:*** You must place velocity dissipation devices at discharge locations and along the length of any outfall channel to provide a non-erosive flow velocity from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g., no significant changes in the hydrological regime of the receiving water).

E. ***Post-Construction Stormwater Management:*** You must comply with any applicable federal, local, state, or tribal requirements regarding the design and installation of post-construction stormwater controls. Structural measures should be placed on upland soils to the degree practicable and achievable.

F. ***Construction and Waste Materials:*** You must:
   1. Prevent the discharge of solid materials, including building materials, to waters of the United States, except as authorized by a permit issued under section 404 of the CWA;

2. Minimize exposure of construction and waste materials to stormwater, and the occurrence of spills, through the use of storage practices, prevention and response practices, and other controls;
3. Prevent litter, construction debris, and construction chemicals (e.g., diesel fuel, hydraulic fluids, and other petroleum products) that could be exposed to stormwater from becoming a pollutant source in stormwater discharges.

G. ***Non-Construction Wastes:*** You must minimize pollutant discharges from areas other than construction (including stormwater discharges from dedicated asphalt plants and dedicated concrete plants).

H. ***Erosion Control and Stabilization:***
1. ***General Requirements:*** You must stabilize the site. You must ensure that existing vegetation is preserved where possible and that disturbed portions of the site are stabilized. You should avoid using impervious surfaces for stabilization.
2. ***Initiation Deadlines:*** You must initiate stabilization measures, except as provided below, as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased.
   i. Where stabilization by the 14th day is precluded by snow cover or frozen ground conditions, stabilization measures must be initiated as soon as practicable.
   ii. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 14 days, temporary stabilization measures do not have to be initiated on that portion of the site.
   iii. In arid, semiarid, and drought-stricken areas where initiating perennial vegetative stabilization measures is not possible within 14 days after construction activity has temporarily or permanently ceased, final vegetative stabilization measures must be initiated as soon as practicable.

I. ***Spills / Releases in Excess of Reportable Quantities:*** You are not authorized to discharge hazardous substances or oil resulting from an on-site spill. This permit does not relieve you of the federal reporting requirements of 40 CFR Part 110, 40 CFR Part 117 and 40 CFR Part 302 relating to spills or other releases of oils or hazardous substances.

Where a release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117 or 40 CFR Part 302, occurs during a 24-hour period:

- you must provide notice to the National Response Center (NRC) (800–424–8802; in the Washington, DC, metropolitan area call 202–267–2675) in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117 and 40 CFR Part 302 as soon as site staff have knowledge of the discharge; and

- you must, within 7 calendar days of knowledge of the release, provide a description of the release, the circumstances leading to the release, and the date of the release. You must also implement measures to prevent the reoccurrence of such releases and to respond to such releases.

3.2 Effluent Limits to Reduce Pollutants in Non-Stormwater Discharges

You must minimize any non-stormwater discharges authorized by this permit.

3.3 Effluent Limits Related to Endangered Species

You must protect federally-listed endangered or threatened species, or federally-designated critical habitat to maintain eligibility under Part 1.3.C.6.

3.4 Attainment of Water Quality Standards

A. You must select, install, implement and maintain control measures at your construction site that minimize pollutants in the discharge as necessary to meet applicable water quality standards. In general, except in situations explained in Part 3.4.B below, your stormwater controls developed, implemented, and updated consistent with the other provisions of Part 3 are considered as stringent as necessary to ensure that your discharges do not cause or contribute to an excursion above any applicable water quality standard.

B. At any time after authorization, EPA may determine that your stormwater discharges may cause, have reasonable potential to cause, or contribute to an excursion above any applicable water quality standard. If such a determination is made, EPA will require you to:

   i. Modify your stormwater controls in accordance with Part 3.6 to address adequately the identified water quality concerns;
   ii. Submit valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is attaining water quality standards; or
   iii. Cease discharges of pollutants from construction activity and submit an individual permit application according to Part 2.6.

All written responses required under this part must include a signed certification consistent with Appendix G, Section 11.

3.5 Consistency with Total Maximum Daily Loads

If you are discharging into a water with an EPA established or approved TMDL, you must implement measures to ensure that your discharge of pollutants from the site is consistent with the assumptions and requirements of the EPA-established or approved TMDL, including any specific wasteload allocation that has been established that would apply to your discharge. See Part 1.3.C.5 for further information on determining permit eligibility related to TMDLs.

3.6 Maintenance of Control Measures

A. You must maintain all control measures and other protective measures in effective operating condition. If site inspections required by Part 4 identify BMPs that are not operating effectively, you must perform maintenance as soon as possible and before the next storm event whenever practicable to maintain the continued effectiveness of stormwater controls.

B. If existing BMPs need to be modified or if additional BMPs are necessary for any reason, you must complete implementation before the next storm event whenever practicable. If implementation before the next storm event is impracticable, you must implement alternative BMPs as soon as possible.

C. You must remove sediment from sediment traps or sedimentation ponds when design capacity has been reduced by 50 percent.

D. You must remove trapped sediment from a silt fence before the deposit reaches 50 percent of the above-ground fence height (or before it reaches a lower height based on manufacturer's specifications).

3.7 Training of Employees

You must train employees and subcontractors as necessary to make them aware of the applicable control measures implemented at the site so that they follow applicable procedures.

3.8 Applicable State, Tribal, or Local Programs

You must ensure that the stormwater controls implemented at your site are consistent with all applicable federal, state, tribal, or local requirements for soil and erosion control and stormwater management.

PART 4: INSPECTIONS

A. ***Inspection Frequency:*** You must conduct inspections in accordance with one of the two schedules listed below. You must specify in your SWPPP which schedule you will be following.
   1. At least once every 7 calendar days, OR
   2. At least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater.

B. ***Case-by-Case Reductions in Inspection Frequency:*** You may reduce your inspection frequency to at least once every month if:
   1. The entire site is temporarily stabilized,
   2. Runoff is unlikely due to winter conditions (e.g., site is covered with snow, ice, or the ground is frozen), or
   3. Construction is occurring during seasonal arid periods in arid areas and semi-arid areas.

C. ***Inspection Waiver for Frozen Conditions:*** A waiver of the inspection requirements is available until one month before thawing conditions are expected to result in a discharge if all of the following requirements are met:
   1. The project is located in an area where frozen conditions are anticipated to continue for extended periods of time (i.e., more than one month);
   2. Land disturbance activities have been suspended; and
   3. The beginning and ending dates of the waiver period are documented in the SWPPP.

D. ***Qualified Personnel:*** Inspections must be conducted by qualified personnel (provided by the operator or cooperatively by multiple operators). "Qualified personnel" means a person knowledgeable in the principles and practice of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact stormwater quality and to assess the effectiveness of any sediment and erosion control measures selected to control the quality of stormwater discharges from the construction activity.

E. ***Scope of Inspections:*** Inspections must include all areas of the site disturbed by construction activity and areas used for storage of materials that are exposed to precipitation. Inspectors must look for evidence of, or the potential for, pollutants entering the stormwater conveyance system. Sedimentation and erosion control measures must be observed to ensure proper operation. Discharge locations must be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to waters of the United States, where accessible. Where discharge locations are inaccessible, nearby downstream locations must be inspected to the extent that such inspections are practicable. Locations where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking.

F. ***Reductions in Scope of Inspections for Stabilized Areas:*** Once a definable area has been finally stabilized, no further inspection requirements apply to that portion of the site (e.g., earth-disturbing activities around one of three buildings in a complex are done and the area is finally stabilized, one mile of a roadway or pipeline project is done and finally stabilized, etc).

G. ***Utility Line Inspections:*** Utility line installation, pipeline construction, and other examples of long, narrow, linear construction activities may limit the access of inspection personnel to the areas described in Part 4.E above. Inspection of these areas could require that vehicles compromise temporarily or even permanently stabilized areas, cause additional disturbance of soils, and increase the potential for erosion. In these circumstances, controls must be inspected on the same frequencies as other construction projects, but representative inspections may be performed. For representative inspections, personnel must inspect controls along the construction site for 0.25 mile above and below each access point where a roadway, undisturbed right-of-way, or other similar feature intersects the construction site and allows access to the areas described above. The conditions of the controls along each inspected 0.25 mile segment may be considered as representative of the condition of controls along

that reach extending from the end of the 0.25 mile segment to either the end of the next 0.25 mile inspected segment, or to the end of the project, whichever occurs first.

H. ***Inspection Report:*** For each inspection required above, you must complete an inspection report. At a minimum, the inspection report must include:
1. The inspection date;
2. Names, titles, and qualifications of personnel making the inspection;
3. Weather information for the period since the last inspection (or since commencement of construction activity if the first inspection) including a best estimate of the beginning of each storm event, duration of each storm event, approximate amount of rainfall for each storm event (in inches), and whether any discharges occurred;
4. Weather information and a description of any discharges occurring at the time of the inspection;
5. Location(s) of discharges of sediment or other pollutants from the site;
6. Location(s) of BMPs that need to be maintained;
7. Location(s) of BMPs that failed to operate as designed or proved inadequate for a particular location;
8. Location(s) where additional BMPs are needed that did not exist at the time of inspection; and
9. Corrective action required including implementation dates.

The inspection report must be signed in accordance with Appendix G, Section 11 of this permit.

PART 5: STORMWATER POLLUTION PREVETNION PLANS (SWPPPs)

5.1 Stormwater Pollution Prevention Plan Framework

You must prepare a SWPPP before submitting your Notice of Intent (NOI) for permit coverage. At least one SWPPP must be developed for each construction project covered by this permit and the stormwater controls implemented at your site must be documented in the SWPPP. If you prepared a SWPPP for coverage under a previous NPDES permit, you must review and update the SWPPP prior to submitting your NOI.

The SWPPP does not contain effluent limitations; the technology and water quality-based effluent limitations are contained in Part 3 of this permit. The SWPPP is intended to document the selection, design, installation, and implementation of control measures that are being used to comply with the effluent limitations set forth in Part 3.

The SWPPP must:
1. Identify all potential sources of pollutants that may reasonably be expected to affect the quality of stormwater discharges from the construction site; and
2. Describe control measures to be used to meet the effluent limits set forth in Part 3.

5.2 SWPPP Contents: Site and Activity Description

A. ***Construction Site Operators:*** The SWPPP must identify all operators for the project site, and the areas of the site over which each operator has control.

B. ***Nature of Construction Activity:*** The SWPPP briefly must describe the nature of the construction activity, including:
   1. The function of the project (e.g., low density residential, shopping mall, highway, etc.);
   2. The intended sequence and timing of activities that disturb soils at the site;
   3. Estimates of the total area expected to be disturbed by excavation, grading, or other construction activities, including dedicated off-site borrow and fill areas; and
   4. A general location map (e.g., USGS quadrangle map, a portion of a city or county map, or other map) with enough detail to identify the location of the construction site and waters of the United States within one mile of the site.

C. ***Site Map:*** The SWPPP must contain a legible site map, showing the entire site, identifying:
   1. Direction(s) of stormwater flow and approximate slopes anticipated after grading activities;
   2. Areas of soil disturbance and areas that will not be disturbed (or a statement that all areas of the site will be disturbed unless otherwise noted);
   3. Locations of major structural and nonstructural BMPs identified in the SWPPP;
   4. Locations where stabilization practices are expected to occur;
   5. Locations of off-site material, waste, borrow or equipment storage areas;
   6. Locations of all waters of the United States (including wetlands);
   7. Locations where stormwater discharges to a surface water; and
   8. Areas where final stabilization has been accomplished and no further construction-phase permit requirements apply.

D. ***Construction and Waste Materials:*** The SWPPP must include a description of construction and waste materials expected to be stored on-site with updates as appropriate.

E. ***Locations of Other Industrial Stormwater Discharges:*** The SWPPP must describe and identify the location and description of any stormwater discharge associated with industrial activity other than construction at the site. This includes stormwater discharges from dedicated asphalt plants and dedicated concrete plants that are covered by this permit.

5.3 Description of Control Measures to Reduce Pollutant Discharges

A. ***Control Measures:*** The SWPPP must include a description of all control measures that will be implemented to meet the effluent limits in Part 3. For each major activity identified in the project description the SWPPP must clearly document appropriate control measures, the general sequence during the construction process in which the

measures will be implemented, and which operator is responsible for the control measure's implementation.

B. ***Stabilization:*** The SWPPP must include a description of interim and permanent stabilization practices for the site, including a schedule of when the practices will be implemented.

C. ***Post-Authorization Records:*** The following records must be maintained with the SWPPP following authorization under this permit:
   1. Dates when grading activities occur;
   2. Dates when construction activities temporarily or permanently cease on a portion of the site; and
   3. Dates when stabilization measures are initiated.

5.4 Non-Stormwater Discharges

The SWPPP must identify all allowable sources of non-stormwater discharges listed in Part 1.3.B of this permit, except for flows from fire fighting activities that are combined with stormwater discharges associated with construction activity at the site. The SWPPP must also describe the pollution prevention measures used to eliminate or reduce non-stormwater discharges consistent with Part 3.2.

5.5 Documentation of Permit Eligibility Related to Endangered Species

The SWPPP must include documentation supporting a determination of permit eligibility with regard to Endangered Species, including:

A. Information on whether federally-listed endangered or threatened species, or federally-designated critical habitat may be in the project area;

B. Whether such species or critical habitat may be adversely affected by stormwater discharges or stormwater discharge-related activities from the project;

C. Results of the Appendix C listed species and critical habitat screening determinations;

D. Confirmation of delivery of NOI to EPA or to EPA's electronic NOI system. This may include an overnight, express or registered mail receipt acknowledgment; or electronic acknowledgment from EPA's electronic NOI system;

E. Any correspondence for any stage of project planning between the U.S. Fish and Wildlife Service (FWS), EPA, the U.S. National Marine Fisheries Service (NMFS), or others and you regarding listed species and critical habitat, including any notification that delays your authorization to discharge under this permit; and

F. A description of measures necessary to protect federally-listed endangered or threatened species, or federally-designated critical habitat.

5.6 Documentation of Permit Eligibility Related to Total Maximum Daily Loads

The SWPPP must include documentation supporting a determination of permit eligibility with regard to waters that have an EPA-established or approved TMDL, including:

A. Identification of whether your discharge is identified, either specifically or generally, in an EPA-established or approved TMDL and any associated allocations, requirements, and assumptions identified for your discharge;

B. Summaries of consultation with State or Federal TMDL authorities on consistency of SWPPP conditions with the approved TMDL, and

C. Measures taken by you to ensure that your discharge of pollutants from the site is consistent with the assumptions and requirements of the EPA-established or approved TMDL, including any specific wasteload allocation that has been established that would apply to your discharge.

See Part 1.3.C.5 for further information on determining permit eligibility related to TMDLs.

5.7 Copy of Permit Requirements

Copies of this permit and of the signed and certified NOI form that was submitted to EPA must be included in the SWPPP. Also, upon receipt, a copy of the letter from the EPA Stormwater Notice Processing Center notifying you of their receipt of your administratively complete NOI must also be included as a component of the SWPPP.

5.8 Applicable State, Tribal, or Local Programs

The SWPPP must be updated as necessary to reflect any revisions to applicable federal, state, tribal, or local requirements that affect the stormwater controls you implement at your site.

5.9 Inspections

A record of each inspection and of any actions taken in accordance with Part 4 must be retained with the SWPPP for at least three years from the date that permit coverage expires or is terminated. The inspection reports must identify any incidents of non-compliance with the permit conditions. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the construction project or site is in compliance with this permit.

5.10 Maintaining an Updated Plan

The SWPPP must be modified:

A. To reflect modifications to stormwater control measures made in response to a change in design, construction, operation, or maintenance at the construction site that has or could have a significant effect on the discharge of pollutants to the waters of the United States that has not been previously addressed in the SWPPP.

B. If during inspections or investigations by site staff, or by local, state, tribal or federal officials, it is determined that the existing stormwater controls are ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the construction site.

C. Based on the results of an inspection, as necessary to properly document additional or modified BMPs designed to correct problems identified. Revisions to the SWPPP must be completed within seven (7) calendar days following the inspection.

5.11 Signature, Plan Review and Making Plans Available

A. ***Retention of SWPPP:*** A copy of the SWPPP (including a copy of the permit), NOI, and acknowledgement letter from EPA must be retained at the construction site (or other location easily accessible during normal business hours to EPA, a state, tribal or local agency approving sediment and erosion plans, grading plans, or stormwater management plans; local government officials; the operator of a municipal separate storm sewer receiving discharges from the site; and representatives of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service) from the date of commencement of construction activities to the date of final stabilization. If you have day-to-day operational control over SWPPP implementation, you must have a copy of the SWPPP available at a central location on-site for the use of all those identified as having responsibilities under the SWPPP whenever they are on the construction site. If an on-site location is unavailable to store the SWPPP when no personnel are present, notice of the plan's location must be posted near the main entrance at the construction site.

B. ***Main Entrance Signage:*** A sign or other notice must be posted conspicuously near the main entrance of the construction site. If displaying near the main entrance is infeasible, the notice can be posted in a local public building such as the town hall or public library. The sign or other notice must contain the following information:
   1. A copy of the completed Notice of Intent as submitted to the EPA Stormwater Notice Processing Center; and
   2. If the location of the SWPPP or the name and telephone number of the contact person for scheduling SWPPP viewing times has changed (i.e., is different than that submitted to EPA in the NOI), the current location of the SWPPP and name and telephone number of a contact person for scheduling viewing times.

   For linear projects, the sign or other notice must be posted at a publicly accessible location near the active part of the construction project (e.g., where a pipeline project crosses a public road).

C. ***Availability of SWPPP:*** SWPPPs must be made available upon request by EPA; a state, tribal or local agency approving sediment and erosion plans, grading plans, or stormwater management plans; local government officials; the operator of a municipal separate storm sewer receiving discharges from the site; and representatives of the U.S. Fish and Wildlife Service or the National Marine Fisheries Service to the requestor. The copy of the SWPPP that is required to be kept on-site or

locally available must be made available, in its entirety, to the EPA staff for review and copying at the time of an on-site inspection.

D. ***Signature and Certification:*** All SWPPPs must be signed and certified in accordance with Appendix G, Section 11.

5.12 Requirements for Different Types of Operators

You may meet one or both of the operational control components in the definition of operator found in Appendix A. Part 5.12.C applies to all permittees having control over only a portion of a construction site.

A. If you have operational control over construction plans and specifications, you must ensure that:
   1. The project specifications meet the minimum requirements of this Part and all other applicable permit conditions;
   2. The SWPPP indicates the areas of the project where the operator has operational control over project specifications, including the ability to make modifications in specifications;
   3. All other permittees implementing portions of the SWPPP (or their own SWPPP) who may be impacted by a change to the construction plan are notified of such changes in a timely manner; and
   4. The SWPPP indicates the name of the party(ies) with day-to-day operational control of those activities necessary to ensure compliance with the SWPPP or other permit conditions.

B. If you have operational control over day-to-day activities, you must ensure that:
   1. The SWPPP meets the minimum requirements of this Part and identifies the parties responsible for implementation of control measures identified in the plan;
   2. The SWPPP indicates areas of the project where you have operational control over day-to-day activities;
   3. The SWPPP indicates the name of the party(ies) with operational control over project specifications (including the ability to make modifications in specifications).

C. If you have operational control over only a portion of a larger project (e.g., one of four homebuilders in a subdivision), you are responsible for compliance with all applicable effluent limits, terms, and conditions of this permit as it relates to your activities on your portion of the construction site, including protection of endangered species, critical habitat, and historic properties, and implementation of control measures described in the SWPPP. You must ensure either directly or through coordination with other permittees, that your activities do not render another party's pollutant discharge controls ineffective. You must either implement your portion of a common SWPPP or develop and implement your own SWPPP.
   For more effective coordination of BMPs and opportunities for cost sharing, a cooperative effort by the different operators at a site to prepare and participate in a comprehensive SWPPP is encouraged. Individual operators at a site may, but are not

required to, develop separate SWPPPs that cover only their portion of the project provided reference is made to other operators at the site. In instances where there is more than one SWPPP for a site, cooperation between the permittees is encouraged to ensure the stormwater discharge control measures are consistent with one another (e.g., provisions to protect listed species and critical habitat).

PART 6: TERMINATION OF COVERAGE

6.1 Submitting a Notice of Termination

Submit a complete and accurate Notice of Termination (NOT) either electronically (strongly encouraged) at www.epa.gov/npdes/eNOI or by completing the paper Notice of Termination form included in Appendix F of this permit and submitting that form to the address listed in Part 2.2.

6.2 When to Submit a Notice of Termination

You may only submit a Notice of Termination (NOT) after one or more of the following conditions have been met:

A. Final stabilization has been achieved on all portions of the site for which you are responsible;

B. Another operator has assumed control according to Appendix G, Section 11.C over all areas of the site that have not been finally stabilized;

C. Coverage under an individual or alternative general NPDES permit has been obtained; or

D. For residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

The NOT must be submitted within 30 days of one of the above conditions being met. Authorization to discharge terminates at midnight of the day the NOT is signed.

PART 7: RETENTION OF RECORDS

Copies of the SWPPP and all documentation required by this permit, including records of all data used to complete the NOI to be covered by this permit, must be retained for at least three years from the date that permit coverage expires or is terminated. This period may be extended by request of EPA at any time.

PART 8: REOPENER CLAUSE

8.1 Procedures for Modification or Revocation

Permit modification or revocation will be conducted according to 40 CFR §122.62, §122.63, §122.64 and §124.5.

8.2 Water Quality Protection

If there is evidence indicating that the stormwater discharges authorized by this permit cause, have the reasonable potential to cause or contribute to an excursion above any applicable water quality standard, you may be required to obtain an individual permit in accordance with Part 2.6 of this permit, or the permit may be modified to include different limitations and/or requirements.

8.3 Timing of Permit Modification

EPA may elect to modify the permit prior to its expiration (rather than waiting for the new permit cycle) to comply with any new statutory or regulatory requirements, such as for effluent limitation guidelines that may be promulgated in the course of the current permit cycle.

PART 9: STANDARD PERMIT CONDITIONS

The federal regulations require that the Standard Conditions provisioned at 40 CFR §122.41 be applied to all NPDES permits. You are required to comply with those Standard Conditions, details of which are provided in Appendix G.

PART 10: PERMIT CONDITIONS APPLICABLE TO SPECIFIC STATES, INDIAN COUNTRY, OR TERRITORIES

The provisions of this Part provide modifications or additions to the applicable conditions of this permit to reflect specific additional conditions required as part of the state or tribal CWA Section 401 certification process, or the Coastal Zone Management Act (CZMA) certification process, or as otherwise established by the permitting authority. The specific additional revisions and requirements only apply to activities in those specific states, Indian country, and federal facilities. States, Indian country, and federal facilities not included in this Part do not have any modifications or additions to the applicable conditions of this permit.

A. Region 1

1. MAR100000: Commonwealth of Massachusetts, except Indian country
   a. State Water Quality Statutes, Regulations, and Policies:
      i. You must comply with the Massachusetts Clean Waters Act (Ch. 21, ss. 26-53).
      ii. You must comply with the conditions in 314 CMR 4.00 - Surface Water Quality Standards.
      iii. You must comply with the conditions in 314 CMR 3.00 - Surface Water Discharge Permit Program.
      iv. You must comply with the Wetlands Protection Act, Ch. 131, s. 40 and its regulations, 310 CMR 10.00 and any order of Conditions issued by a Conservation Commission or a Superseding Order of Conditions issued by the Massachusetts Department of Environmental Protection.
   b. Department of Environmental Protection Storm Water Management Policy:

i. You must comply with the Massachusetts Storm Water Management Policy, and applicable Storm Water Performance Standards, as prescribed by state regulations promulgated under the authority of the Massachusetts Clean Waters Act, MGL Ch. 21, ss. 26-53 and the Wetlands Protection Act Ch. 131, s. 40.

c. Other State Environmental Laws, Regulations, Policies:

i. You must comply with the Massachusetts Endangered Species Act [MESA] (MGL Ch. 313A and regulations at 321 CMR 10.00) and any actions undertaken to comply with this storm water permit, shall not result in non-compliance with the MESA.

ii. You must not conduct activities under this permit that will interfere with implementation of mosquito control work conducted in accordance with Chapter 252 including, s. 5A thereunder and MassDEP Guideline Number BRP G01-02, West Nile Virus Application of Pesticides to Wetland Resource Areas and Buffer Zones, and Public Water Systems.

d. Other Department Directives:

i. The Department may require you to perform water quality monitoring during the permit term if monitoring is necessary for the protection of public health or the environment as designated under the authority at 314 CMR 3.00.

ii. The Department may require you to provide measurable verification of the effectiveness of BMPs and other control measures in your management program, including water quality monitoring.

iii. The Department has determined that compliance with this permit does not protect you from enforcement actions deemed necessary by the Department under its associated regulations to address an imminent threat to the public health or a significant adverse environmental impact which results in a violation of the Massachusetts Clean Waters Act, Ch. 21, ss. 26-53.

iv. The Department reserves the right to modify the 401 Water Quality Certification if any changes, modifications or deletions are made to the general permit. In addition, the Department reserves the right to add and/or alter the terms and conditions of its 401 Water Quality Certification to carry out its responsibilities during the term of this permit with respect to water quality, including any revisions to 314 CMR 4.00, Surface Water Quality Standards.

e. Permit Compliance

i. Should any violation of the Massachusetts Surface Water Quality Standards (314 CMR 4.00) or the conditions of this certification occur, the Department will direct you to correct the violations(s). The Department has the right to take any action as authorized by the General Laws of the Commonwealth to address the violation of this permit or the MA Clean Waters Act and the regulations promulgated thereunder. Substantial civil and criminal penalties are authorized under MGL Ch. 21, s. 42 for discharging into Massachusetts' waters in violation of an order or permit issued by this Department. This

certification does not relieve you of the duty to comply with other applicable Massachusetts statutes and regulations.

2. NHR100000: State of New Hampshire [RESERVED]

B. Region 2 – [RESERVED]

C. Region 6

1. NMR100000: The State of New Mexico, except Indian country
   a. In addition to all other provisions of this permit, operators who intend to obtain authorization under this permit for all new stormwater discharges must satisfy the conditions in Part 10.C.1.b., unless a TMDL has been established for the receiving stream which specifies a waste load allocation (WLA) for construction stormwater discharges or the receiving stream is a Tier 3 water, in which case Part 10.C.1.c. applies.
   b. The SWPPP must include site-specific interim and permanent stabilization, managerial, and structural solids, erosion, and sediment control best management practices (BMPs) and/or other controls that are designed to prevent to the maximum extent practicable an increase in the sediment yield and flow velocity from pre-construction, pre-development conditions to assure that applicable standards in 20.6.4 NMAC, including the antidegradation policy, or WLAs are met. This requirement applies to discharges both during construction and after construction operations have been completed. The SWPPP must identify, and document the rationale for selecting these BMPs and/or other controls. The SWPPP must also describe design specifications, construction specifications, maintenance schedules (including a long term maintenance plan), criteria for inspections, as well as expected performance and longevity of these BMPs. BMP selection must be made based on the use of appropriate soil loss prediction models (such as SEDCAD 4.0, RUSLE, SEDIMOT II, MULTISED, etc.), or equivalent, generally accepted (by professional erosion control specialists), soil loss prediction tools. The operator(s) must demonstrate, and include documentation in the SWPPP, that implementation of the site-specific practices will assure that the applicable standards or WLAs are met, and will result in sediment yields and flow velocities that, to the maximum extent practicable, will not be greater than the sediment yield levels and flow velocities from pre-construction, pre-development conditions. The SWPPP must be prepared in accordance with good engineering practices by qualified (e.g., CPESC certified, engineers with appropriate training, etc.) erosion control specialists familiar with the use of soil loss prediction models and design of erosion and sediment control systems based on these models (or equivalent soil loss prediction tools). The operator(s) must design, implement, and maintain BMPs in the manner specified in the SWPPP.
   c. Operators are not eligible to obtain authorization under this permit for all new stormwater discharges to outstanding national resource waters (ONRWs) (also referred to as "Tier 3: waters). According to the Antidegradation Policy at Paragraph 3 of Subsection A of 20.6.4.8 NMAC, in part, "ONRWs may include,

but are not limited to, surface waters of the state within national and state monuments, parks, wildlife refuges, waters of exceptional recreational or ecological significance, and waters identified under the Wild and Scenic Rivers Act." No ONRWs exist at the time this permit is being finalized; however, during the term of the permit, if a receiving water is designated as an ONRW, the operator must obtain an individual permit for stormwater discharges from large and small construction activities.

d. Stormwater discharges associated with construction activity that the State has determined to be or may reasonably be expected to be contributing to a violation of an applicable standard, including the antidegradation policy, are not authorized by this permit. *Note: Upon receipt of this determination, NMED anticipates that, within a reasonable period of time, EPA will notify the general permittee to apply for and obtain an individual NPDES permit for these discharges per 40 CFR Part 122.28(b)(3).*
e. Inspections required under Part 4 must be conducted at least once every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater. The option for inspections at least once per 7 calendar days is not available. The Inspection Waivers provided in Part 4.B and C still apply.
f. Permittees can use temporary erosion controls as described in item 3 of the Appendix A definition of "Final Stabilization" as a method for final stabilization under the permit only under the following conditions:

   If this option is selected, you must notify SWQB at the address listed in item g. below at the time the NOT is submitted to EPA. The information to be submitted includes:

- A copy of the NOT;
- Contact information, including individual name or title, address, and phone number for the qualified (see CGP Part 4.10.D) party responsible for implementing the final stabilization measures; and
- The date that the temporary erosion control practice was implemented (this is always prior to, and sometimes significantly prior to, submission of an NOT) and the projected timeframe that the 70% native vegetative cover requirements are expected to be met. (Note that if more than three years is required to establish 70 percent of the natural vegetative cover, this technique cannot be used or cited for fulfillment of the final stabilization requirement – you remain responsible for establishment of final stabilization)

SWQB also requires that you periodically (minimum once/year) inspect and properly maintain the area until the criteria for final stabilization, as defined in Appendix A, item 3 of the CGP, have been met. You must prepare an inspection report documenting the findings of these inspections and signed in accordance with Appendix G, Section 11 of the CGP. This inspection record must be retained along with the SWPPP for three years after the NOT is submitted for the site and additionally submitted to SWQB at the address listed in item g. below. The inspections must at a minimum include the following:

- Observations of all areas of the site disturbed by construction activity;
- Best Management Practices (BMPs)/post-construction storm water controls must be observed to ensure they are effective;
- An assessment of the status of vegetative re-establishment; and
- Corrective actions required to ensure vegetative success within three years, and control of pollutants in storm water runoff from the site, including implementation dates.

g. Signed copies of discharge monitoring reports, individual permit applications, and all other reports required by the permit to be submitted, shall also be sent to:

Program Manager
Point Source Regulation Section
Surface Water Quality Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, NM 87502

2. NMR15000I: Indian country within the State of New Mexico, except Navajo Reservation Lands that are covered under Arizona permit AZR10000I and Ute Mountain Reservation Lands that are covered under Colorado permit COR10000I [RESERVED]
3. OKR15000F: Discharges in the State of Oklahoma that are not under the authority of the Oklahoma Department of Environmental Quality, including activities associated with oil and gas exploration, drilling, operations, and pipelines (includes SIC Groups 13 and 46, and SIC codes 492 and 5171), and point source discharges associated with agricultural production, services, and silviculture (includes SIC Groups 01, 02, 07, 08, 09). [RESERVED]

D. Region 8 [RESERVED]

E. Region 9

1. ASR100000: The Island of American Samoa
   a. Discharges authorized by the general permit shall meet all applicable American Samoa water quality standards.
   b. Permittees discharging under the general permit shall comply with all conditions of the permit.
2. AZR10000I: Indian country lands within the State of Arizona, including Navajo Reservation lands in New Mexico and Utah
   a. White Mountain Apache Tribe. The following condition applies only for projects on the White Mountain Apache Reservation: All NOIs for proposed stormwater discharge coverage shall be provided to the following address:

      Tribal Environmental Planning Office
      P.O. Box 2109
      Whiteriver, AZ 85941

b. Hoopa Valley Tribe. The following conditions apply only for projects on the Hoopa Valley Reservation:

   i. All notices of intent submitted for stormwater discharges under the general permit in Hoopa Valley Indian Reservation (HVIR) shall be submitted to the Tribal Environmental Protection Agency (TEPA); and

   ii. All pollution prevention plans for stormwater discharge in HVIR shall be submitted to TEPA for review and approval.

c. 29 Palms Band of Mission Indians. The following conditions apply only for projects on the 29 Palms Band of Mission Indians Reservation:

   i. The 29 Palms Tribal EPA is informed of any future changes made to the proposed CGP;

   ii. For each permitted activity, the U.S. EPA will ensure that all terms and conditions of the proposed CGP are complied with;

   iii Notices of intent must be submitted to the 29 Palms Tribal EPA for review, comment and tracking;

   iv. Copies of stormwater pollution prevention plans (SWPPPs) and supporting Best Management Practices (BMPs) must be submitted to the 29 Palms Tribal EPA for review and compliance;

   v. Copies of all monitoring reports must be provided to the 29 Palms Tribal EPA;

   vi. Depending on the permitted activity, the 29 Palms Tribal EPA reserves the right to stipulate additional monitoring requirements; and

   vii. In order to meet the requirements of Tribal law, including water quality standards, each of the conditions cited in the proposed CGP and the Twenty-Nine Palms Band of Mission Indians certification shall not be made any less stringent.

d. Hualapai Tribe. The following conditions apply only for projects on the Hualapai Reservation:

   i. All notices of intent for proposed stormwater discharges under the CGP and all pollution prevention plans for stormwater discharges on Hualapai Tribal lands shall be submitted to the Water Resource Program through the Tribal Chairman for review and approval, P.O. Box 179, Peach Springs, AZ 86434.

e. Pyramid Lake Paiute Tribe. The following conditions apply only for projects on the Pyramid Lake Paiute Reservation:

   i. All notices of intent (NOIs) must be submitted to the Tribe for review, comments and tracking;

   ii. copies of all Stormwater Pollution Prevention Plan (SWPPPs) and supporting Best Management Practices (BMPs) must be submitted to the Pyramid Lake Paiute Tribe for review and concurrence;

iii. copies of the criteria for Effluent Limitations Guidelines (ELGs) and the criteria for proposed Qualifying Local Programs (QLPs) to be used for sediment and erosion control pursuant to 40 CFR 122.44(s) be provided to the Pyramid Lake Paiute Tribe; and

iv. copies of all monitoring reports must be provided to the Pyramid Lake Paiute Tribe.

3. MPR100000: Commonwealth of the Northern Mariana Islands (CNMI)
   a. An Earthmoving and Erosion Control Permit shall be obtained from the CNMI DEQ prior to any construction activity covered under the NPDES general permit.
   b. All conditions and requirements set forth in the USEPA NPDES general permit for discharges from large and small construction must be complied with.
   c. A SWPPP for storm water discharges from construction activity must be approved by the Director of the CNMI DEQ prior to the submission of the NOI to USEPA. The CNMI address for the submittal of the SWPPP for approval is:

      Commonwealth of the Northern Mariana Islands
      Office of the Governor
      Director, Division of Environmental Quality (DEQ)
      P.O. Box 501304 C.K.
      Saipan, MP 96950-1304

   d. An NOI to be covered by the general permit for discharges from large and small construction sites must be submitted to CNMI DEQ (use above address) and USEPA, Region 9, in the form prescribed by USEPA, accompanied by a SWPPP approval letter from CNMI DEQ.
   e. The NOI must be postmarked seven (7) calendar days prior to any storm water discharges and a copy must be submitted to the Director of CNMI DEQ (use above address) no later than seven (7) calendar days prior to any stormwater discharges.
   f. Copies of all monitoring reports required by the NPDES general permit must be submitted to CNMI DEQ (use above address).
   g. In accordance with section 10.3(h) and (i) of the CNMI water quality standards, CNMI DEQ reserves the right to deny coverage under the general permit and to require submittal of an application for an individual NPDES permit based on a review of the NOI or other information made available to the Director.

F. Region 10

1. AKR100000: The State of Alaska, except Indian country
   a. For Storm Water Pollution Prevention Plans
      i. Operators of construction projects disturbing at least one acre of land but less than five acres of land shall submit a copy of the Notice of Intent (NOI) to the Alaska Department of Environmental Conservation (ADEC) at the same time it is submitted to the EPA. Submittals to ADEC shall be made to the following address

         Alaska Department of Environmental Conservation

Wastewater Discharge/Storm Water
555 Cordova St.
Anchorage, AK 99501

ii. Operators of construction projects that disturb five or more acres of land and that are located outside the areas of the local governments described in numbers iii, iv, v, or vi below, shall submit a copy of the Storm Water Pollution Prevention Plan (SWPPP) and a copy of the NOI to ADEC for review. The SWPPP shall be accompanied by the state-required plan review fee (see 18 AAC 72.955).

iii. Within the Municipality of Anchorage

(1) Operators of construction projects disturbing one or more acres of land shall submit a copy of the SWPPP to either ADEC or the Municipality based on the project type and operator as shown in the following table

Project Type	Submit SWPPP to
Government (federal, state, municipal) road projects and other government transportation projects such as ports, railroads or airports	ADEC
Utility projects for which the utility is initiating the work	Municipality
Work that requires a Building Permit	Municipality
Non-publicly funded transportation projects	Municipality

(2) Submittal of the SWPPP to the Municipality should be made before or at the same time the NOI is submitted to the EPA and ADEC and shall be accompanied by any Municipality-required fee. Copies of the SWPPP shall be submitted to the Municipality at the following address

Municipality of Anchorage
Office of Planning Development and Public Works
4700 South Elmore Rd.
PO Box 196650
Anchorage, AK 99519-6650

(3) Submittals to ADEC shall include a copy of the SWPPP and a copy of the NOI for review and shall be accompanied by the state-required plan review fee (see 18 AAC 72.995).

iv. Within the urbanized area boundary of the Fairbanks North Star Borough check with the Borough for the latest requirements.

Fairbanks North Star Borough
Department of Public Works
PO Box 71267
Fairbanks, AK 99707

v. Within the urbanized area boundary of the City of Fairbanks

(1) Operators of privately-funded construction projects disturbing one or more acres of land shall submit a copy of the SWPPP to the City of Fairbanks.

(2) Submittal of the SWPPP to the City of Fairbanks should be made before or at the same time the NOI is submitted to the EPA and

ADEC and shall be accompanied by any City-required fee. Copies of the SWPPP shall be submitted to the City of Fairbanks at the following address

City of Fairbanks
Engineering Division
800 Cushman St
Fairbanks, AK 99701

(3) Operators of publicly-funded projects disturbing one or more acres of land shall submit a copy of the SWPPP and a copy of the NOI to ADEC for review, and shall be accompanied by the state-required plan review fee (see 18 AAC 72.995).

vi. Within the urbanized area boundary of the City of North Pole

(1) Operators of privately-funded construction projects disturbing one or more acres of land shall submit a copy of the SWPPP to the City of North Pole.

(2) Submittal of the SWPPP to the City of North Pole should be made before or at the same time the NOI is submitted to the EPA and ADEC and shall be accompanied by any City-required fee. Copies of the SWPPP shall be submitted to the City of North Pole at the following address

City of North Pole
Department of Public Works
125 Snowman Lane
North Pole, AK 99705

(3) Operators of publicly-funded projects disturbing one or more acres of land shall submit a copy of the SWPPP and a copy of the NOI to ADEC for review, and shall be accompanied by the state-required plan review fee (see 18 AAC 72.995).

vii. For hardrock mines that are designed to process 500 or more tons per day and intend to file a Notice of Intent to begin construction under this permit

(1) The operator shall submit their SWPPP to ADEC for review at least 90 days before the start of construction,

(2) Representatives of the operator and the prime site construction contractor shall meet with ADEC representatives in a pre-construction conference at least 20 days before the start of construction to discuss the details of the SWPPP and stormwater management during construction,

(3) The operator shall submit to ADEC addendums to the SWPPP that address any planned physical alterations, additions to the permitted facility, or unanticipated conditions that arise during planned construction that could significantly change the nature, or increase the quantity, of pollutants discharged from the facility, and

(4) The operator shall have at least one person on-site during construction who is qualified and trained in the principles and practices of erosion and sediment control and has the authority to direct the maintenance of storm water best management practices.

b. For Post-Construction (Permanent) Storm Water Control Measures (Section 3.1.E *[Post-Construction Stormwater Management]* of the CGP)
   i. Operators of construction projects who construct, alter, install, modify, or operate any part of a storm water treatment system and are located outside the Municipality of Anchorage, shall submit a copy of the engineering plans to ADEC for review at the address given above (see 18 AAC 72.600).
   ii. Operators of construction projects who construct, alter, install, modify, or operate any part of a storm water treatment system and are located inside the Municipality of Anchorage, shall submit a copy of the engineering plans to the respective government agency based on project type, as indicated in the table in a.iii.*(1)* above, for review at the addresses given in a.i. or a.iii.*(2)* above.

2. IDR100000: The State of Idaho, except Indian country
   a. *303(d)-listed Water Bodies with Approved TMDLs.*
      Discharges of storm water will be consistent with load allocations established by the applicable TMDL.
   b. *303(d)-listed Water Bodies without Approved TMDLs (High Priority)*
      If a TMDL has not been established for a high priority 303(d)-listed water body, then discharges of storm water may not cause an increase in the total load of listed pollutant(s) in the receiving water body.
   c. *303(d)-listed Water Bodies without Approved TMDLs (Medium or Low Priority)*
      If a TMDL has not been established for a medium or low priority 303(d)-listed water body, then best management practices shall be employed as necessary to prohibit further impairment of the designated or existing beneficial uses in the receiving water body.
   d. *Best Management Practices (BMPs)*
      BMPs must be designed, implemented, and maintained by the permittee to fully protect and maintain the beneficial uses of the receiving water body. The permittee should select appropriate BMPs that are either authorized by the appropriate designated agency as defined in Idaho Water Quality Standards (IDAPA 58.01.02), recommended in IDEQ's *Catalog of Stormwater BMPs for Idaho Cities and Counties*, or recommended by other local government entities or guidance documents.
   e. *Equivalent Analysis Waiver* - Use of the "Equivalent Analysis Waiver" in Appendix D of the permit is not authorized.
   f. Operators may contact the Idaho Department of Environmental Quality regional office nearest the construction activity for more information about impaired waterways:
      <u>Boise Regional Office:</u>
      1445 N. Orchard
      Boise ID 83706-2239
      Tel: (208)373-0550
      Fax: (208)373-0287

Grangeville Satellite Office:
300 W. Main
Grangeville ID 83530
Tel: (208)983-0808
Fax: (208)983-2873

Pocatello Regional Office:
444 Hospital Way #300
Pocatello ID 83201
Tel: (208)236-6160
Fax: (208)236-6168

McCall Satellite Office:
502 N. 3rd Street #9A
P.O. Box 4654
McCall, ID 83638
Tel: (208)634-4900
Fax: (208)634-9405

Idaho Falls Regional Office:
900 N. Skyline, Suite B
Idaho Falls, ID 83402
Tel: (208)528-2650
Fax: (208)528-2695

Twin Falls Regional Office:
1363 Fillmore
Twin Falls, ID 83301
Tel: (208)736-2190
Fax: (208)736-2194

Coeur d'Alene Regional Office:
2110 Ironwood Parkway
Coeur d'Alene ID 83814
Tel: (208)769-1422
Fax: (208)769-1404

Lewiston Regional Office:
1118 "F" Street
Lewiston, ID 83501
Tel: (208)799-4370
Toll Free: 1-877-541-3304
Fax: (208)799-3451

3. ORR10000I: Indian country within the State of Oregon, except Fort McDermitt Reservation lands (see Region 9):

a. Confederated Tribes of the Umatilla Indian Reservation.
The following conditions apply only for projects within the exterior boundaries of the Umatilla Indian Reservation:

i. The operator shall be responsible for achieving compliance with the Confederated Tribes of the Umatilla Indian Reservation's (CTUIR) Water Quality Standards.

ii. The operator must submit all Storm Water Pollution Prevention Plans required under this general permit to the CTUIR Water Resources Program for review and determination that the SWPPP is sufficient to meet Tribal Water Quality Standards prior to the beginning of any discharge activities taking place.

iii. The operator must submit a copy of the Notice of Intent (NOI) to be covered by this general permit to the CTUIR Water Resources Program at the address below, at the same time it is submitted to EPA.

iv. The operator shall be responsible for reporting an exceedance of Tribal Water Quality Standards to the CTUIR Water Resources Program at the same time it is reported to EPA.

Confederated Tribes of the Umatilla Indian Reservation
Water Resources Program
P.O. Box 638
Pendleton, OR 97801
(541) 966-2420

v. At least 45 days prior to beginning any discharge activities, the operator must submit a copy of the Notice of Intent to be covered under this general permit and an assessment of whether the undertaking has the potential to affect historic properties to CTUIR Tribal Historic Preservation Office (THPO) at the address below. If the project has potential to affect historic properties, the operator must define the area of potential effect (APE). The operator must provide the THPO at least 30 days to comment on the APE as defined.

vi. If the project is an undertaking, the operator must conduct a cultural resource investigation. All fieldwork must be conducted by qualified personnel (as outlined by the Secretary of the Interior's Standards and Guidelines found at http://www.nps.gov/history/local-law-arch_stnds_0.htm). All fieldwork must be documented using Oregon Reporting Standards (as outlined at http://egov.oregon.gov/OPRD/HCD/ARCH/arch_pubsandlinks.shtml). The resulting report must be submitted to the THPO for concurrence before any ground disturbing work can occur. The operator must provide the THPO at least 30 days to review and respond to all reports.
The operator must obtain THPO concurrence in writing. If historic properties are present, this written concurrence will outline measures to be taken to prevent or mitigate effects to historic properties.

Confederated Tribes of the Umatilla Indian Reservation
Cultural Resources Protection Program
Tribal Historic Preservation Office
P.O. Box 638
Pendleton, OR 97801
(541) 966-2340

b. Confederated Tribes of Warm Springs.
The following conditions apply only for projects on the Warm Springs Indian Reservation:
   i. All activities covered by this NPDES general permit occurring within a designated riparian buffer zone as established in Ordinance 74 (Integrated Resource Management Plan or IRMP) must be reviewed, approved and permitted through the Tribe's Hydraulic Permit Application process, including payment of any applicable fees.
   ii. All activities covered by this NPDES general permit must follow all applicable land management and resource conservation requirements specified in the IRMP.
   iii. Operators of activities covered by this NPDES general permit must submit a Storm Water Pollution Prevention Plan to the Tribe's Water Control Board at the following address for approval at least 30 days prior to beginning construction activity:

Chair, Warm Springs Water Control Board
P.O. Box C
Warm Springs, Oregon 97761

4. WAR10000F: Federal Facilities in the State of Washington, except those located on Indian Country

a. Discharges shall not cause or contribute to a violation of surface water quality standards (Chapter 173-201A WAC), ground water quality standards (Chapter 173-200 WAC), sediment management standards (Chapter 173-204 WAC), and human health-based criteria in the National Toxics Rule (40 CFR Part 131.36). Discharges that are not in compliance with these standards are not authorized.
b. Prior to the discharge of stormwater and non-stormwater to waters of the state, the Permittee shall apply all known, available, and reasonable methods of prevention, control, and treatment (AKART). This includes the preparation and implementation of an adequate Stormwater Pollution Prevention Plan (SWPPP), with all appropriate best management practices (BMPs) installed and maintained in accordance with the SWPPP and the terms and conditions of this permit.
c. Sampling & Numeric Effluent Limitations – For Sites Discharging to Certain Waterbodies on the 303(d) List or with an Applicable TMDL
   i. Permittees that discharge to water bodies listed as impaired by the State of Washington under Section 303(d) of the Clean Water Act for turbidity, fine sediment, high pH or phosphorus, shall conduct water quality sampling according to the requirements of this section.
      (1) The operator must retain all monitoring results required by this section as part of the SWPPP. All data and related monitoring records must be

provided to EPA or the Washington Department of Ecology upon request.

(2) The operator must notify EPA when the discharge turbidity or discharge pH exceeds the water quality standards as defined in Parts 10.F.4.d.ii and e.ii below, in accordance with the reporting requirements of Part G.12.F of this permit. All reports must be submitted to EPA at the following address:
U.S EPA Region 10
NPDES Compliance Unit - Attn: Federal Facilities Compliance Officer
1200 6th Avenue, Suite 900
OCE-133
Seattle, WA 98101
(206) 553-1846

ii. All references and requirements associated with Section 303(d) of the Clean Water Act mean the most current listing by Ecology of impaired waters that exists on November 16, 2005, or the date when the operator's complete NOI is received by EPA, whichever is later.

Parameter identified in 303(d) listing	**Paramete r/Units**	Analytical Method	Sampling Frequency	Water Quality Standard
Turbidity Fine Sediment Phosphorus	Turbidity/NTU	SM2130 or EPA180.1	Weekly, if discharging	If background is 50 NTU or less: 5 NTU over background; or If background is more than 50 NTU: 10% over background
High pH	pH/Standard Units	pH meter	Weekly, if discharging	In the range of 6.5 – 8.5

d. Discharges to waterbodies on the 303(d) list for turbidity, fine sediment, or phosphorus

i. Permittees which discharge to waterbodies on the 303(d) list for turbidity, fine sediment, or phosphorus shall conduct turbidity sampling at the following locations to evaluate compliance with the water quality standard for turbidity:

(1) Background turbidity shall be measured in the 303(d) listed receiving water immediately upstream (upgradient) or outside the area of influence of the discharge; and

(2) Discharge turbidity shall be measured at the point of discharge into the 303(d) listed receiving waterbody, inside the area of influence of the discharge; **or**
Alternatively, discharge turbidity may be measured at the point where the discharge leaves the construction site, rather than in the receiving waterbody.

ii. Based on sampling, if the discharge turbidity ever exceeds the water quality standard for turbidity (more than 5 NTU over background turbidity when the background turbidity is 50 NTU or less, or more than a 10% increase in turbidity when the background turbidity is more than 50 NTU), all future discharges shall comply with a numeric effluent limit which is equal to the water quality standard for turbidity. If a future discharge exceeds the water quality standard for turbidity, the permittee shall:

(1) Review the SWPPP for compliance with the permit and make appropriate revisions within 7 days of the discharge that exceeded the standard;

(2) Fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, but no later than 10 days of the discharge that exceeded the standard;

(3) Document BMP implementation and maintenance in the site log book;

(4) Continue to sample daily until discharge turbidity meets the water quality standard for turbidity.

e. Discharges to waterbodies on the 303(d) list for High pH

i. Permittees which discharge to waterbodies on the 303(d) list for high pH shall conduct sampling at one of the following locations to evaluate compliance with the water quality standard for pH (in the range of 6.5 – 8.5):

(1) pH shall be measured at the point of discharge into the 303(d) listed waterbody, inside the area of influence of the discharge; or

(2) Alternatively, pH may be measured at the point where the discharge leaves the construction site, rather than in the receiving water.

ii. Based on the sampling set forth above, if the pH ever exceeds the water quality standard for pH (in the range of 6.5 – 8.5), all future discharges shall comply with a numeric effluent limit which is equal to the water quality standard for pH. If a future discharge exceeds the water quality standard for pH, the permittee shall:

(1) Review the SWPPP for compliance with the permit and make appropriate revisions within 7 days of the discharge;

(2) Fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible, but no later than 10 days of the discharge that exceeded the standards;

(3) Document BMP implementation and maintenance in the site log book;

(4) Continue to sample daily until discharge meets the water quality standard for pH (in the range of 6.5 – 8.5).

f. Sampling & Limitations – For Sites Discharging to TMDLs

i. Discharges to waterbodies subject to an applicable Total Maximum Daily Load (TMDL) for turbidity, fine sediment, high pH, or phosphorus, shall be consistent with the assumptions and requirements of the TMDL.

(1) Where an applicable TMDL sets specific waste load allocations or requirements for discharges covered by this permit, discharges shall be consistent with any specific waste load allocations or requirements established by the applicable TMDL.

a. Discharges shall be sampled weekly, or as otherwise specified by the TMDL, to evaluate compliance with the specific waste load allocations or requirements.

b. Analytical methods used to meet the monitoring requirements shall conform to the latest revision of the Guidelines Establishing Test Procedures for the Analysis of Pollutants contained in 40 CFR Part 136.

(2) Where an applicable TMDL has established a general waste load allocation for construction stormwater discharges, but no specific requirements have been identified, compliance with this permit will be assumed to be consistent with the approved TMDL.

(3) Where an applicable TMDL has not specified a waste load allocation for construction stormwater discharges, but has not excluded these discharges, compliance with this permit will be assumed to be consistent with the approved TMDL.

(4) Where an applicable TMDL specifically precludes or prohibits discharges from construction activity, the operator is not eligible for coverage under this permit.

ii. Applicable TMDL means a TMDL for turbidity, fine sediment, high pH, or phosphorus, which has been completed and approved by EPA prior to November 16, 2005, or prior to the date the operator's complete NOI is received by EPA, whichever is later.
Information on impaired waterways is available from the Department of Ecology website at:
http://www.ecy.wa.gov/programs/wq/stormwater/construction/impaired.html
or by phone: 360-407-6460.

5. WAR10000I: Indian country within the State of Washington

a. Kalispel Tribe.

The following conditions apply only for projects on the Kalispel Reservation:

i. The permittee shall be responsible for achieving compliance with the Kalispel Tribe's Water Quality Standards.

ii. The permittee shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the Kalispel Tribe Natural Resources Department at the same time as it submitted to the U.S. EPA

iii. The permittee shall submit all Storm Water Prevention Plans (SWPP) to the Kalispel Tribe Natural Resources Department thirty (30) days prior to beginning any discharge activities for review.

iv. Prior to any land disturbing activities on the Kalispel Indian Reservation and its dependent communities, the permittee shall obtain a cultural resource clearance letter from the Kalispel Natural Resource Department.

v. All tribal correspondence pertaining to the general permit for discharges of construction stormwater shall be sent to:

Kalispel Tribe Natural Resources Department
PO Box 39
Usk, WA 99180

b. Lummi Nation

The following conditions apply only for projects on the Lummi Reservation:

i. Pursuant to Lummi Code of Laws (LCL) 17.05.020(a), the operator must obtain a land use permit from the Lummi Planning Department as provided in Title 15 of the Lummi Code of Laws and regulations adopted thereunder.

ii. Pursuant to LCL 17.05.020(a), each operator shall develop and submit a Storm Water Pollution Prevention Plan to the Lummi Water Resources Division for review and approval by the Water Resources Manager prior to beginning any discharge activities.

iii. Pursuant to LCL Title 17, each operator shall be responsible for achieving compliance with the Water Quality Standards for Surface Waters of the Lummi Indian Reservation (Lummi Administrative Regulations [LAR] 17 LAR 07.010 through 17 LAR 07.210).

iv. Each operator shall submit a copy of the Notice of Intent to the Lummi Water Resources Division at the same time it is submitted to the Environmental Protection Agency (EPA).

v. Storm Water Pollution Prevention Plans and Notices of Intent shall be submitted to:

Lummi Natural Resources Department
ATTN: Water Resources Manager
2616 Kwina Road
Bellingham, WA 98226

vi. Refer to the Lummi Nation website at *http://www.lummi-nsn.gov* to review a copy of Title 17 of the Lummi Code of Laws and the references upon which the conditions identified above are based.

c Makah Tribe

The following conditions apply only for projects on the Makah Reservation:

i. The operator shall be responsible for achieving compliance with the Makah Tribe's Water Quality Standards.

ii. The operator shall submit a Storm Water Pollution Prevention Plan to the Makah Tribe Water Quality Program and Makah Fisheries Habitat Division for review and approval at least thirty (30) days prior to beginning any discharge activities.

iii. The operator shall submit a copy of the Notice of Intent to the Makah Tribe Water Quality Program and Makah Fisheries Habitat Division at the same time it is submitted to EPA.

iv. Storm Water Pollution Prevention Plans and Notices of Intent shall be submitted to:

Makah Fisheries Water Quality and Habitat Division
PO Box 115
Neah Bay, WA 98357

d. Puyallup Tribe of Indians.
The following conditions apply only to stormwater discharges from large and small construction activities that result in a total land disturbance of equal to or greater than one acre, where those discharges enter surface waters of the Puyallup Tribe:

i. Each permittee shall be responsible for achieving compliance with the Puyallup Tribe's Water Quality Standards, including antidegradation provisions. The Puyallup Natural Resources Department will conduct an antidegradation review for permitted activities that have the potential to affect water quality. The antidegradation review will be consistent with the Tribe's Antidegradation Implementation Procedures.

ii. The permittee shall be responsible for meeting any additional permit requirements imposed by EPA necessary to comply with the Puyallup Tribe's antidegradation policies if the discharge point is located within 1 linear mile upstream of waters designated by the Tribe.

iii. Each permittee shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the Puyallup Tribal Natural Resources Department at the address listed below at the same time it is submitted to EPA.

Puyallup Tribe of Indians
3009 E. Portland Avenue
Tacoma, WA 98404
ATTN: Natural Resources Department

iv. All supporting documentation and certifications in the NOI related to coverage under the general permit for Endangered Species Act purposes shall be submitted to the Puyallup Tribal Natural Resources Department for review.

v. If EPA requires coverage under an individual or alternative permit, the permittee shall submit a copy of the permit to the Puyallup Tribal Natural Resources Department at the address listed above.

vi. The permittee shall submit all stormwater pollution prevention plans to the Puyallup Tribal Natural Resources Department for review and approval prior to beginning any activities resulting in a discharge to tribal waters.

Appendix A - Definitions and Acronyms

Definitions

"Arid Areas" means areas with an average annual rainfall of 0 to 10 inches.

"Best Management Practices" (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to waters of the United States. BMPs also include treatment requirements, operating procedures, and practice to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

"Commencement of Construction Activities" means the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction-related activities (e.g., stockpiling of fill material).

"Control Measure" as used in this permit, refers to any BMP or other method used to prevent or reduce the discharge of pollutants to waters of the United States.

"CWA" means the Clean Water Act or the Federal Water Pollution Control Act, 33 U.S.C. section 1251 et seq.

"Discharge" when used without qualification means the "discharge of a pollutant."

"Discharge of Stormwater Associated with Construction Activity" as used in this permit, refers to a discharge of pollutants in stormwater from areas where soil disturbing activities (e.g., clearing, grading, or excavation), construction materials or equipment storage or maintenance (e.g., fill piles, borrow area, concrete truck chute washdown, fueling), or other industrial stormwater directly related to the construction process (e.g., concrete or asphalt batch plants) are located.

"Eligible" means qualified for authorization to discharge stormwater under this general permit.

"Facility" or "Activity" means any "point source" or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program.

"Federal Facility" means any buildings, installations, structures, land, public works, equipment, aircraft, vessels, and other vehicles and property, owned by, or constructed or manufactured for the purpose of leasing to, the Federal government.

"Final Stabilization" means that:

1. All soil disturbing activities at the site have been completed and either of the two following criteria are met:
    a. a uniform (e.g,, evenly distributed, without large bare areas) perennial vegetative cover with a density of 70 percent of the native background

vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or

b. equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

2. When background native vegetation will cover less than 100 percent of the ground (e.g., arid areas, beaches), the 70 percent coverage criteria is adjusted as follows: if the native vegetation covers 50 percent of the ground, 70 percent of 50 percent (0.70 X 0.50 = 0.35) would require 35 percent total cover for final stabilization. On a beach with no natural vegetation, no stabilization is required.
3. In arid and semi-arid areas only, all soil disturbing activities at the site have been completed and both of the following criteria have been met:
   a. Temporary erosion control measures (e.g., degradable rolled erosion control product) are selected, designed, and installed along with an appropriate seed base to provide erosion control for at least three years without active maintenance by you,
   b. The temporary erosion control measures are selected, designed, and installed to achieve 70 percent vegetative coverage within three years.
4. For individual lots in residential construction, final stabilization means that either:
   a. The homebuilder has completed final stabilization as specified above, or
   b. The homebuilder has established temporary stabilization including perimeter controls for an individual lot prior to occupation of the home by the homeowner and informing the homeowner of the need for, and benefits of, final stabilization.
5. For construction projects on land used for agricultural purposes (e.g., pipelines across crop or range land, staging areas for highway construction, etc.), final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to ‘‘water of the United States,’’ and areas which are not being returned to their preconstruction agricultural use must meet the final stabilization criteria (1) or (2) or (3) above.

“Indian country” is defined at 40 CFR §122.2 to mean:

1. All land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation;
2. All dependent Indian communities with the borders of the United States whether within the originally or subsequently acquired territory thereof, and whether within or without the limits of a state; and
3. All Indian allotments, the Indian titles to which have not been extinguished, including rights-of-ways running through the same.

“Large Construction Activity” is defined at 40 CFR §122.26(b)(14)(x) and incorporated here by reference. A large construction activity includes clearing, grading, and excavating resulting in a land disturbance that will disturb equal to or greater than five acres of land or will disturb less than five acres of total land area but is part of a larger common plan of development or sale that will ultimately disturb equal to or greater than five acres. Large

construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site.

"Municipal Separate Storm Sewer System" or "MS4" is defined at 40 CFR §122.26(b)(8) to mean a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):

1. Owned and operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;
2. Designed or used for collecting or conveying stormwater;
3. Which is not a combined sewer; and
4. Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR §122.2.

"New Project" means the "commencement of construction activities" occurs after the effective date of this permit.

"Ongoing Project" means the "commencement of construction activities" occurs before the effective date of this permit.

"Operator" for the purpose of this permit and in the context of stormwater associated with construction activity, means any party associated with a construction project that meets either of the following two criteria:

1. The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
2. The party has day-to-day operational control of those activities at a project which are necessary to ensure compliance with a SWPPP for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions). This definition is provided to inform permittees of EPA's interpretation of how the regulatory definitions of "owner or operator" and "facility or activity" are applied to discharges of stormwater associated with construction activity.

"Owner or operator" means the owner or operator of any ''facility or activity'' subject to regulation under the NPDES program.

"Permitting Authority" means the United States Environmental Protection Agency, EPA, a Regional Administrator of the Environmental Protection Agency or an authorized representative.

"Point Source" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

"Pollutant" is defined at 40 CFR §122.2. A partial listing from this definition includes: dredged spoil, solid waste, sewage, garbage, sewage sludge, chemical wastes, biological materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial or municipal waste.

"Project Area" means:
− The areas on the construction site where stormwater discharges originate and flow toward the point of discharge into the receiving waters (including areas where excavation, site development, or other ground disturbance activities occur) and the immediate vicinity. (Example: 1. Where bald eagles nest in a tree that is on or bordering a construction site and could be disturbed by the construction activity or where grading causes stormwater to flow into a small wetland or other habitat that is on the site that contains listed species.)
− The areas where stormwater discharges flow from the construction site to the point of discharge into receiving waters. (Example: Where stormwater flows into a ditch, swale, or gully that leads to receiving waters and where listed species (such as amphibians) are found in the ditch, swale, or gully.)
− The areas where stormwater from construction activities discharge into receiving waters and the areas in the immediate vicinity of the point of discharge. (Example: Where stormwater from construction activities discharges into a stream segment that is known to harbor listed aquatic species.)
− The areas where stormwater BMPs will be constructed and operated, including any areas where stormwater flows to and from BMPs. (Example: Where a stormwater retention pond would be built.)
− The areas upstream and /or downstream from construction activities discharges into a stream segment that may be affected by the said discharges. (Example: Where sediment discharged to a receiving stream settles downstream and impacts a breeding area of a listed aquatic species.)

"Receiving water" means the "Water of the United States" as defined in 40 CFR §122.2 into which the regulated stormwater discharges.

"Runoff coefficient" means the fraction of total rainfall that will appear at the conveyance as runoff.

"Semi-Arid Areas" means areas with an average annual rainfall of 10 to 20 inches.

"Site" means the land or water area where any "facility or activity" is physically located or conducted, including adjacent land used in connection with the facility or activity.

"Small Construction Activity" is defined at 40 CFR §122.26(b)(15) and incorporated here by reference. A small construction activity includes clearing, grading, and excavating resulting in a land disturbance that will disturb equal to or greater than one (1) acre and less than five (5) acres of land or will disturb less than one (1) acre of total land area but is part of a larger common plan of development or sale that will ultimately disturb equal to or greater than one (1) acre and less than five (5) acres. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site.

"Stormwater" means stormwater runoff, snow melt runoff, and surface runoff and drainage.

"Stormwater Discharge-Related Activities" as used in this permit, include: activities that cause, contribute to, or result in stormwater point source pollutant discharges, including but not limited to: excavation, site development, grading and other surface disturbance activities; and measures to control stormwater including the siting, construction and operation of BMPs to control, reduce or prevent stormwater pollution.

"Total Maximum Daily Load" or "TMDL" means the sum of the individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background. If a receiving water has only one point source discharger, the TMDL is the sum of that point source WLA plus the LAs for any nonpoint sources of pollution and natural background sources, tributaries, or adjacent segments. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure.

"Waters of the United States" is as defined at 40 CFR §122.2.

"Wetland" means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

ACRONYMS

BMP - Best Management Practices
CGP - Construction General Permit
CFR - Code of Federal Regulations
CWA - Clean Water Act
EPA - United States Environmental Protection Agency
ESA - Endangered Species Act
FWS - United States Fish and Wildlife Service
MS4 - Municipal Separate Storm Sewer System
MSGP - Multi-Sector General Permit
NHPA - National Historic Preservation Act
NMFS - United States National Marine Fisheries Service
NOI - Notice of Intent

NOT - Notice of Termination
NPDES - National Pollutant Discharge Elimination System
POTW - Publicly Owned Treatment Works
SHPO - State Historic Preservation Officer
SWPPP - Stormwater Pollution Prevention Plan
THPO - Tribal Historic Preservation Officer
TMDL - Total Maximum Daily Load
WQS - Water Quality Standard

Appendix B - Permit Areas Eligible for Coverage

Permit coverage for stormwater discharges from construction activity occurring within the following areas is provided by legally separate and distinctly numbered permits:

1. EPA Region 1: CT, MA, ME, NH, RI, VT

US EPA, Region 01
Office of Ecosystem Protection
NPDES Stormwater Program
1 Congress St, Suite 1100 (CMU)
Boston, MA 02114-2023

The States of Connecticut, Maine, Rhode Island, and Vermont are the NPDES Permitting Authority for the majority of discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
MAR100000	Commonwealth of Massachusetts (except Indian country)
MAR10000I	Indian country within the State of Massachusetts
CTR10000I	Indian country within the State of Connecticut
NHR100000	State of New Hampshire **[coverage not yet available]**
RIR10000I	Indian country within the State of Rhode Island
VTR10000F	Federal Facilities in the State of Vermont

2. EPA Region 2: NJ, NY, PR, VI

For NJ, NY, and VI:
US EPA, Region 02
NPDES Stormwater Program
290 Broadway, 24th Floor
New York, NY 10007-1866

For PR:
US EPA, Region 02
Caribbean Environmental Protection Division
NPDES Stormwater Program
1492 Ponce de Leon Ave
Central Europa Building, Suite 417
San Juan, PR 00907-4127

The State of New York is the NPDES Permitting Authority for the majority of discharges within its state. The State of New Jersey and the Virgin Islands are the NPDES Permitting Authority for all discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
NYR10000I	Indian country within the State of New York **[coverage not yet available]**
PRR100000	The Commonwealth of Puerto Rico **[coverage not yet available]**

3. EPA Region 3: DE, DC, MD, PA, VA, WV

US EPA, Region 03
NPDES Stormwater Program
1650 Arch St
Philadelphia, PA 19103

The State of Delaware is the NPDES Permitting Authority for the majority of discharges within its state. Maryland, Pennsylvania, Virginia, and West Virginia are the NPDES Permitting Authority for all discharges within their respective states.

Permit No.	Areas of Coverage/Where EPA is Permitting Authority
DCR100000	The District of Columbia
DER10000F	Federal Facilities in the State of Delaware

4. EPA Region 4: AL, FL, GA, KY, MS, NC, SC, TN

US EPA, Region 04
Water Management Division
NPDES Stormwater Program
61 Forsyth St SW
Atlanta, GA 30303-3104

Coverage Not Available. Construction activities in Region 4 must obtain permit coverage under an alternative permit.

5. EPA Region 5: IL, IN, MI, MN, OH, WI

US EPA, Region 05
NPDES & Technical Support
NPDES Stormwater Program
77 W Jackson Blvd
(WN-16J)
Chicago, IL 60604-3507

The States of Michigan, Minnesota, and Wisconsin are the NPDES Permitting Authority for the majority of discharges within their respective states. The States of Illinois, Indiana, and Ohio are the NPDES Permitting Authorities for all discharges within their respective states.

Permit No.	Areas of coverage/where EPA is Permitting Authority
MIR10000I	Indian country within the State of Michigan **[coverage not yet available]**
MNR10000I	Indian country within the State of Minnesota **[coverage not yet available]**
WIR10000I	Indian country within the State of Wisconsin, except the Sokaogon Chippewa (Mole Lake) Community. **[coverage not yet available]**

6. EPA Region 6: AR, LA, OK, TX, NM (except see Region 9 for Navajo lands, and see Region 8 for Ute Mountain Reservation lands)

US EPA, Region 06
NPDES Stormwater Program
1445 Ross Ave, Suite 1200
Dallas, TX 75202-2733

The States of Louisiana, Oklahoma, and Texas are the NPDES Permitting Authority for the majority of discharges within their respective state. The State of Arkansas is the NPDES Permitting Authority for all discharges within its respective state.

Permit No.	Areas of coverage/where EPA is Permitting Authority
LAR10000I	Indian country within the State of Louisiana
NMR100000	The State of New Mexico, except Indian country
NMR10000I	Indian country within the State of New Mexico, except Navajo Reservation Lands that are covered under Arizona permit AZR10000I and Ute Mountain Reservation Lands that are covered under Colorado permit COR10000I. **[coverage not yet available]**
OKR10000I	Indian country within the State of Oklahoma **[coverage not yet available]**
OKR10000F	Discharges in the State of Oklahoma that are not under the authority of the Oklahoma Department of Environmental Quality, including activities associated with oil and gas exploration, drilling, operations, and pipelines (includes SIC Groups 13 and 46, and SIC codes 492 and 5171), and point source discharges associated with agricultural production, services, and silviculture (includes SIC Groups 01, 02, 07, 08, 09). **[coverage not yet available]**
TXR10000F	Discharges in the State of Texas that are not under the authority of the Texas Commission on Environmental Quality (formerly TNRCC), including activities associated with the exploration, development, or production of oil or gas or geothermal resources, including transportation of crude oil or natural gas by pipeline. **[coverage not yet available]**
TXR10000I	Indian country within the State of Texas.

7. EPA Region 7: IA, KS, MO, NE (except see Region 8 for Pine Ridge Reservation Lands)

US EPA, Region 07
NPDES Stormwater Program
901 N 5th St
Kansas City, KS 66101

The States of Iowa, Kansas, and Nebraska are the NPDES Permitting Authority for the majority of discharges within their respective states. The State of Missouri is the NPDES Permitting Authority for all discharges within its state.

Permit No.	Areas of coverage/where EPA is Permitting Authority
IAR10000I	Indian country within the State of Iowa
KSR10000I	Indian country within the State of Kansas
NER10000I	Indian country within the State of Nebraska, except Pine Ridge Reservation lands (see Region 8)

8. EPA Region 8: CO, MT, ND, SD, WY, UT (except see Region 9 for Goshute Reservation and Navajo Reservation Lands), the Ute Mountain Reservation in NM, and the Pine Ridge Reservation in NE.

US EPA, Region 08
NPDES Stormwater Program
999 18th St, Suite 300
(EPR-EP)
Denver, CO 80202-2466

The States of Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming are the NPDES Permitting Authority for the majority of discharges within their respective states.

Permit No.	Areas of coverage/where EPA is Permitting Authority
COR10000F	Federal Facilities in the State of Colorado, except those located on Indian country **[coverage not yet available]**
COR10000I	Indian country within the State of Colorado, as well as the portion of the Ute Mountain Reservation located in New Mexico **[coverage not yet available]**
MTR10000I	Indian country within the State of Montana **[coverage not yet available]**
NDR10000I	Indian country within the State of North Dakota, as well as that portion of the Standing Rock Reservation located in South Dakota (except for the portion of the lands within the former boundaries of the Lake Traverse Reservation which is covered under South Dakota permit SDR10000I listed below)

SDR10000I	Indian country within the State of South Dakota, as well as the portion of the Pine Ridge Reservation located in Nebraska and the portion of the lands within the former boundaries of the Lake Traverse Reservation located in North Dakota (except for the Standing Rock Reservation which is covered under North Dakota permit NDR10000I listed above)
UTR10000I	Indian country within the State of Utah, except Goshute and Navajo Reservation lands (see Region 9)
WYR10000I	Indian country within the State of Wyoming

9. EPA Region 9: CA, HI, NV, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, the Goshute Reservation in UT and NV, the Navajo Reservation in UT, NM, and AZ, the Duck Valley Reservation in ID, and the Fort McDermitt Reservation in OR.

US EPA, Region 09
NPDES Stormwater Program
75 Hawthorne St
San Francisco, CA 94105-3901

The States of Arizona, California and Nevada are the NPDES Permitting Authority for the majority of discharges within their respective states. The State of Hawaii is the NPDES Permitting Authority for all discharges within its state.

Permit No.	Areas of coverage/where EPA is Permitting Authority
ASR100000	The Island of American Samoa
AZR10000I	Indian country within the State of Arizona, as well as Navajo Reservation lands in New Mexico and Utah
CAR10000I	Indian country within the State of California
GUR100000	The Island of Guam
JAR100000	Johnston Atoll
MWR100000	Midway Island and Wake Island
MPR100000	Commonwealth of the Northern Mariana Islands
NVR10000I	Indian country within the State of Nevada, as well as the Duck Valley Reservation in Idaho, the Fort McDermitt Reservation in Oregon and the Goshute Reservation in Utah

10. EPA Region 10: AK, WA, ID (except see Region 9 for Duck Valley Reservation Lands), and OR (except see Region 9 for Fort McDermitt Reservation).

US EPA, Region 10
NPDES Stormwater Program
1200 6th Ave (OW-130)
Seattle, WA 98101-1128
Phone: (206) 553-6650

The States of Oregon and Washington are the NPDES Permitting Authority for the majority of discharges within their respective states.

Permit No.	Areas of coverage/where EPA is Permitting Authority
AKR100000	The State of Alaska, except Indian country
AKR10000I	Indian country within the state of Alaska
IDR100000	The State of Idaho, except Indian country
IDR10000I	Indian country within the State of Idaho, except Duck Valley Reservation lands (see Region 9)
ORR10000I	Indian country within the State of Oregon, except Fort McDermitt Reservation lands (see Region 9)
WAR10000F	Federal Facilities in the State of Washington, except those located on Indian country
WAR10000I	Indian country within the State of Washington

Appendix C - Endangered Species Act Review Procedures

You must meet at least one of the six criteria in Part 1.3.C.6 to be eligible for coverage under this permit. You must follow the procedures in this Appendix to assess the potential effects of stormwater discharges and stormwater discharge-related activities on listed species and their critical habitat. When evaluating these potential effects, operators must evaluate the entire project area.

For purposes of this Appendix, the term "project area" is inclusive of the term "Action Area." Action area is defined in 50 CFR §402.02 as all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action.

This includes areas beyond the footprint of the construction area that may be affected by stormwater discharges and stormwater discharge related activities. "Project area" is defined in Appendix A.

(Operators who are eligible and able to certify eligibility under Criterion B, C, D, or F of Part 1.3.C.6 because of a previously issued ESA section 10 permit, a previously completed ESA section 7 consultation, or because the operator's activities were already addressed in another operator's certification of eligibility may proceed directly to Step Four.)

Step One: Determine if Listed Threatened or Endangered Species are Present On or Near Your Project Area

You must determine, to the best of your knowledge, whether listed species are located on or near your project area. To make this determination, you should:

- Determine if listed species are in your county or township. The local offices of the U.S. Fish and Wildlife Service (FWS), National Marine Fisheries Service (NMFS), and State or Tribal Heritage Centers often maintain lists of federally listed endangered or threatened species on their internet sites. Visit http://www.epa.gov/npdes/stormwater/cgp to find the appropriate site for your state or check with your local office. In most cases, these lists allow you to determine if there are listed species in your county or township.
- If there are listed species in your county or township, check to see if critical habitat has been designated and if that area overlaps or is near your project area.
- Contact your local FWS, NMFS, or State or Tribal Heritage Center to determine if the listed species could be found on or near your project area and if any critical habitat areas have been designated that overlap or are near your project area. Critical habitat areas maybe designated independently from the listed species for your county, so even if there are no listed species in your county or township, you must still contact one of the agencies mentioned above to determine if there are any critical habitat areas on or near your project area.

You can also find critical habitat designations and associated requirements at 50 CFR Parts 17 and 226. http://www.access.gpo.gov.

- If there are no listed species in your county or township, no critical habitat areas on or near your project area, or if your local FWS, NMFS, or State or Tribal Heritage Center indicates that listed species are not a concern in your part of the county or township, you may check box A on the Notice of Intent Form.
- If there are listed species and if your local FWS, NMFS, or State or Tribal Heritage Center indicates that these species could exist on or near your project area, you will need to do one or more of the following:
  - Conduct visual inspections: This method may be particularly suitable for construction sites that are smaller in size or located in non-natural settings such as highly urbanized areas or industrial parks where there is little or no natural habitat, or for construction activities that discharge directly into municipal stormwater collection systems.
  - Conduct a formal biological survey. In some cases, particularly for larger construction sites with extensive stormwater discharges, biological surveys may be an appropriate way to assess whether species are located on or near the project area and whether there are likely adverse effects to such species. Biological surveys are frequently performed by environmental consulting firms. A biological survey may in some cases be useful in conjunction with Steps Two, Three, or Four of these instructions.
  - Conduct an environmental assessment under the National Environmental Policy Act (NEPA). Such reviews may indicate if listed species are in proximity to the project area. Coverage under the CGP does not trigger such a review because the CGP does not regulate new sources (that is, dischargers subject to New Source Performance Standards under section 306 of the Clean Water Act), and is thus statutorily exempted from NEPA. See CWA section 511(c). However, some construction activities might require review under NEPA for other reasons such as federal funding or other federal involvement in the project.
  - If listed threatened or endangered species or critical habitat are present in the project area, you must look at impacts to species and/or habitat when following Steps Two through Four. Note that many but not all measures imposed to protect listed species under these steps will also protect critical habitat. Thus, meeting the eligibility requirements of this CGP may require measures to protect critical habitat that are separate from those to protect listed species.

Step Two: Determine if the Construction Activity's Stormwater Discharges or Stormwater Discharge- Related Activities Are Likely to Adversely Affect Listed Threatened or Endangered Species or Designated Critical Habitat

To receive CGP coverage, you must assess whether your stormwater discharges or stormwater discharge related activities is likely to adversely affect listed threatened or endangered species or designated critical habitat that are present on or near your project area.

Potential adverse effects from stormwater discharges and stormwater discharge-related activities include:

- *Hydrological.* Stormwater discharges may cause siltation, sedimentation or induce other changes in receiving waters such as temperature, salinity or pH. These effects will vary with the amount of stormwater discharged and the volume and condition of the receiving water. Where a stormwater discharge constitutes a minute portion of the total volume of the receiving water, adverse hydrological effects are less likely. Construction activity itself may also alter drainage patterns on a site where construction occurs that can impact listed species or critical habitat.
- *Habitat.* Excavation, site development, grading, and other surface disturbance activities from construction activities, including the installation or placement of stormwater BMPs, may adversely affect listed species or their habitat. Stormwater may drain or inundate listed species habitat.
- *Toxicity.* In some cases, pollutants in stormwater may have toxic effects on listed species.

The scope of effects to consider will vary with each site. If you are having difficulty determining whether your project is likely to adversely affect listed species or critical habitat, or one of the Services has already raised concerns to you, you must contact the appropriate office of the FWS, NMFS or Natural Heritage Center for assistance. If adverse effects are not likely, then you may check box E on the NOI form and apply for coverage under the CGP. If the discharge may adversely effect listed species or critical habitat, you must follow Step Three.

Step Three: Determine if Measures Can Be Implemented to Avoid Adverse Effects
If you make a preliminary determination that adverse effects are likely to occur, you can still receive coverage under Criterion E of Part 1.3.C.6 of the CGP if appropriate measures are undertaken to avoid or eliminate the likelihood of adverse effects prior to applying for CGP coverage. These measures may involve relatively simple changes to construction activities such as re-routing a stormwater discharge to bypass an area where species are located, relocating BMPs, or by changing the "footprint" of the construction activity. You should contact the FWS and/or NMFS to see what appropriate measures might be suitable to avoid or eliminate the likelihood of adverse impacts to listed species and/or critical habitat. (See 50 CFR §402.13(b)). This can entail the initiation of informal consultation with the FWS and/or NMFS (described in more detail in Step Four).

If you adopt measures to avoid or eliminate adverse affects, you must continue to abide by those measures for the duration of the construction project and coverage under the CGP. These measures must be described in the SWPPP and are enforceable CGP conditions and/or conditions for meeting the eligibility criteria in Part 1.3. If appropriate measures to avoid the likelihood of adverse effects are not available, you must follow Step Four.

Step Four: Determine if the Eligibility Requirements of Criterion B, C, D, or F of Part 1.3.C.6 Can Be Met
Where adverse effects are likely, you must contact the FWS and/or NMFS. You may still be eligible for CGP coverage if any likely adverse effects can be addressed through meeting Criterion B, C, D, or F of Part 1.3.C.6 of the CGP. These criteria are as follows:

1. *An ESA Section 7 Consultation Is Performed for Your Activity (See Criterion B or C of Part 1.3.C.6 of the CGP).*

Formal or informal ESA section 7 consultation is performed with the FWS and/or NMFS that addresses the effects of your stormwater discharges and stormwater discharge-related activities on federally-listed and threatened species and designated critical habitat. FWS and/or NMFS may request that consultation take place if any actions are identified that may affect listed species or critical habitat. In order to be eligible for coverage under this permit, consultation must result in a "no jeopardy opinion" or a written concurrence by the Service(s) on a finding that your stormwater discharge(s) and stormwater discharge-related activities are not likely to adversely affect listed species or critical habitat (For more information on consultation, see 50 CFR §402). If you receive a "jeopardy opinion," you may continue to work with the FWS and/or NMFS and your permitting authority to modify your project so that it will not jeopardize listed species or designated critical habitat.

Most consultations are accomplished through informal consultation. By the terms of this CGP, EPA has automatically designated operators as non-federal representatives for the purpose of conducting informal consultations. See Part 1.3.C.6 and 50 CFR §402.08 and §402.13. When conducting informal ESA section 7 consultation as a non-federal representative, you must follow the procedures found in 50 CFR Part 402 of the ESA regulations. You must notify FWS and/or NMFS of your intention and agreement to conduct consultation as a non-federal representative.

Consultation may occur in the context of another federal action at the construction site (e.g., where ESA section 7 consultation was performed for issuance of a wetlands dredge and fill permit for the project or where a NEPA review is performed for the project that incorporates a section 7 consultation). Any terms and conditions developed through consultations to protect listed species and critical habitat must be incorporated into the SWPPP. As noted above, operators may, if they wish, initiate consultation with the Services at Step Four.

Whether ESA section 7 consultation must be performed with either the FWS, NMFS or both Services depends on the listed species that may be affected by the operator's activity. In general, NMFS has jurisdiction over marine, estuaries, and anadromous species. Operators should also be aware that while formal section 7 consultation provides protection from incidental takings liability, informal consultation does not.

2. *An Incidental Taking Permit Under Section 10 of the ESA is Issued for the Operators Activity (See Criterion D of Part 1.3.C.6 of the CGP).*

Your construction activities are authorized through the issuance of a permit under section 10 of the ESA and that authorization addresses the effects of your stormwater discharge(s) and stormwater discharge-related activities on federally-listed species and designated critical habitat. You must follow FWS and/or NMFS procedures when applying for an ESA Section 10 permit (see 50 CFR §17.22(b)(1) for FWS and §222.22

for NMFS). Application instructions for section 10 permits for FWS and NMFS can be obtained by accessing the FWS and NMFS websites (http://www.fws.gov and http://www.nmfs.noaa.gov) or by contacting the appropriate FWS and NMFS regional office.

3. *You are Covered Under the Eligibility Certification of Another Operator for the Project Area (See Criterion F of Part 1.3.C.6 of the CGP).*

Your stormwater discharges and stormwater discharge-related activities were already addressed in another operator's certification of eligibility under Criteria A through E of Part 1.3.C.6 which also included your project area. For example, a general contractor or developer may have completed and filed an NOI for the entire project area with the necessary Endangered Species Act certifications (criteria A-E), subcontractors may then rely upon that certification and must comply with any conditions resulting from that process. By certifying eligibility under Criterion F of Part 1.3.C.6, you agree to comply with any measures or controls upon which the other operator's certification under Criterion B, C, or D of Part 1.3.C.6 was based. Certification under Criterion F of Part 1.3.C.6 is discussed in more detail in the Fact Sheet that accompanies this permit.

You must comply with any terms and conditions imposed under the eligibility requirements of Criterion A through F to ensure that your stormwater discharges and stormwater discharge-related activities are protective of listed species and/or critical habitat. Such terms and conditions must be incorporated in the project's SWPPP. If the eligibility requirements of Part 1.3.C.6 cannot be met, then you are not eligible for coverage under the CGP. In these instances, you may consider applying to EPA for an individual permit.

Appendix D - Small Construction Waivers and Instructions

These waivers are only available to stormwater discharges associated with small construction activities (i.e., 1-5 acres). As the operator of a small construction activity, you may be able to qualify for a waiver in lieu of needing to obtain coverage under this general permit based on: (A) a low rainfall erosivity factor, (B) a TMDL analysis, or (C) an equivalent analysis that determines allocations for small construction sites are not needed. Each operator, otherwise needing permit coverage, must notify EPA of its intention for a waiver. It is the responsibility of those individuals wishing to obtain a waiver from coverage under this general permit to submit a complete and accurate waiver certification as described below. Where the operator changes or another is added during the construction project, the new operator must also submit a waiver certification to be waived.

A. Rainfall Erosivity Waiver

Under this scenario the small construction project's rainfall erosivity factor calculation ("R" in the Revised Universal Soil Loss Equation) is less than 5 during the period of construction activity. The operator must certify to the EPA that construction activity will occur only when the rainfall erosivity factor is less than 5. The period of construction activity begins at initial earth disturbance and ends with final stabilization. Where vegetation will be used for final stabilization, the date of installation of a stabilization practice that will provide interim non-vegetative stabilization can be used for the end of the construction period, provided the operator commits (as a condition of waiver eligibility) to periodically inspect and properly maintain the area until the criteria for final stabilization as defined in the construction general permit have been met. If use of this interim stabilization eligibility condition was relied on to qualify for the waiver, signature on the waiver with its certification statement constitutes acceptance of and commitment to complete the final stabilization process. The operator must submit a waiver certification to EPA prior to commencing construction activities.

Note: The rainfall erosivity factor "R" is determined in accordance with Chapter 2 of Agriculture Handbook Number 703, Predicting Soil Erosion by Water: A Guide to Conservation Planning With the Revised Universal Soil Loss Equation (RUSLE), pages 21–64, dated January 1997; United States Department of Agriculture (USDA), Agricultural Research Service.

EPA has developed an online rainfall erosivity calculator to help small construction sites determine potential eligibility for the rainfall erosivity waiver.You can access the calculator from EPA's website at: www.epa.gov/npdes/stormwater/lew. The R factor can easily be calculated by using the construction site latitude/longitude or address and estimated start and end dates of construction. This calculator may also be useful in determining the time periods during which construction activity could be waived from permit coverage. You may find that moving your construction activity by a few weeks or expediting site stabilization will allow you to qualify for the waiver. Use this online calculator or the Construction Rainfall Erosivity Waiver Fact Sheet

(www.epa.gov/npdes/pubs/fact3-1.pdf) to assist in determining the R Factor for your small construction site.

If you are the operator of the construction activity and eligible for a waiver based on low erosivity potential, you may submit a rainfall erosivity waiver electronically via EPA's eNOI system (www.epa.gov/npdes/eNOI) or provide the following information on the waiver certification form in order to be waived from permitting requirements:

1. Name, address and telephone number of the construction site operators;
2. Name (or other identifier), address, county or similar governmental subdivision, and latitude/longitude of the construction project or site;
3. Estimated construction start and completion (i.e., final stabilization) dates, and total acreage (to the nearest quarter acre) to be disturbed;
4. The rainfall erosivity factor calculation that applies to the active construction phase at your project site; and
5. A statement, signed and dated by an authorized representative as provided in Appendix G, Subsection 11, that certifies that the construction activity will take place during a period when the value of the rainfall erosivity factor is less than five.

You can access the waiver certification form from EPA's website at: (http://www.epa.gov/npdes/pubs/construction_waiver_form.pdf). Paper copies of the form must be sent to one of the addresses listed in Part D of this section.

Note: If the R factor is 5 or greater, you cannot apply for the rainfall erosivity waiver, and must apply for permit coverage as per Subpart 2.1 of the construction general permit, unless you qualify for the Water Quality Waiver as described below.

If your small construction project continues beyond the projected completion date given on the waiver certification, you must recalculate the rainfall erosivity factor for the new project duration. If the R factor is below five (5), you must update all applicable information on the waiver certification and retain a copy of the revised waiver as part of the site SWPPP. The new waiver certification must be submitted prior to the projected completion date listed on the original waiver form to assure your exemption from permitting requirements is uninterrupted. If the new R factor is five (5) or above, you must submit an NOI as per Part 2.

B. TMDL Waiver

This waiver is available if EPA has established or approved a TMDL that addresses the pollutant(s) of concern and has determined that controls on stormwater discharges from small construction activity are not needed to protect water quality. The pollutant(s) of concern include sediment (such as total suspended solids, turbidity or siltation) and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the construction activity. Information on TMDLs that have been established or approved by EPA is available from EPA online at http://www.epa.gov/owow/tmdl/ and from state and tribal water quality agencies.

If you are the operator of the construction activity and eligible for a waiver based on compliance with an EPA established or approved TMDL, you must provide the following information on the Waiver Certification form in order to be waived from permitting requirements:

1. Name, address and telephone number of the construction site operator(s);
2. Name (or other identifier), address, county or similar governmental subdivision, and latitude/longitude of the construction project or site;
3. Estimated construction start and completion (i.e., final stabilization) dates, and total acreage (to the nearest quarter acre) to be disturbed;
4. The name of the water body(s) that would be receiving stormwater discharges from your construction project;
5. The name and approval date of the TMDL;
6. A statement, signed and dated by an authorized representative as provided in Appendix G, Subsection 11, that certifies that the construction activity will take place and that the stormwater discharges will occur, within the drainage area addressed by the TMDL.

C. Equivalent Analysis Waiver

This waiver is available for non-impaired waters only. The operator can develop an equivalent analysis that determines allocations for his small construction site for the pollutant(s) of concern or determines that such allocations are not needed to protect water quality. This waiver requires a small construction operator to develop an equivalent analysis based on existing in-stream concentrations, expected growth in pollutant concentrations from all sources, and a margin of safety.

If you are a construction operator who wants to use this waiver, you must develop your equivalent analysis and provide the following information to be waived from permitting requirements:

1. Name, address and telephone number of the construction site operator(s);
2. Name (or other identifier), address, county or similar governmental subdivision, and latitude/longitude of the construction project or site;
3. Estimated construction start and completion (i.e., final stabilization) dates, and total acreage (to the nearest quarter acre) to be disturbed;
4. The name of the water bodies that would be receiving stormwater discharges from your construction project;
5. Your equivalent analysis;
6. A statement, signed and dated by an authorized representative as provided in Appendix G, Subsection 11, that certifies that the construction activity will take place and that the stormwater discharges will occur, within the drainage area addressed by the equivalent analysis.

D. Waiver Deadlines and Submissions

1. Waiver certifications must be submitted prior to commencement of construction activities.
2. If you submit a TMDL or equivalent analysis waiver request, you are not waived until EPA approves your request. As such, you may not commence construction activities until receipt of approval from EPA.
3. Late Notifications: Operators are not prohibited from submitting waiver certifications after initiating clearing, grading, excavation activities, or other construction activities. The Agency reserves the right to take enforcement for any unpermitted discharges that occur between the time construction commenced and waiver authorization is granted.

Submittal of a waiver certification is an optional alternative to obtaining permit coverage for discharges of stormwater associated with small construction activity, provided you qualify for the waiver. Any discharge of stormwater associated with small construction activity not covered by either a permit or a waiver may be considered an unpermitted discharge under the Clean Water Act. As mentioned above, EPA reserves the right to take enforcement for any unpermitted discharges that occur between the time construction commenced and either discharge authorization is granted or a complete and accurate waiver certification is submitted. EPA may notify any operator covered by a waiver that they must apply for a permit. EPA may notify any operator who has been in non-compliance with a waiver that they may no longer use the waiver for future projects. Any member of the public may petition EPA to take action under this provision by submitting written notice along with supporting justification.

Complete and accurate Rainfall Erosivity waiver certifications not otherwise submitted electronically via EPA's eNOI system (www.epa.gov/npdes/eNOI) must be sent to one of the following addresses:

Regular U.S. Mail Delivery
EPA Stormwater Notice Processing Center
Mail Code 4203M
U.S. EPA
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Overnight/Express Mail Delivery
EPA Stormwater Notice Processing Center
Room 7420
U.S. EPA
1201Constitution Avenue, NW
Washington, DC 20004

Complete and accurate TMDL or equivalent analysis waiver requests must be sent to the applicable EPA Region office specified in Appendix B.

Appendix E - Notice of Intent Form and Instructions

From the effective date of this permit, operators are to use the Notice of Intent Form contained in this Appendix to obtain permit coverage.

This Form Replaces Form 3510-9 (8-98)
Refer to the Following Pages for Instructions

Form Approved OMB Nos. 2040-0188 and 2040-0211

NPDES FORM

EPA

United States Environmental Protection Agency
Washington, DC 20460

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity Under an NPDES General Permit

Submission of this Notice of Intent (NOI) constitutes notice that the party identified in Section II of this form requests authorization to discharge pursuant to the NPDES Construction General Permit (CGP) permit number identified in Section I of this form. Submission of this NOI also constitutes notice that the party identified in Section II of this form meets the eligibility requirements of the CGP for the project identified in Section III of this form. Permit coverage is required prior to commencement of construction activity until you are eligible to terminate coverage as detailed in the CGP. To obtain authorization, you must submit a complete and accurate NOI form. Refer to the instructions at the end of this form.

I. Permit Number

II. Operator Information

Name:

IRS Employer Identification Number (EIN): –

Mailing Address:

Street:

City: State: Zip Code: -

Phone: - - Fax (optional): - -

E-mail:

III. Project/Site Information

Project/Site Name:

Project Street/Location:

City: State: Zip Code: -

County or similar government subdivision:

Latitude/Longitude (Use one of three possible formats, and specify method)

Latitude
1. __ __° __ __′ __ __″ N (degrees, minutes, seconds)
2. __ __° __ __. __ __′ N (degrees, minutes, decimal)
3. __ __. __ __ __ __° N (degrees decimal)

Longitude
1. __ __ __° __ __′ __ __″ W (degrees, minutes, seconds)
2. __ __ __° __ __. __ __′ W (degrees, minutes, decimal)
3. __ __ __. __ __ __ __° W (degrees decimal)

Method: ☐ U.S.G.S. topographic map ☐ EPA web site ☐ GPS ☐ Other:

If you used a U.S.G.S. topographic map, what was the scale? _____

Project located in Indian Country? ☐ YES ☐ NO

If yes, name of reservation, or if not part of a reservation, put "Not Applicable:" _____

Estimated Project Start Date: / / (Month Day Year)

Estimated Project Completion Date: / / (Month Day Year)

Estimated Area to be Disturbed (to the nearest quarter acre): .

IV. SWPPP Information

Has the SWPPP been prepared in advance of filing this NOI? ☐ YES ☐ NO

Location of SWPP for Viewing: ☐ Address in Section II ☐ Address in Section III ☐ Other
If other:

SWPPP Street:

City: State: Zip Code: -

SWPPP Contact Information (if different than that in Section II):

Name:

Phone: - - Fax (optional): - -

E-mail:

V. Discharge Information

Identify the name(s) of waterbodies to which you discharge. _____

_____

Is this discharge consistent with the assumptions and requirements of applicable EPA approved or established TMDL(s)? ☐ YES ☐ NO

VI. Endangered Species Protection

Under which criterion of the permit have you satisfied your ESA eligibility obligations?

☐ A ☐ B ☐ C ☐ D ☐ E ☐ F

If you select criterion F, provide permit tracking number of operator under which you are certifying eligibility:

VII. Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name:

Title:

Signature: _____ Date:

NOI Preparer (Complete if NOI was prepared by someone other than the certifier)

Prepared by:

Organization:

Phone: - - Ext. E-mail:_____

Instructions for Completing EPA Form 3510-9

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity Under an NPDES General Permit

NPDES Form Date This Form Replaces Form 3510-9 (8/98) Form Approved OMB Nos. 2040-0188 and 2040-0211

Who Must File an NOI Form
Under the provisions of the Clean Water Act, as amended (33 U.S.C. 1251 et. seq.; the Act), federal law prohibits storm water discharges from certain construction activities to waters of the U.S. unless that discharge is covered under a National Pollutant Discharge Elimination System (NPDES) Permit. Operator(s) of construction sites where one or more acres are disturbed, smaller sites that are part of a larger common plan of development or sale where there is a cumulative disturbance of at least one acre, or any other site specifically designated by the Director, must submit an NOI to obtain coverage under an NPDES general permit. Each person, firm, public organization, or any other entity that meets either of the following criteria must file this form: (1) they have operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or (2) they have day-to-day operational control of those activities at the project necessary to ensure compliance with SWPPP requirements or other permit conditions. If you have questions about whether you need an NPDES storm water permit, or if you need information to determine whether EPA or your state agency is the permitting authority, refer to *www.epa.gov/npdes/stormwater/cgp* or telephone the Storm Water Notice Processing Center at (866) 352-7755.

Where to File NOI Form
See the applicable CGP for information on where to send your completed NOI form.

Completing the Form
Obtain and read a copy of the appropriate EPA Storm Water Construction General Permit for your area. To complete this form, type or print uppercase letters, in the appropriate areas only. Please place each character between the marks (abbreviate if necessary to stay within the number of characters allowed for each item). Use one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions on this form, refer to *www.epa.gov/npdes/stormwater/cgp* or telephone the Storm Water Notice Processing Center at (866) 352-7755. Please submit original document with signature in ink . do not send a photocopied signature.

Section I. Permit Number
Provide the number of the permit under which you are applying for coverage (see Appendix B of the general permit for the list of eligible permit numbers).

Section II. Operator Information
Provide the legal name of the person, firm, public organization, or any other entity that operates the project described in this application. An operator of a project is a legal entity that controls at least a portion of site operations and is not necessarily the site manager. Provide the employer identification number (EIN from the Internal Revenue Service; IRS), also commonly referred to as your taxpayer ID. If the applicant does not have an EIN enter “NA” in the space provided. Also provide the operator’s mailing address, telephone number, fax number (optional) and e-mail address (to be notified via e-mail of NOI approval when available). Correspondence for the NOI will be sent to this address.

Section III. Project/Site Information
Enter the official or legal name and complete street address, including city, state, zip code, and county or similar government subdivision of the project or site. If the project or site lacks a street address, indicate the general location of the site (e.g., Intersection of State Highways 61 and 34). Complete site information must be provided for permit coverage to be granted.

The applicant must also provide the latitude and longitude of the facility either in degrees, minutes, seconds; degrees, minutes, decimal; or decimal format. The latitude and longitude of your facility can be determined in several different ways, including through the use of global positioning system (GPS) receivers, U.S. Geological Survey (U.S.G.S.) topographic or quadrangle maps, and EPA’s web-based siting tools, among others. Refer to *www.epa.gov/npdes/stormwater/cgp* for further guidance on the use of these methodologies. For consistency, EPA requests that measurements be taken from the approximate center of the construction site. Applicants must specify which method they used to determine latitude and longitude. If a U.S.G.S. topographic map is used, applicants are required to specify the scale of the map used.

Indicate whether the project is in Indian country, and if so, provide the name of the Reservation. If the project is in Indian Country Lands that are not part of a Reservation, indicate “not applicable” in the space provided.

Enter the estimated construction start and completion dates using four digits for the year (i.e., 05/27/1998). Enter the estimated area to be disturbed including but not limited to: grubbing, excavation, grading, and utilities and infrastructure installation. Indicate to the nearest quarter acre. Note: 1 acre = 43,560 sq. ft.

Section IV. SWPPP Information
Indicate whether or not the SWPPP was prepared in advance of filing the NOI form. Check the appropriate box for the location where the SWPPP may be viewed. Provide the name, fax number (optional), and e-mail address of the contact person if different than that listed in Section II of the NOI form.

Section V. Discharge Information
Enter the name(s) of receiving waterbodies to which the project’s storm water will discharge. These should be the first bodies of water that the discharge will reach. (Note: If you discharge to more than one waterbody, please indicate all such waters in the space provided and attach a separate sheet if necessary.) For example, if the discharge leaves your

site and travels through a roadside swale or a storm sewer and then enters a stream that flows to a river, the stream would be the receiving waterbody. Waters of the U.S. include lakes, streams, creeks, rivers, wetlands, impoundments, estuaries, bays, oceans, and other surface bodies of water within the confines of the U.S. and U.S. coastal waters. Waters of the U.S. do not include man-made structures created solely for the purpose of wastewater treatment. U.S. Geological Survey topographical maps may be used to make this determination. If the map does not provide a name, use a format such as "unnamed tributary to Cross Creek". If you discharge into a municipal separate storm sewer system (MS4), you must identify the waterbody into which that portion of the storm sewer discharges. That information should be readily available from the operator of the MS4.

Indicate whether your storm water discharges from construction activities will be consistent with the assumptions and requirements of applicable EPA approved or established TMDL(s). To answer this question, refer to *www.epa.gov/npdes/stormwater/cgp* for state- and regional-specific TMDL information related to the construction general permit. You may also have to contact your EPA regional office or state agency. If there are no applicable TMDLs or no related requirements, please check the "yes" box in the NOI form.

Section VI. Endangered Species Information

Indicate for which criterion (i.e., A, B, C, D, E, or F) of the permit the applicant is eligible with regard to protection of federally listed endangered and threatened species, and designated critical habitat. See Part 1.3.C.6 and Appendix C of the permit. If you select criterion F, provide the permit tracking number of the operator under which you are certifying eligibility. The permit tracking number is the number assigned to the operator by the Storm Water Notice Processing Center after EPA acceptance of a complete NOI.

Section VII. Certification Information

All applications, including NOIs, must be signed as follows: *For a corporation:* By a responsible corporate officer. For the purpose of this Section, a responsible corporate officer means:

(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA). Include the name and title of the person signing the form and the date of signing. An unsigned or undated NOI form will not be considered eligible for permit coverage.

If the NOI was prepared by someone other than the certifier (for example, if the NOI was prepared by the facility SWPPP contact or a consultant for the certifier's signature), include the name, organization, phone number and email address of the NOI preparer.

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 3.7 hours. This estimate includes time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form, including any suggestions which may increase or reduce this burden to: Chief, Information Policy Branch 2136, U.S. Environmental Protection, Agency, 1200 Pennsylvania Avenue, NW, Washington, D.C. 20460. Include the OMB control number on any correspondence. Do not send the completed form to this address. **Visit this website for mailing instructions:** *www.epa.gov/npdes/stormwater/mail*.

Appendix F - Notice of Termination Form and Instructions

From the effective date of this permit, operators are to use the Notice of Termination Form contained in this Appendix to terminate permit coverage.

This Form Replaces Form 3517-7 (8-98)
Refer to the Following Page for Instructions

Form Approved OMB Nos. 2040-0086 and 2040-0211

NPDES Form

United States Environmental Protection Agency
Washington, DC 20460

Notice of Termination (NOT) of Coverage Under an NPDES General Permit for Storm Water Discharges Associated with Construction Activity

Submission of this Notice of Termination constitutes notice that the party identified in Section II of this form is no longer authorized to discharge storm water associated with construction activity under the NPDES program from the site identified in Section III of this form. All necessary information must be included on this form. Refer to the instructions at the end of this form.

I. Permit Information

NPDES Storm Water General Permit Tracking Number: _____

Reason for Termination (Check only one):

- ☐ Final stabilization has been achieved on all portions of the site for which you are responsible.
- ☐ Another operator has assumed control, according to Appendix G, Section 11.C of the CGP, over all areas of the site that have not been finally stabilized.
- ☐ Coverage under an alternative NPDES permit has been obtained.
- ☐ For residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

II. Operator Information

Name: _____

IRS Employer Identification Number (EIN): ___ - _____

Mailing Address:

Street: _____

City: _____ State: ___ Zip Code: _____ - ____

Phone: ___ - ___ - _____ Fax (optional): ___ - ___ - _____

E-mail (optional): _____

III. Project/Site Information

Project/Site Name: _____

Project Street/Location: _____

City: _____ State: ___ Zip Code: _____ - ____

County or similar government subdivision: _____

IV. Certification Information

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name: _____

Print Title: _____

Signature: _____

Date: _____

Instructions for Completing EPA Form 3510-13

Notice of Termination (NOT) of Coverage Under an NPDES General Permit for Storm Water Discharges Associated with Construction Activity

NPDES Form This Form Replaces Form 3517-7 (8-98) Form Approved OMB Nos. 2040-0086 and 2040-0211

Who May File an NOT Form

Permittees who are presently covered under the EPA-issued National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity may submit an NOT form when final stabilization has been achieved on all portions of the site for which you are responsible; another operator has assumed control in accordance with Appendix G, Section 11.C of the General Permit over all areas of the site that have not been finally stabilized; coverage under an alternative NPDES permit has been obtained; or for residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

"Final stabilization" means that all soil disturbing activities at the site have been completed and that a uniform perennial vegetative cover with a density of at least 70% of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed. See "final stabilization" definition in Appendix A of the Construction General Permit for further guidance where background native vegetation covers less than 100 percent of the ground, in arid or semi-arid areas, for individual lots in residential construction, and for construction projects on land used for agricultural purposes.

Completing the Form

Type or print, using uppercase letters, in the appropriate areas only. Please place each character between the marks. Abbreviate if necessary to stay within the number of characters allowed for each item. Use only one space for breaks between words, but not for punctuation marks unless they are needed to clarify your response. If you have any questions about this form, refer to *www.epa.gov/npdes/stormwater/cgp* or telephone the Storm Water Notice Processing Center at (866) 352-7755. Please submit original document with signature in ink - do not send a photocopied signature.

Section I. Permit Number

Enter the existing NPDES Storm Water General Permit Tracking Number assigned to the project by EPA's Storm Water Notice Processing Center. If you do not know the permit tracking number, refer to *www.epa.gov/npdes/stormwater/cgp* or contact the Storm Water Notice Processing Center at (866) 352-7755.

Indicate your reason for submitting this Notice of Termination by checking the appropriate box. Check only one:

Final stabilization has been achieved on all portions of the site for which you are responsible.

Another operator has assumed control according to Appendix G, Section 11.C over all areas of the site that have not been finally stabilized.

Coverage under an alternative NPDES permit has been obtained.

For residential construction only, if temporary stabilization has been completed and the residence has been transferred to the homeowner.

Section II. Operator Information

Provide the legal name of the person, firm, public organization, or any other entity that operates the project described in this application and is covered by the permit tracking number identified in Section I. The operator of the project is the legal entity that controls the site operation, rather than the site manager. Provide the employer identification number (EIN from the Internal Revenue Service; IRS). If the applicant does not have an EIN enter "NA" in the space provided. Enter the complete mailing address and telephone number of the operator. *Optional:* enter the fax number and e-mail address of the operator.

Section III. Project/Site Information

Enter the official or legal name and complete street address, including city, state, zip code, and county or similar government subdivision of the project or site. If the project or site lacks a street address, indicate the general location of the site (e.g., Intersection of State Highways 61 and 34). Complete site information must be provided for termination of permit coverage to be valid.

Section IV. Certification Information

All applications, including NOIs, must be signed as follows:

For a corporation: By a responsible corporate officer. For the purpose of this Part, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or

For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

Include the name and title of the person signing the form and the date of signing. An unsigned or undated NOT form will not be considered valid termination of permit coverage.

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 0.5 hours per notice, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding the burden estimate, any other aspect of the collection of information, or suggestions for improving this form including any suggestions which may increase or reduce this burden to: Chief, Information Policy Branch, 2136, U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460. Include the OMB number on any correspondence. Do not send the completed form to this address. **Visit this website for mailing instructions:** http://cfpub.epa.gov/npdes/stormwater/application_coverage.cfm#mail

Appendix G - Standard Permit Conditions

STANDARD PERMIT CONDITIONS

1. Duty To Comply

You must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

A. You must comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

B. The Clean Water Act provides that any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. §2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. §3701 note) (currently $27,500 per day for each violation).

   The Clean Water Act provides that any person who negligently violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than 2 years, or both. Any person who knowingly violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both. Any person who knowingly violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

C. Any person may be assessed an administrative penalty by the Administrator for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Pursuant to 40 CFR Part 19 and the Act, administrative penalties for Class I violations are not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. §2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. §3701 note) (currently $11,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $27,500). Pursuant to 40 CFR Part 19 and the Act, penalties for Class II violations are not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act and the Federal Civil Penalties Inflation Adjustment Act (28 U.S.C. §2461 note) as amended by the Debt Collection Improvement Act (31 U.S.C. §3701 note) (currently $11,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $137,500).

2. Duty to Reapply

If you wish to continue an activity regulated by this permit after the expiration date of this permit, you must apply for and obtain a new permit.

3. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for you in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. Duty to Mitigate

You must take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

5. Proper Operation and Maintenance

You must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by you to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by you only when the operation is necessary to achieve compliance with the conditions of this permit.

6. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. Your filing of a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

7. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privileges.

8. Duty to Provide Information

You must furnish to EPA, within a reasonable time, any information which EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. You must also furnish to EPA upon request, copies of records required to be kept by this permit.

9. Inspection and Entry

You must allow EPA, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

A. Enter upon your premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
B. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
C. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
D. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

10. Monitoring and Records

A. Samples and measurements taken for the purpose of monitoring must be representative of the monitored activity.
B. You must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of EPA at any time.
C. Records of monitoring information must include:
    1. The date, exact place, and time of sampling or measurements;
    2. The individual(s) who performed the sampling or measurements;
    3. The date(s) analyses were performed
    4. The individual(s) who performed the analyses;
    5. The analytical techniques or methods used; and
    6. The results of such analyses.
D. Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.
E. The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

11. Signatory Requirements

A. All applications, including NOIs, must be signed as follows:
    1. For a corporation: By a responsible corporate officer. For the purpose of this Part, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any

other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

2. For a partnership or sole proprietorship: By a general partner or the proprietor, respectively; or
3. For a municipality, state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this Part, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrator of EPA).

B. All reports required by this permit, including SWPPPs, must be signed by a person described in Appendix G, Subsection 11.A above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
   1. The authorization is made in writing by a person described in Appendix G, Subsection 11.A;
   2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
   3. The signed and dated written authorization is included in the SWPPP. A copy must be submitted to EPA, if requested.

C. Changes to Authorization. If an authorization under Part 2.1 is no longer accurate because a different operator has responsibility for the overall operation of the construction site, a new NOI satisfying the requirements of Part 2.1 must be submitted to EPA prior to or together with any reports, information, or applications to be signed by an authorized representative. The change in authorization must be submitted within the time frame specified in Part 2.4, and sent to the address specified in Part 2.2.

D. Any person signing documents required under the terms of this permit must include the following certification:
   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons

directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

E. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

12. Reporting Requirements

A. Planned changes. You must give notice to EPA as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
   1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR §122.29(b); or
   2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR §122.42(a)(1).

B. Anticipated noncompliance. You must give advance notice to EPA of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

C. Transfers. This permit is not transferable to any person except after notice to EPA. EPA may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act. (See 40 CFR §122.61; in some cases, modification or revocation and reissuance is mandatory.)

D. Monitoring reports. Monitoring results must be reported at the intervals specified elsewhere in this permit.
   1. Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by EPA for reporting results of monitoring of sludge use or disposal practices.
   2. If you monitor any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by EPA.
   3. Calculations for all limitations which require averaging of measurements must use an arithmetic mean.

E. Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit must be submitted no later than 14 days following each schedule date.

F. Twenty-four hour reporting.

1. You must report any noncompliance which may endanger health or the environment. Any information must be provided orally within 24 hours from the time you become aware of the circumstances. A written submission must also be provided within five days of the time you become aware of the circumstances. The written submission must contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
2. The following shall be included as information which must be reported within 24 hours under this paragraph.
   a. Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR §122.41(g).)
   b. Any upset which exceeds any effluent limitation in the permit
   c. Violation of a maximum daily discharge limitation for any of the pollutants listed by EPA in the permit to be reported within 24 hours. (See 40 CFR §122.44(g).)

13. EPA may waive the written report on a case-by-case basis for reports under Appendix G, Subsection 12.F.2 if the oral report has been received within 24 hours.

G. Other noncompliance. You must report all instances of noncompliance not reported under Appendix G, Subsections 12.D, 12.E, and 12.F, at the time monitoring reports are submitted. The reports must contain the information listed in Appendix G, Subsection 12.F.

H. Other information. Where you become aware that you failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Permitting Authority, you must promptly submit such facts or information.

13. Bypass

A. Definitions.
   1. Bypass means the intentional diversion of waste streams from any portion of a treatment facility
   2. Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

B. Bypass not exceeding limitations. You may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Appendix G, Subsections 13.C and 13.D.

C. Notice–
   1. Anticipated bypass. If you know in advance of the need for a bypass, you must submit prior notice, if possible at least ten days before the date of the bypass.
   2. Unanticipated bypass. You must submit notice of an unanticipated bypass as required in Appendix G, Subsection 12.F (24-hour notice).

D. Prohibition of bypass.
   1. Bypass is prohibited, and EPA may take enforcement action against you for bypass, unless:
      a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
      b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
      c. You submitted notices as required under Appendix G, Subsection 13.C.
   2. EPA may approve an anticipated bypass, after considering its adverse effects, if EPA determines that it will meet the three conditions listed above in Appendix G, Subsection 13.D.1.

14. Upset

A. Definition. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond your reasonable control. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
B. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Appendix G, Subsection 14.C are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
C. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset must demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
   1. An upset occurred and that you can identify the cause(s) of the upset;
   2. The permitted facility was at the time being properly operated; and
   3. You submitted notice of the upset as required in Appendix G, Subsection 12.F.2.b(24 hour notice).
   4. You complied with any remedial measures required under Appendix G, Section 4.
D. Burden of proof. In any enforcement proceeding, you, as the one seeking to establish the occurrence of an upset, has the burden of proof.

FTC Air Compliance Guide for Project Proponents and Contractors & Air Quality Assessment Form

Contact The Air Program

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Air Quality Specialist: Christine Russell 719.526.1708
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Prepared by the FTC Directorate of Public Works,
Environmental Division

Introduction

This guide is intended to provide Project Proponents, Contractors, and DPW staff with the basic and essential information required to maintain compliance with the various AIR EMISSIONS CONTROL regulatory agencies, statutory requirements, permits, and sustainability efforts that Fort Carson (FTC) must adhere to.

The AIR QUALITY ASSESSMENT form (AQA) has been integrated into this guide, and is the essential reporting and planning document used by the Air Program to ensure compliance with the various New Source Review laws, Ozone Depleting Substance management, New Source Performance Standards, the FTC Title V Operating Permit (95OPEP110), Green House Gas Reporting, General Conformity, and Prevention of Significant Deterioration (PSD) regulations.

Responsibility

The Proponent / Contractor is responsible for reading and understanding the requirements outlined in this guide in there entirety, and then completing the applicable portions of the Air Quality Assessment form per RFP/Contract requirements.

The Air Program will analyze the project / action to determine if a threshold of significance will be exceeded and then document the findings in the NEPA review. You may be contacted to gather additional information for further analysis. A full general conformity analysis, PSD permit, or Construction permit (New Source Review (NSR)) MAY BE REQUIRED. Please be advised that any required permit MUST BE RECEIVED PRIOR TO THE START OF CONSTRUCTION, and can take anywhere from 60 to 120 days to receive (PSD permits can take 18+ months).

AQA Form Instructions

1.) Complete only the AQA form sections (1 - 6) that are applicable to your project, activity, or task. If a sections does not apply, use the check box at the top of the section to indicate so. The NEPA program may have already screened your action for the informational requirements to include with your submission(s). If that is the case then only those required sections for each Part will be visible. See "Required Sections" at the end of these instructions.

2.) **Part A** and **Part B** Requirements: **Part A** requirements are due to the DPW-ED Air Program no less than 2 weeks prior to the initiation of the proposed project. **Part B** requirements, if applicable, will be due at the conclusion of the project. **Electronic submission is preferred.**

3.) Provide required data in the green shaded cells if applicable. Several cells contain conditional formatting and data validation (drop down) that will require the preparer to select the most approximate match for the data to be provided.

4.) This workbook contains **MACROS** which provide the user with additional functionality for viewing and populating required data fields. If MACROS are disabled, the AQA form can still be utilized, but some of the functionality will be lost.

5.) Cells outlined in red provide system and previously defined default data selection that can be used to populate or calculate additional data entry fields. **MACROS must be enabled to use these features.**

6.) Directions for enabling MACROS can be found by typing "Enable Macros" in the question / Help dropdown (upper righthand corner of the menu tool bar). Additionally, the Visual Basic Editor project is unlocked should the user wish to review the MACROS before utilizing the additional functionality they provide.

7.) Please save the file using a different name (something descriptive), such as your company's name and the project name.

The following sections, if checked, require data submission for your project or action.

Part A Requirements: Due prior to project initiation.

- ☑ Dust Control / Land Disturbance
- ☑ General Conformity Emissions Analysis
- ☑ New Emissions Source and Permit Applicability Review
- ☑ Air Conditioning & Refrigerant Containing Equipment

Part B Requirements: Due at project conclusion.

- ☑ Product / Chemical Use Reporting

Fugitive Particulate Matter (PM) Definition

Fugitive Particulate Emissions; As defined under Colorado AQCR, means fugitive emissions of particulate matter that are the direct or proximate result of man's activities, (e.g., Materials left by man from development projects that are exposed to the wind or later acted upon by another force such automobile traffic, or particulate matter being thrown into the atmosphere by the operation of a bulldozer, material handling operations, etc...)

Air Program Guidance / Requirements

Land Disturbance Air Permit Application(s)
Under Colorado air quality regulations, land development refers to all land clearing activities, including but not limited to land preparation such as excavating or grading, for residential, commercial, or industrial development, or oil and gas exploration and production. Land development activities release fugitive dust, a pollutant regulated by the Air Pollution Control Division (Division) at the Colorado Department of Public Health and Environment.

1.) For projects lasting in duration for greater than 6 months, or have a total disturbed area of greater than 25 acres, proponents and/or contractors shall submit either a Land Development Air pollution Emissions Notice (LD APEN) or file for project inclusion under the State's General Permit.

2.) The links below provide an overview of the air pollution reporting and permitting requirements that may apply to land development activities.

- State Land Disturbance Permit Guidance.pdf
- Colorado Land Disturbance Permit Application / APEN.doc
- Copy of State General Permit

ALL Construction Activities
Regardless of the fact that a project is deemed exempt from Land Disturbance permitting requirements by the state, all construction activities are subject to the following regulations and controls.

1.) 20% opacity limit shall apply to all construction activities.

2.) No off-property transport emission limitation guidelines shall apply.

3.) Water and use controls as necessary to comply with the law.

Paved Roads
Any person who through operations or activities repeatedly deposits materials which may create fugitive particulate emissions on a public or private paved roadway is required to comply with the following to minimize such emissions;

1.) Gravel entryways shall be utilized to prevent mud and dirt carryout onto paved surfaces.

2.) Any mud or dirt tracked out onto paved surfaces shall be cleaned up daily.

Storage and Handling of Materials
Any owner or operator or any new or existing materials storage and handling operation from which fugitive particulate emissions will be emitted shall be required to comply with the following regulations and controls in order to minimize such emissions;

1.) 20% opacity limit shall apply to storage and handling of materials.

2.) No off-property transport emission limitation guidelines shall apply to storage and handling of materials.

3.) Water and use controls as necessary to comply with the law.

Haul Roads
FTC has a State enforceable Fugitive Dust Control Plan and a mandate to control emissions to the extent possible and practical from all dirt roads on the installation.

1.) Contractors which contribute significantly to trip counts (> 40 vehicles/day) along any section of the installation's dirt roads for hauling purposes will be required to assist in maintaining emissions control by watering to the extent that no nuisance emissions are created.

2.) Contractors shall adhere to posted speed limits on all roads at all times.

Haul Trucks
Any owner or operator of any new or existing haul trucks from which fugitive particulate emissions will be emitted shall be required to;

1.) Cover all loads when trucks are leaving the work site (work site is defined as the immediate construction area as defined by the permit or APEN application).

Sandblasting Operations

Any owner or operator of any new or existing sandblasting activities from which fugitive particulate emissions will be emitted shall be required to;

1.) Comply with the 20% opacity emission limitation guideline.

2.) Use control methods inherent to the industry standards to comply with the law.

Demolition Activities

Employ watering to prevent potentially harmful construction debris and fine particulate matter from being transported off-site (off-site is defined as the immediate demolition property).

Go to PM Section of AQA form

General Conformity Definition

For Federal actions a Conformity Determination is required for each pollutant where the total of direct and indirect emissions in a nonattainment or maintenance area caused by a Federal action would equal or exceed the applicable De Minimis or Regional Significance thresholds. 40 CFR 93.153(c) contains actions exempt from this requirement. A Record of Non-Applicability should be prepared for any action exempted, or where emissions are less than the above referenced significance thresholds.

Air Program Guidance / Requirements

Conformity Reviews

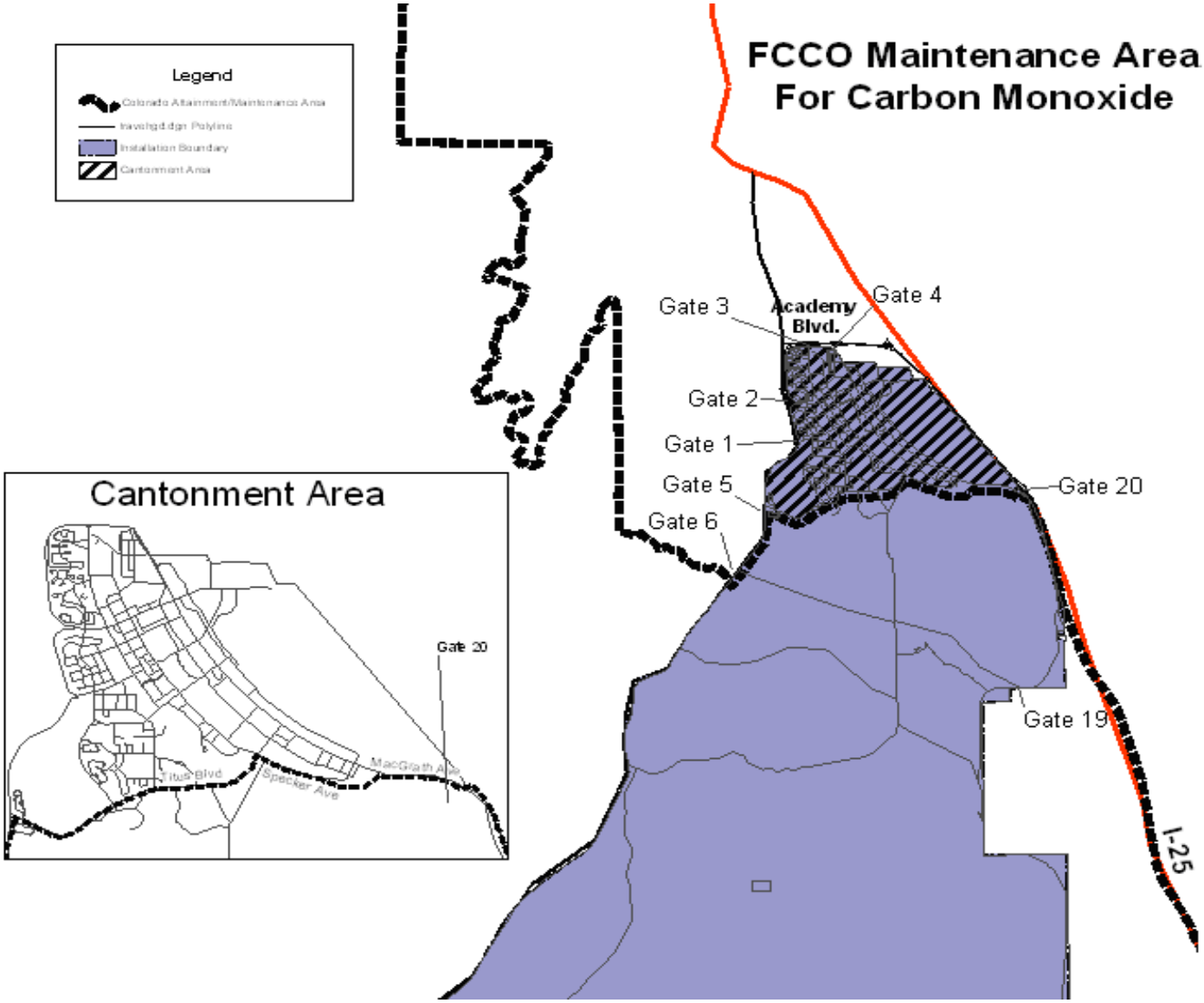
All federal actions taking place within the Colorado Springs Carbon Monoxide Maintenance Area (FTC Cantonment Area) must undergo a General Conformity Analysis.

All planned projects, actions, and initiatives must be accurately captured and conveyed to the DPW-ED Air Program via the Air Quality Assessment (AQA) form. This information is required BEFORE the action begins so that the Air Program can complete the emissions analysis (if applicable) and document the conforming action via the Record of Non-Applicability (RONA), or one of the other methods as outlined in the reference CFR.

1.) Complete the AQA form. General exemptions are given for common conforming actions, that under the law do not require an emissions analysis. If the form button below is disabled then based on your input under the general project description, a conformity review is not required.

2.) Project Proponents are responsible for contacting the Air Program to inquire about the status of their action/project. Please allow up to 2 weeks after submission to complete the emissions analysis.

3.) In most cases projects will be exempt from the general conformity determination requirements. However the analysis must still be completed, and records must be maintained by the facility.



Go to General Conformity Section of AQA form

New Source Review (NSR) & Prevention of Significant Deterioration (PSD)

Fort Carson must manage contemporaneous changes to potential emissions from the installation that would cause or could be defined as a major modification under PSD, trigger New Source Performance Standards (NSPS) for a listed source category, or require a construction permit under the states NSR rules.

Air Program Guidance / Requirements

New Stationary Sources of External Combustion (ECU)

All new Boilers and H2O Heaters should be equipped or installed with certified Low NOx controls capable of reducing these exhaust gases to less than 30 ppm (corrected to 3% excess O2).

For H2O Heaters with heat inputs less than 400,000 btu/hr., the unit must be SCAQMD Rule 1146.2 certified and produce not more than 55 ppm of NOx (corrected to 3% excess O2).

Indirect Fired Make-up Air Units (MAU) should not be used on the installation since these units do not offer any emissions controls. Direct Fired MAUs may be used in limited circumstances but must be ANSI 83.4 or Z83.18 certified.

1.) All External Combustion Equipment installed, regardless of fuel type, must be reported to the DPW-ED Air Program via the equipment schedule portion of the Air Quality Assessment (AQA) form. This information is required BEFORE construction begins so that compliance, permitting, and modification (PSD) determinations can be made.

New Stationary Sources of Internal Combustion (ICU)

All Internal Combustion Engines, emergency or otherwise, not previously existing on FTC must receive an Air Emissions Construction Permit prior to construction (defined as foundation installation). The Engine must be certified by the manufacturer to the appropriate emissions control tier, based on the size of the unit and the date of manufacture.

1.) All planned Internal Combustion Engines, regardless of fuel type and size, must be reported to the DPW-ED Air Program via the equipment schedule portion of the Air Quality Assessment (AQA) form. This information is required BEFORE construction begins so that Air Permit Applications can be submitted early enough to receive timely permits and not cause undue delay to the project construction schedules. **ALL UNITS CURRENTLY REQUIRE A PERMIT.**

Other Stationary Sources of Criteria Pollutant Emissions

Any other sources of air pollution not specifically identified above must be reported to the air program for a regulatory determination. The determination will document the source type and the compliance status for the source well in advance of it's proposed operation. Examples of other sources include, parts washers and weapons cleaners, wood working shop tools, welding devices, paint booths, lab equipment, and any air pollution control devices to be connected to any existing or proposed piece of equipment.

1.) Provide initial details on the source via the AQA form.

Go to New Source Review Section of AQA form

Ozone Depleting Substance Containing Equipment

The required production and use phase out of Class II Ozone Depleting Compounds (ODC) requires that new HVAC equipment manufacturers must utilize Non-ODC refrigerants for equipment manufactured after 1/1/2010. Given the useful life of the equipment and facilities they support, Fort Carson should avoid specifying and using any Class II substance (ex. R-22) containing equipment to avoid potentially costly material acquisitions in the future due to supply issues. ALL **Class I** (ex. R-12, Halon) refrigerants are strictly controlled by DoD. If Class I substances are used and / or discovered contact the Air Program immediately for the requirements!!!

Air Program Guidance / Requirements

Refrigerant Types

HVAC equipment refrigerants should have an Ozone Depletion Potential of "0.0". Acceptable (HFC) refrigerant types include: R-23, R-134a, R-407a, b, & c, R-410a, & R-507.

DoD policy requires that ALL Class I and pure HCFC-22 (a Class II substance) must remain under DoD control at all times. Class I substances may not be stockpiled at an installation. Any portion not immediately used must be turned in to the ODC Strategic reserve. Pure HCFC-22 may be stored for use on installations or turned in to the ODC reserve.

1.) All ODS Containing Equipment installed, regardless of refrigerant type, must be reported to the DPW-ED Air Program via the equipment schedule portion of the Air Quality Assessment (AQA) form. This information is required so that compliance and registration determinations can be made.

2.) Any and all personnel engaging in any maintenance, repair, charging, or re-recharging, or any other activity upon any ODC containing equipment must be EPA certified, maintain records, and comply with 40 CFR parts 82 Subparts A, B, E, and F. This requirement is applicable to stationary and mobile assets, and is subject to enforcement under the Clean Air Act. 40 CFR Part 82 -- Protection of Stratospheric Ozone

3.) All records of certification and service (other than those of KIRA) shall be submitted to Air Program personnel and remain on site as proof of compliance. (Submittal Required)

Go to ODC Section of AQA form

Product Use Reporting

Per condition 18.2 of the Fort Carson Title V Permit (95OPEP110), "Fort Carson shall track emissions of Hazardous Air Pollutants (HAPs) from all insignificant activities on a calendar year basis. Calculations shall be completed by April 30 for the previous calendar year. For mass balance calculations, the permit holder shall assume that the total HAP contained in the raw material used is emitted to the atmosphere. HAP content shall be determined from the specific Material Safety Data Sheets (MSDSs). Records of emission calculations and the MSDS shall be maintained by the permit holder and made available to the Division for inspection upon request. For the purposes of this condition, insignificant activities shall be defined as any activity or equipment which emits any amount of emissions but does not require an APEN (NOT the same as a Land development APEN).

Air Program Guidance / Requirements

Construction, Maintenance, Renovations, and Other Contracted Functions
Entities engaged in activities matching the description above must provide Fort Carson with a detailed accounting of all materials and products used to accomplish the activity or task. This information is required to comply with the Title V Permit, and maintain an Area Source status for Hazardous Air Pollutant (HAP) emissions.

1.) **For Projects with a duration of less than 6 months:** Provide an MSDS for ALL products used at the conclusion of the project. Report product units and amounts used on the 1st page of the MSDS. An alternative to providing the MSDS is to completely fill out the "Product Use" section of the Air Quality Assessment (AQA) form, so that the Air Program can obtain an MSDS copy for our compliance calculations and records.

2.) **For Projects with a duration of greater than 6 months:** Provide an MSDS for ALL products used once per calendar year quarter. Report product units and amounts used on the 1st page of the MSDS. An alternative to providing the MSDS is to completely fill out the "Product Use" section of the Air Quality Assessment (AQA) form, so that the Air Program can obtain an MSDS copy for our compliance calculations and records.

Go to Product Use Section of AQA form

Air Quality Assessment Form

Part A

Version 4.0

Section 1

Project Name:

Project Number: NEPA Number:

Project Description:

Project Start Month: Project Start Year: Calculated Duration (days):

Project End Month: Project End Year: Calculated work days:

Sub Section 1.2: Contact Information Collapse

Company Name: Phone Number:

Address 1: Fax Number:

Address 2:

City, State, Zip:

Office POC Name: Phone Number:

e-mail Address:

Field POC Name: Phone Number:

e-mail Address:

Sub Section 1.3: Contract Affiliation Collapse

Contractor Type:

Discipline:

Gonernment POC for Project Oversight:

Government POC Phone Number:

Type of Governement Oversight:

Section 2

Land Disturbance Data

☐ NA, no Land Disturbance will occur. Collapse

Total Project Acers: Total Acers of Disturbed Land:

Total Acres Disturbed at Any One Time:

Date When Earthmoving will: Commence: Stop:

or, Estimated Duration: Duration Units:

Land Disturbance Phase Hours Allocations: Select Allocation Type

	Phase I	Phase II	Phase III		
(Enter the distribution (%) of hours worked during each phase)				Total	0%

Section 3

General Conformity Analysis

☐ NA, no work performed within Maintenance Area. Collapse

Sub Section 3.1: Demolition Data

Number of Structures to be Demolished: Size: Start Date Number of Stories: Duration:

Sub Section 3.2: Worker Trips

Total Number of Vehicles Used:

Number of Trips / Day / Vehicle:

% Vehicles that Use Diesel Fuel:

% of Vehicles that are NOT Trucks:

Average Round Trip Distance Driven **(Post Gate to Worksite per Vehicle (miles)**:

Worker Trip Phase Miles % Allocations: **Select Allocation Type**

	Phase I	Phase II	Phase III	
(Enter the distribution (%) of trips commuted per phase)				Total 0%

Sub Section 3.3: Other On-Road Trips

Total Number of 10 cuyd. Concrete Trucks Required:

Number of water truck Trips / Work Day:

Total Number of 20 cuyd. Dump Truck Trips Required:

Total Number of Material Delivery Trucks Required:

Total Number of 40 cuyd. Haul Truck Trips Required:

Other / Truck Trip Phase Hours % Allocations: **Select Allocation Type**

	Phase I	Phase II	Phase III	
(Enter the distribution (%) of trips made per phase)				Total 0%

Sub Section 3.4: Construction Equipment Specifications

Equipment Type	**Qty.**	**HP**	**Fuel**	**Emissions Tier**	**Hours (ea.)**	Phase I	Phase II	Phase III	**Select Allocation Type**
Scrapers									
Graders									
Dozers									
Front-End Loaders									
Skid Loaders									
Drill/Bore Rigs									
Tractor/Loader/Backhoes									
Excavators									
Aerial Lifts									
Generators/Compressors									
Trenchers									
Compactors/Tampers									
Pavers (conc. & asph.)									
Rollers Soil (Vib.)									
Rollers Soil (Comp.)									
Rollers Asphalt									
Other Paving Equip.									
Forklifts (off road)									
Cranes									
Concrete Saws									
Other Construction Equip.									

Section 4

New Source Review (New Emissions Sources)

☐ NA, no New Sources will be added or removed.

Collapse

Sub Section 4.1: External Combustion Equipment *(Boilers, Furnaces, Hot Water Heaters, etc…)*

Equipment / Emissions Unit Type	**Max. Heat Input Rating (MBtu/Hr)**	**Fuel Type**	**NOx Emissions**	**Manufacturer**	**Model**	**Action**

1							
2							
3							
4							
5							
6							
7							
8							
9							
						PTE (lbs)	

Sub Section 4.2: Internal Combustion Equipment *(Generators, Other Engines, etc…)*

	Equipment / Emissions Unit Type	Rated BHP	Fuel Type	Emissions Tier	Manufacturer	Model	Action
1							
2							
3							

Sub Section 4.3: Other Equipment *(select as many as apply)*

If Other Please Explain:

Section 5

Ozone Depletion (Refrigeration Equipment)

☐ NA, no Refrigeration Equipment will be added or removed.

Collapse

	Equipment Type	System Size (Value)	System Size (Units)	Refrigerant Type	Number of Circuits	Charge (lbs)	Manufacturer	Model
1								
2								
3								
4								
5								
6								
7								
8								

Air Quality Assessment Form

PART B

Version 4.0

Section 6

Product Use Data

☐ NA, no Products will be used to complete work / task.

Collapse

Preparer's Name: Submission Quarter: Submissions Year:

	Product Name	National Stock No. or Product No.	Manufacturer	Container Size	Container Units	Quantity Used
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Additional Comments / Data

Colorado Department of Public Health & Environment
Air Pollution Control Division

NOTICE OF START-UP

THIRTY-DAY PRIOR NOTICE REQUIRED OF ALL NEW SOURCES

Even with a permit you cannot legally commence operation or conduct an activity for a new source until 30 days after you have notified the Division of the start-up date (Section 25-7-114.5(12)(a) of the Colorado Air Pollution Prevention and Control Act). In most cases, a permit is applied for and approved before the anticipated commencement date, so the 30 day prior notice causes no problems. ***Note:*** ***this form is not a Relocation Notice for portable sources.***

If, however you plan to commence your operation or activity as soon as you receive the permit, you should estimate the date you expect to commence (assuming the permit is approved) and fill out and return this form at least thirty days prior to that date. This will avoid a 30-day delay between receipt of the permit and commencement.

Notification can be accomplished by completing the form below and returning it to:

Colorado Department of Public Health & Environment
APCD-SS-B1
4300 Cherry Creek Drive South
Denver, CO 80246-1530

Please contact the Division immediately (303) 692-3150 if you have any questions or problems concerning this requirement.

PERMIT NUMBER: _____
AIRS (AFS) NUMBER: _____
ADDRESS OR LOCATION: _____
_____
_____

PROJECT DESCRIPTION: _____
_____
_____
_____
_____

Operation of the emission source(s) to which the above permit number has been assigned is expected to begin on _____
and will be in full operation by _____

COMPANY	***APPLICANT'S NAME (PLEASE PRINT)***
PERSON TO CONTACT FOR VERIFICATION OF STARTUP DATE	***APPLICANT'S SIGNATURE***
TELEPHONE NUMBER OF CONTACT PERSON	***POSITION OR TITLE***
	DATE

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Air Pollution Control Division Construction Permit Application

PLEASE READ INSTRUCTIONS ON REVERSE SIDE.

1. Permit to be issued to: _____
2. Mailing Address: _____
3. General Nature of Business: _____
   SIC code (if known) _____
4. Air Pollution Source Description: _____
   (List permit numbers if existing source, _____
   attach additional pages if needed) _____ Is this a Portable Unit? Yes / No
5. Source Location Address (Include Location Map) If portable, include the initial location and home base location

6. Reason for Application: (Check all that apply)

- ☐ New or Previously Unreported Source
- ☐ Modification of Existing Source
- ☐ Request for Synthetic Minor Permit
- ☐ Other: _____

Administrative Permit Amendments

- ☐ Transfer of Ownership (Complete Section 9 & 10 below)
- ☐ Company Name Change (Complete Section 9 below)
- ☐ Other: _____

7. Projected Startup Date: _____

Signature of Legally Authorized Person of Company listed in Section 1 — Date Signed

Type or Print Name and Official Title of Person Signing Above — Phone: _____ Fax: _____

8. Check appropriate box if you want:
   - ☐ Copy of preliminary analysis conducted by Division
   - ☐ To review a draft of the permit prior to issuance

These sections are to be completed only if a company name change or transfer of ownership has occurred.

9. Permit previously issued to: _____
10. Transfer of Ownership Information
    Effective Date of Permit Transfer: _____

    As responsible party for the emission source(s) listed above, I certify that the business associated with this source has been sold, and agree to transfer the permit to said party.

Signature of Legally Authorized Person of Company listed in Section 9 — Date Signed

Type or Print Name and Official Title of Person Signing Above — Phone: _____ Fax: _____

Mail completed application, APENs, and filing fee to:

Colorado Department of Public Health and Environment
Air Pollution Control Division
4300 Cherry Creek Drive South, APCD-SS-B1
Denver, Colorado 80246-1530

http://www.cdphe.state.co.us/ap/stationary.asp
Phone: (303) 692-3150

INSTRUCTIONS FOR THE COMPLETION OF THE
APPLICATION FOR CONSTRUCTION PERMIT OR PERMIT MODIFICATION FORM

The following instructions for the completion of this form are titled, lettered, and numbered the same as the applicable sections of the form on the other side.

If a section does not apply, write "N/A": **DO NOT LEAVE BLANK**.

NOTE: All information submitted as part of this permit application and all data generated by the Division as part of processing this permit will be considered open to the public unless confidential treatment is requested in writing. All such materials **MUST** be (1) clearly marked "CONFIDENTIAL" and (2) enclosed in a **separate** sealed envelope marked "CONFIDENTIAL INFORMATION" to ensure against accidental release. Confidentiality is granted only if the release of such information would result in economic disadvantage to the applicant. If confidentiality is requested, the Division will notify you of its decision and, if denied, allow time for you to present additional evidence justifying the need for confidentiality. In general, confidentiality requests will increase permit processing time. Under no circumstances can emissions data be held confidential.

1. **PERMIT ISSUED TO:** List the name of the company (e.g., corporation, partnership, association, individual owner, or governmental agency) to whom the permit is to be issued and who will therefore be responsible for the operation of the source. This company name will be listed on the permit.

2. **MAILING ADDRESS:** This is the address for all correspondence relating to this permit.

3. **GENERAL NATURE OF BUSINESS:** List the business activity (dry cleaner, saw mill, furniture manufacturer, commercial printing, etc.). Also, list the Standard Industrial Classification (S.I.C.) for this type of business activity, if known.

4. **AIR POLLUTION SOURCE DESCRIPTION:** Provide a brief description of the equipment being permitted and the associated emission controls (e.g., concrete batch plant with baghouses, paint booth with particulate filters). If this source has an existing APCD permit(s), please list all applicable permit numbers.

5. **SOURCE ADDRESS:** Do not give a P.O. Box. This is for the physical location of the source. Please include a map that indicates the exact location and shows major topographic features. If the source is portable, include the home base and initial location.

6. **REASON FOR APPLICATION:**

   Modification of Permitted Source – A permit modification may be required for changes in emissions, throughput, equipment, etc.

   Request for Synthetic Minor –A source that is voluntarily applying for a permit to create federally enforceable permit conditions to limit the potential to emit criteria or hazardous air pollutants in order to avoid other requirements. Public comment must be conducted prior to the issuance of any synthetic minor emission permit.

   Administrative Permit Amendments

   Transfer of Ownership – A transfer of ownership is required if equipment previously permitted by another company has been purchased. A merger is considered to be a transfer of ownership. Complete sections 9 & 10 of this form.

   Name Change – A name change is appropriate if only the name on the permit is to be changed, and there is no transfer of ownership. Complete section 9 of this form.

   Other – Any other administrative change as defined in Regulation No. 3, Part A, Section I.B.1.

7. **PROJECTED START-UP DATE:** Construction, operation, or modifications prior to receipt of a permit is prohibited by Colorado Statute.

8. **DRAFT REVIEW REQUEST:** Review requests will usually add to both processing costs and processing time. Any additional time and charges incurred by the Division in providing a draft and correspondence with the applicant will be billed to the applicant. The Division will consider the request an official extension of the processing deadlines specified by the Act. The extension will consist of the number of days elapsed between Division mailing of the draft permit to the applicant and receipt of the applicant's comments by the Division, not to exceed 15 days. However, the Division is not bound to consider any comments received after the 15 day time period lapses, unless both the Division and the applicant agree to a further extension of the processing deadlines.

9. **PERMIT PREVIOUSLY ISSUED TO:** List the name of the company on the most recently issued permit. This section should be completed only if a company name change or transfer of ownership has occurred.

10. **TRANSFER OF OWNERSHP:** This section should be completed by the former owner of the permit. Transfer of the permit(s) conveys to the new owner all responsibility, coverage and liability associated with the permit(s). Submission of a transfer of ownership application without a request for permit modification implies that no change is contemplated which would constitute a new or modified air pollution source. A written agreement containing a specific date for transfer of ownership permit will be accepted in lieu of completion of this section of this form.

Submit completed application, APENs, and filing fee to the address below:

APENS: More than one Air Pollutant Emission Notice (APEN) may be needed with this application. Only one application form needs to be completed.

Multiple sources – An APEN is required for each source unless they may be grouped as specified in Regulation No. 3, Part A, Section II.B.4.

Transfer of Ownership – An APEN must be submitted for each individual emission source to be transferred.

Name Change – If a company is changing its name only, and all other procedures and information as stated in the last submitted APEN remains unchanged, then only one APEN for each facility is required.

FEES:

Filing Fee: Permittee must submit $119.96 per APEN with the application.

Permit Processing Fee: Permittee will be invoiced at the rate of $59.98 per hour based on the amount of time spent reviewing the application and issuing the permit. Invoices for APEN fees and permit processing fees must be paid before permit will be issued. Once an application is received, all processing time will be charged regardless of whether a permit is issued or not. If a project is cancelled, the division should be notified in writing immediately.

Annual Fees: Annual fees will be billed for each source requiring an APEN to cover the costs of periodic inspections and administration. Annual fees are based on the quantity and type of pollutants emitted. For specific information related to fees see Regulation No. 3, Part A, Section VI.

Mail completed application, APENs, and filing fee to:

Colorado Department of Public Health and Environment
Air Pollution Control Division
4300 Cherry Creek Drive South, APCD-SS-B1
Denver, Colorado 80246-1530

http://www.cdphe.state.co.us/ap/stationary.asp
Phone: (303) 692-3150

- LAND DEVELOPMENT -

Air Pollutant Emission Notice (APEN) – and – Application for Construction Permit

☐ New Facility ☐ Transfer of Ownership * ☐ Change in Production ☐ No Change (APEN Update Only)

All sections of this APEN and application must be completed prior to submittal to the Division for both new and existing facilities. An application with missing information may be determined incomplete and may result in longer engineer processing times.

* Note: For transfer of ownership or company name change of a permit, you must also submit a Construction Permit Application form.

Permit Number _____ **AIRS Number** _____

Company Name: _____

Billing Address: _____ Zip Code: _____

_____

_____

Person to Contact: _____ Phone Number: _____

Email Address: _____ Fax Number: _____

Please provide description of the activity: (Also, please provide a site map)

_____

_____

_____

Project Name & Location: _____

County: _____ Section: _____ Township: _____ Range: _____

Total area of land in project: _____ Acres

Date earthmoving will – Commence: _____ Stop: _____

Total area subject to earthmoving: _____ Acres

Total disturbed area at any one time: _____ Acres

Area to be paved (roads, parking lots): _____ Acres

Date paving will be completed: _____

Estimated time to complete entire project (includes buildings) _____

List any known or suspected contaminates in the soil:

_____

Brief description of how the project development will occur (attach an additional page if necessary):

_____

_____

_____

_____

- LAND DEVELOPMENT -

FUGITIVE DUST CONTROL PLAN FOR LAND DEVELOPMENT
(This must be submitted with the Air Pollutant Emission Notice-and-Application for Emission Permit)

Regulation No. 1 requires that a fugitive dust control plan be submitted by applicants whose source / activity results in fugitive dust emissions. The control plan must enable the source to minimize emissions of fugitive dust to a level that is technologically feasible and economically reasonable. If the control plan is not adequate in minimizing emissions a revised control plan may be required. The control plan (if acceptable to the Division) will be used for enforcement purposes on the sources.

Please check the dust control measures which you propose for your activity. The Division will enforce the control measures checked. Use separate sheets if more space is needed. Also note items with an asterisk (*). This indicates those measures which will probably be required.

I. Control of Unpaved Roads on Site

- ☐ Watering
  - ☐ Frequent (Watering Frequency of 2 or More Times Per Day)
  - ☐ As Needed
- ☐ Application of Chemical Stabilizer
- ☐ Vehicle Speed Control
  Speeds limited to _____ mph maximum. Speed limit signs must be posted.
  (Generally 30 mph is maximum approvable speed on site.)
- ☐ Gravelling

II. Control of Disturbed Surface Areas on Site

- ☐ Watering
  - ☐ Frequent (Watering Frequency of 2 or More Times Per Day)
  - ☐ As Needed
- ☐ Application of Chemical Stabilizer
- ☐ Vehicle Speed Control
  Speeds Limited To _____ MPH Maximum. Speed Limit Signs Must Be Posted.
- ☐ Revegetation Revegetation Must Occur Within One Year Of Soil Disturbance
  - ☐ Seeding with mulch
  - ☐ Seeding without mulch
- ☐ Furrows at right angle to prevailing wind
  Depth of furrows _____ Inches (must be greater than 6")
- ☐ Compaction Of Disturbed Soil On A Daily Basis To Within 90 % Of Maximum Compaction
  (As determined by a Proctor Test).
  - ☐ Foundation areas only; or
  - ☐ All disturbed soil.
- ☐ Wind Breaks
  Type: _____ (Example: Snow Fence, Silt Fence, etc.)
- ☐ Synthetic Or Natural Cover For Steep Slopes.
  Type: _____ (Netting, Mulching, etc.)

Colorado Department of Public Health and Environment
Air Pollution Control Division

- LAND DEVELOPMENT -

III. Prevention Of Mud And Dirt Carried Out Onto Paved Surfaces.

- ☐ Prevention
  - ☐ Gravel Entry Ways
  - ☐ Washing Vehicle Wheels
  - ☐ Other: _____
- ☐ Cleanup of Paved Areas Frequency: _____ Times Per Day
  - ☐ Street Sweeper
  - ☐ Hose With Water
  - ☐ Other: _____

Additional Sources of Emissions

List any other sources of emissions or control methods

_____

_____

_____

_____

_____
Signature of Legally Authorized Person (not a vendor or consultant) Date

_____
Name (please print) Title

Check the appropriate box if you want:

- ☐ Copy of the Preliminary Analysis conducted by the Division
- ☐ To review a draft of the permit prior to issuance

(Checking any of these boxes may result in an increased fee and/or processing time)

Send this form along with $119.96 to:
Telephone: (303) 692-3150

Colorado Department of Public Health and Environment
Air Pollution Control Division
APCD-SS-B1
4300 Cherry Creek Drive South
Denver, CO 80246-1530

Small Business Assistance Program
(303) 692-3148

Small Business Ombudsman
(303) 692-2135

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FORT CARSON STORMWATER PROGRAM PROJECT INFORMATION FORM

Date:

Project Name/Description:

Project Location:

Project POC Information (Company, Name, Phone/Email):

Project Facility Type (Residential, Industrial, etc.):

Impervious Site Calculations

Site Components	Square Feet of Existing	Square Feet of New/Replaced
Building Footprint(s), Patios(s)		
Driveway(s), Parking Area(s)		
Paved Walkway(s), sidewalks		
Paved streets, tank trails		
Other (please specify):		
TOTAL IMPERVIOUS AREA		

Site Conditions

Elements	Pre-Construction	Post-Construction
% Site Slope		
Runoff Coefficient		
Overall Soil Type		
Disturbed Acreage		
Surface Flow Direction		
% Native Vegetative Cover		

Soil Erosion Potential (check one that applies):

☐ No grading, sub-surface extractions, or outside demolition/building activities will occur.

☐ Acreage disturbed is < 5-acres and some portion of the grading, sub-surface extractions or outside demolition/building activities will occur for longer than one year.

☐ Acreage disturbed is < 5-acres and all outside building, demolition, and earthwork will occur between October 1 and June 15.

☐ Acreage disturbed is < 5-acres and some portion of the outside building, demolition, and earthwork will occur between June 16 and September 30.

☐ Acreage disturbed is > 5-acres.

Receiving Water Body (check all that apply):

	Receiving Water Body	Distance From Receiving Water Body (feet)
☐	B-Ditch drainage	
☐	Clover Ditch (I-Ditch) drainage	
☐	Unnamed Ditch drainage	
☐	Rock Creek drainage	
☐	Other (please specify):	

Post-Construction Stormwater Controls for Runoff Reduction (check all that apply):

FORT CARSON STORMWATER PROGRAM PROJECT INFORMATION FORM

- ☐ Alternative Driveway/Pavement Design
- ☐ Disconnected Roof Drains
- ☐ Divided Sidewalks
- ☐ Not Directly Connected Pavement
- ☐ Grass Roof
- ☐ Bio-Retention
- ☐ Porous Pavement
- ☐ NA
- ☐ Other (please specify):

Post-Construction Stormwater Controls for Treatment (check all that apply):

- ☐ Constructed Wetland Basin (certain circumstances apply, please coordinate)
- ☐ Extended Detention Basin (to include a water quality capture volume)
- ☐ Infiltration Basin
- ☐ Infiltration Trench
- ☐ Grass/Vegetated Buffer
- ☐ Grass/Vegetated Swale
- ☐ Vegetated Filter Strip
- ☐ NA
- ☐ Other (please specify):

Post-Construction Stormwater Controls for Run-On Mitigation (list all that apply):

Approximate amount of run-on that the site will experience after project completed: _____

Dates of Construction:

Comments:

- Include a general location map that provides an outline of the entire project footprint, which is representative of the area discussed above, and surface drainage patterns.
- Provide all design details and O&M plans for the stormwater controls checked above.
- Complete and submit this form to the Fort Carson Stormwater Program prior to completion of project's final design.

Completed forms need to be returned to the Fort Carson Stormwater Program Office at:

Fax # 719-526-2091
or
CARSDECAMStormWater@us.army.mil

Website address: http://sems.carson.army.mil/environmental/water/stormwater/stormwater_home.htm

FORT CARSON STORMWATER PROGRAM PROJECT INFORMATION FORM

Date:

Project Name/Description:

Project Location:

Project POC Information (Company, Name, Phone/Email):

Project Facility Type (Residential, Industrial, etc.):

Impervious Site Calculations

Site Components	Square Feet of Existing	Square Feet of New/Replaced
Building Footprint(s), Patios(s)		
Driveway(s), Parking Area(s)		
Paved Walkway(s), sidewalks		
Paved streets, tank trails		
Other (please specify):		
TOTAL IMPERVIOUS AREA		

Site Conditions

Elements	Pre-Construction	Post-Construction
% Site Slope		
Runoff Coefficient		
Overall Soil Type		
Disturbed Acreage		
Surface Flow Direction		
% Native Vegetative Cover		

Soil Erosion Potential (check one that applies):

☐ No grading, sub-surface extractions, or outside demolition/building activities will occur.

☐ Acreage disturbed is < 5-acres and some portion of the grading, sub-surface extractions or outside demolition/building activities will occur for longer than one year.

☐ Acreage disturbed is < 5-acres and all outside building, demolition, and earthwork will occur between October 1 and June 15.

☐ Acreage disturbed is < 5-acres and some portion of the outside building, demolition, and earthwork will occur between June 16 and September 30.

☐ Acreage disturbed is > 5-acres.

Receiving Water Body (check all that apply):

	Receiving Water Body	Distance From Receiving Water Body (feet)
☐	B-Ditch drainage	
☐	Clover Ditch (I-Ditch) drainage	
☐	Unnamed Ditch drainage	
☐	Rock Creek drainage	
☐	Other (please specify):	

Post-Construction Stormwater Controls for Runoff Reduction (check all that apply):

FORT CARSON STORMWATER PROGRAM PROJECT INFORMATION FORM

- ☐ Alternative Driveway/Pavement Design
- ☐ Disconnected Roof Drains
- ☐ Divided Sidewalks
- ☐ Not Directly Connected Pavement
- ☐ Grass Roof
- ☐ Bio-Retention
- ☐ Porous Pavement
- ☐ NA
- ☐ Other (please specify):

Post-Construction Stormwater Controls for Treatment (check all that apply):

- ☐ Constructed Wetland Basin (certain circumstances apply, please coordinate)
- ☐ Extended Detention Basin (to include a water quality capture volume)
- ☐ Infiltration Basin
- ☐ Infiltration Trench
- ☐ Grass/Vegetated Buffer
- ☐ Grass/Vegetated Swale
- ☐ Vegetated Filter Strip
- ☐ NA
- ☐ Other (please specify):

Post-Construction Stormwater Controls for Run-On Mitigation (list all that apply):

Approximate amount of run-on that the site will experience after project completed: _____

Dates of Construction:

Comments:

- Include a general location map that provides an outline of the entire project footprint, which is representative of the area discussed above, and surface drainage patterns.
- Provide all design details and O&M plans for the stormwater controls checked above.
- Complete and submit this form to the Fort Carson Stormwater Program prior to completion of project's final design.

Completed forms need to be returned to the Fort Carson Stormwater Program Office at:

Fax # 719-526-2091
or
CARSDECAMStormWater@us.army.mil

Website address: http://sems.carson.army.mil/environmental/water/stormwater/stormwater_home.htm

Once form has been signed, it needs to be returned to the Fort Carson Stormwater Program for final processing.

Fort Carson Stormwater Program
Stormwater Pollution Prevention Plan (SWPPP) Review Form

Please complete Sections 3, 5, 6 and 7 (highlighted portions) of this form. This form needs to be completed and signed by both Fort Carson and the project proponent prior to a Notice of Intent (NOI) being filed for eligible construction projects. This form assists Fort Carson in meeting specific requirements outlined in our National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges from Federal Facility Small Municipal Separate Storm Sewer Systems (MS4) in Colorado (Permit No. COR042000). Once the comments have been adequately responded to and the document has been signed by both the Fort Carson Stormwater Program staff and the project proponent(s) [operator(s) that will be filing the NOI], a copy will need to be included in the project SWPPP, as well as e-mailed to the Stormwater Program staff at:

CARSDPWwEDSW@conus.army.mil

Once the Fort Carson Stormwater Program has signed this form and returned it to the project proponent(s), the NOI filing process can be initiated.

1. **Project**
   Name
   Location
   DPW (or other)/Environmental Number
   Construction Dates

2. **Fort Carson Stormwater Program Contact Information**
   POC Sarah Easton
   POC Information 719-524-2478
   Review Date

3. **Project Proponent(s) [operator(s) that will be filing the NOI] Contact Information**
   POC Responsible
   Date
   Issues, if any

4. **Fort Carson Stormwater Program Acknowledgement of SWPPP Coordination**
   POC Name Sarah Easton
   Date

_____
Signature

5. **Project Proponent Acknowledgement that Form was Received**
   POC Name
   POC Information
   Date

_____
Signature

6. Checklist:

Criteria	Yes	No	Fort Carson Comments	Project Proponent(s) Responses
Is there a reference in the SWPPP stating the project is in an MS4? **(MS4 Program)**	Yes	No		
Did all the "operators" sign the SWPPP? **(CGP APP G-11B)**	Yes	No		
Did the signatures include the certification statement? **(CGP APP G-11 D)**	Yes	No		
Is there a site description? **(CGP Section 5.2)**	Yes	No		
Is the nature, sequence and timing of construction included? **(CGP Section 5.2 B.2)**	Yes	No		
Total area of site and total area to be disturbed included? **(CGP Section 5.2 B.3)**	Yes	No		
Operator evaluation of endangered species/cultural resources conducted? **(CGP Section 5.5)**	Yes	No		
Is there a general site map? **(CGP Section 5.2 B.4)**	Yes	No		
Do all maps document equipment staging areas, material supply staging areas, track out pads, soil disturbance, drainage patterns/outfalls, ect.? **(CGP Section 5.2 C.1)**	Yes	No		
Does SWPPP include interim stabilization measures? **(CGP Section 5.3 B)**	Yes	No		
Does SWPPP include permanent stabilization measures? **(CGP Section 5.3 B)**	Yes	No		

Criteria	Yes	No	Fort Carson Comments	Project Proponent(s) Responses
Does SWPPP include a dewatering plan? **(MS4 Program)**	Yes	No		
Does SWPPP identify contractors and timing of by which stabilization practices will be implemented? **(CGP Section 5.3 B)**	Yes	No		
Does SWPPP include a description of structural practices for site? (track pads, fences, sediment traps, storm drain inlet protection, etc.) **(CGP Section 5.3 A)**	Yes	No		
Does the SWPPP identify the contractors who will implement the structural practices? **(CGP Section 5.3 A)**	Yes	No		
Does the SWPPP identify stormwater management measures to address stormwater runoff once the construction is complete? **(CGP Section 3.1 E, MS4 Program)**	Yes	No		
Are the inspections being performed by a qualified person and are their qualifications in the SWPPP? **(CGP Section 4.D)**	Yes	No		

7. General Comments:

Fort Carson Stormwater Program

#	Page	Section	Comments	Project Proponent(s) Responses
1				
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Fort Carson Stormwater Program
Notice of Termination (NOT) Inspection Form

Date _____

Project Name _____

Project Location _____

Permittee #1 _____

NOI # _____

Dates of CGP Coverage _____

Permittee #2 _____

NOI # _____

Dates of CGP Coverage _____

Target Date for NOT filing _____

NOT Inspector & personnel _____

_____

Construction General Permit Conditions for filing NOT:

☐ A. Final stabilization has been achieved on all portions of the site for which you are responsible;

1. ☐ All soil disturbing activities at the site have been completed and either of the two following criteria have been met:
   a. a uniform (e.g,, evenly distributed, without large bare areas) perennial vegetative cover with a density of 70 percent of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or
   b. equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.
2. ☐ When background native vegetation will cover less than 100 percent of the ground (e.g., arid areas, beaches), the 70 percent coverage criteria is adjusted as follows: if the native vegetation covers 50 percent of the ground, 70 percent of 50 percent (0.70 X 0.50 = 0.35) would require 35 percent total cover for final stabilization. On a beach with no natural vegetation, no stabilization is required. If this criterion was followed, provide matrix for vegetation coverage: _____
   _____
3. ☐ In arid and semi-arid areas only, all soil disturbing activities at the site have been completed and both of the following criteria have been met:
   a. Temporary erosion control measures (e.g., degradable rolled erosion control product) are selected, designed, and installed along with an appropriate seed base to provide erosion control for at least three years without active maintenance by you,
   b. The temporary erosion control measures are selected, designed, and installed to achieve 70 percent vegetative coverage within three years.
   If so, need to establish an internal monitoring schedule to ensure establishment.
4. ☐ For individual lots in residential construction, final stabilization means that either:
   a. The homebuilder has completed final stabilization as specified above, or
   b. The homebuilder has established temporary stabilization including perimeter controls for an individual lot prior to occupation of the home by the homeowner and informing the homeowner of the need for, and benefits of, final stabilization.

5. ☐ For construction projects on land used for agricultural purposes (e.g., pipelines across crop or range land, staging areas for highway construction, etc.), final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to ‘‘water of the United States,’’ and areas which are not being returned to their preconstruction agricultural use must meet the final stabilization criteria (1) or (2) or (3) above.

☐ B. Another operator has assumed control according to Appendix G, Section 11.C over all areas of the site that have not been finally stabilized;
If so, please provide POC information_____

☐ C. Coverage under an individual or alternative general NPDES permit has been obtained; or
If so, please provide Permit # and Date_____

☐ D. For residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner.

MS4 Program Conditions for filing NOT:

☐ Received a copy of all post-construction stormwater BMP design drawings/as-builts (in both ‘.dgn’ and hard copy format). Please note that this information will need to be verified by Fort Carson staff, prior to filing for an NOT.

☐ Received a copy of all post-construction stormwater BMP O&M specifications, as applicable

☐ Received a copy of design grading and drainage plans (in both ‘.dgn’ and hard copy format)

☐ Received a copy of final, general layout of project site (to include buildings, roads, etc.)

☐ All post-construction BMPs have been cleaned out and are in optimum operating condition.

☐ Site conditions are stable and acceptable. If not, provide actions needed prior to filing NOT:

_____
_____
_____
_____
_____
_____
_____
_____

Once the Fort Carson Stormwater Program has signed this form and returned it to the project proponent(s), the NOT filing process can be initiated. The NOT must be submitted within 30 days of one of the above conditions being adequately met. Authorization to discharge terminates at midnight of the day the NOT is signed.

Name	**Signature**	**Date**
Fort Carson Stormwater Program		

Permit No. COR042001

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 WYNKOOP STREET
DENVER, COLORADO 80202-1129

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Clean Water Act, as amended, (33 U.S.C. §1251 et seq; “the Act"), except as provided in Part 1.3 of this permit,

Fort Carson

hereinafter “permittee”, is authorized to discharge from all municipal separate storm sewer outfalls existing as of the effective date of this permit

to receiving waters which include B-Ditch, Clover Ditch, the Central Unnamed Ditch, and Rock Creek and other associated waters of the United States within the exterior boundaries of Fort Carson,

in accordance with the conditions and requirements set forth herein.

This permit shall become effective April 30, 2009.

This permit and the authorization to discharge shall expire at midnight, April 29, 2014.

Signed this day of

_____
Authorized Permitting Official

Eddie A. Sierra, Acting Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

INDUSTRIAL (Rev.07/04

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5. Definitions

Part 1. Coverage Under This Permit

1.1 Permit Area

This permit covers all areas served by the municipal separate storm sewer system (MS4) within the exterior boundary of Fort Carson. This includes both the cantonment area and the downrange area of Fort Carson and does not include the Pinon Canyon Maneuver Site operated in conjunction with Fort Carson.

1.2 Discharges Authorized Under This Permit

1.2.1 During the effective dates of this permit, the permittee is authorized to discharge stormwater to Waters of the United States from the following areas, under the conditions of this permit:

1.2.1.1 All portions of the MS4 operated by Fort Carson.

1.2.2 This permit also authorizes the discharge of stormwater commingled with flows contributed by process wastewater, non-process wastewater, and stormwater associated with industrial activity, provided that the stormwater is commingled only with those discharges set forth in Part **1.3** of this permit.

1.3 Limitations on Permit Coverage

1.3.1 Non-Stormwater Discharges. The permittee must prohibit all types of non-stormwater discharges into its MS4, except for allowable non-stormwater discharges described in **Part 1.3.2.**

1.3.2 Allowable Non-Stormwater Discharges. The following sources of non-stormwater discharges are allowed to be discharged into the MS4 unless the permittee determines they are significant contributors of pollutants. If the permittee identifies any of the following categories as a significant contributor of pollutants, the permittee must include the category as an illicit discharge (see **Part 2.4**):

- Discharges authorized by a separate NPDES permit;
- Discharges in compliance with instructions of an On-Scene-Coordinator pursuant to 40 CFR part 300 or 33 CFR 153.10(e);
- Water line flushing;
- Landscape irrigation;
- Diverted stream flows;
- Rising ground waters;
- Uncontaminated ground water infiltration;
- Uncontaminated pumped ground water;
- Discharges from potable water sources;
- Foundation drains;

- Air conditioning condensate;
- Irrigation water;
- Springs;
- Water from crawl space pumps;
- Footing drains;
- Lawn watering;
- Individual residential car washing;
- Flows from riparian habitats and wetlands;
- Dechlorinated swimming pool discharges;
- Street wash water;
- Power washing where no chemicals are used;
- Roof drains;
- Fire hydrant flushings;
- Non-storm water discharges resulting from a spill which are the result of an unusual and severe weather event where reasonable and prudent measures have been taken to minimize the impact of such discharge;
- Emergency discharges required to prevent imminent threat to human health or severe property damage, provided that reasonable and prudent measures have been taken to minimize the impact of such discharges; and
- Discharges or flows from fire fighting activities occurring during emergency situations.

1.3.3 Stormwater Discharges Associated with Industrial Activity. This permit does not authorize stormwater discharges associated with industrial activity as defined in 40CFR §122.26(b)(14)(i)-(ix) and (xi).

1.3.4 Stormwater Discharges Associated with Construction Activity. This permit does not authorize stormwater discharges associated with construction activity as defined in 40 CFR §122.26(b)(14)(x) or 40 CFR §122.26(b)(15).

1.3.5 Discharges that are causing or contributing to an exceedance of applicable numeric or narrative water quality standards. EPA will notify the permittee if its MS4 discharges are likely to cause or contribute to a water quality impairment, or whose discharges contribute directly or indirectly to a 303(d) listed waterbody. If EPA determines that discharges from the MS4 are causing or contributing to a water quality impairment, the permittee's stormwater management program (SWMP) must include a section describing how the program will control the discharge of the pollutants of concern and ensure discharges from the MS4 will not cause or contribute to instream exceedances of the water quality standards. This documentation must specifically identify measures and Best Management Practices (BMPs) that will collectively control the discharge of the pollutants of concern. The permittee may be required to provide additional information to EPA to determine whether its discharge is causing or contributing to a water quality impairment.

1.3.6 Discharges of pollutants into waters which a Total Maximum Daily Load (TMDL)

has been either established or approved by EPA unless the discharge is consistent with that TMDL. The permittee must incorporate any conditions and requirements applicable to discharges from the MS4 into the Stormwater Management Program in order to remain eligible for permit coverage. EPA will notify the permittee if a TMDL has been developed that specifies a wasteload allocation (WLA) for discharges from the MS4. The notification will require the MS4 operator to assess and document whether the WLA is being met through implementation of existing storm water control measures or if additional control measures are necessary. The notification may also include requirements to describe and document an implementation schedule for controls, calculations, and monitoring or other proof that show that the WLA is being met. This may involve an iterative process of controls and evaluation. All documentation related to these requirements must be included as part of the records for the SWMP.

1.3.7 Discharges that do not comply with Colorado's anti-degradation policy for water quality standards. Colorado's anti-degradation policy can be obtained from the Colorado Department of Public Health and Environment or from its web site: http://www.cdphe.state.co.us/op/regs/waterqualityregs.asp (The anti-degradation rules are contained within Regulation 31 - Basic Standards and Methodologies for Surface Water).

1.3.8 Discharges and discharge-related activities that affect endangered species. Coverage under this permit is available only if the permittee's stormwater discharges, allowable non-storm water discharges, and discharge-related activities are not likely to:

- Jeopardize the continued existence of any species that are listed as endangered or threatened ("listed") under the ESA or result in the adverse modification or destruction of habitat that is designated as critical under the ESA ("critical habitat"); or

- Cause a prohibited "take" of endangered or threatened species (as defined under Section 3 of the Endangered Species Act and 50 CFR 17.3), unless such takes are authorized under sections 7 or 10 of the Endangered Species Act.

"Discharge-related activities" include: activities which cause, contribute to, or result in stormwater point source pollutant discharges; and measures to control stormwater discharges, including the citing, construction, and operation of Best Management Practices (BMPs) to control, reduce, or prevent stormwater pollution.

1.3.9 Discharges that Affect Historical Properties. Coverage under this permit is available only if the permittee's stormwater discharges, allowable non-stormwater discharges, and discharge-related activities are:

- Not likely to affect a property that is listed or is eligible for listing on the National Register of Historic Places as maintained by the Secretary of the

Interior; or

- In compliance with a written agreement with the State Historic Preservation Officer (SHPO) that outlines all measures the permittee will undertake to mitigate or prevent adverse effect to the historic property.

Part 2. Stormwater Management Program (SWMP)

2.1 General Requirements

2.1.1 The permittee must continue to develop, implement, and enforce a SWMP designed to reduce the discharge of pollutants from the MS4 to the maximum extent practicable (MEP), to protect water quality, and to satisfy Colorado's water quality standards. The SWMP must include management practices; control techniques, system design, engineering methods, and other provisions the permittee or EPA determines appropriate for the control of pollutants in discharges from the MS4.

2.1.2 The permittee must fully implement the SWMP, including meeting its measurable goals. Implementation should take place in approximate equal intervals throughout the permit and progress will be tracked in the annual report (see **Part 3.3**).

2.1.3 The SWMP must include each of the minimum control measures of **Parts 2.2-2.7.** For each of the minimum control measures the SWMP must include the BMPs that will be implemented and the measurable goals for each of the BMPs including, as appropriate, the months and years in which the required actions will be started and completed, and the frequency of the action.

2.1.4 The permittee must conduct an annual review of the SWMP in conjunction with preparation of the annual report required under **Part 3.3**.

2.1.5 EPA may request documentation of the minimum control measures as required by the SWMP. EPA may review and subsequently notify the permittee that changes to the SWMP are necessary to:

- Address discharges from the MS4 that are causing or contributing to water quality impacts;
- Include more stringent requirements necessary to comply with new Federal or State statutory or regulatory requirements;
- Include other conditions deemed necessary by the EPA to comply with water quality standards, ESA related requirements, and/or other goals and requirements of the CWA; and/or
- Address the SWMP requirements of the permit, if EPA determines that the permittee's current SWMP does not meet permit requirements.

2.1.5.4 EPA may request changes in writing and can require including a schedule to develop and implement the changes. The request will offer the permittee the

opportunity to propose alternative program changes to meet the objectives of the requested modification.

2.1.5.5 Transfer of Ownership, Operational Authority, or Responsibility for SWMP Implementation. The permittee must implement the SWMP on all new areas added to the permittee's MS4 (or for which the permittee becomes responsible for implementation of storm water quality controls) as expeditiously as practicable, but not later than one year from addition of the new areas. Implementation may be accomplished in a phased manner to allow additional time for controls that cannot be implemented immediately.

2.1.6 If EPA notifies the permittee that changes are necessary pursuant to ensure that stormwater discharges are not causing or contributing to a violation of water quality standards, the notification will offer the permittee an opportunity to propose alternative program changes to meet the objectives of the requested modification. Following this opportunity, the permittee must implement any required changes according to the schedule set by EPA.

2.2 Public Education and Outreach on Stormwater Impacts. The permittee must:

2.2.1 Continue to implement an education and outreach program for Fort Carson which targets project managers, contractors, tenants, students, and environmental staff in an effort to provide education and outreach about the impacts of stormwater discharges on local water bodies and the steps that can be taken to reduce pollutants in stormwater runoff;

2.2.2 At a minimum, produce and disseminate informational material to inform the public (i.e., project managers, contractors, tenants, students, and environmental staff) of the effects of erosion and runoff on water quality. Informational materials shall be updated and distributed as necessary throughout the duration of this permit, and should provide a location where all annual reports and/or SWMP updates as required by this permit may be viewed;

2.2.3 Provide and document training to all planning staff, project managers, contracting officers and other parties as applicable to learn about LID practices, green infrastructure practices, and to communicate the specific requirements for post-construction control and the associated BMPs laid out within the SWMP;

Note: At the time of the facility audit prior to permit issuance, parties recognized as being impacted by this permit condition included Environmental Project Officers (EPOs), planning staff, Army Corps of Engineers (COE) project officers, and contracting officers.

2.2.4 Within three years from the effective date of this permit, create or adopt age-appropriate educational materials regarding stormwater runoff and water quality

issues for schools;

2.2.5 Provide a stormwater awareness brochure and track its distribution;

2.2.6 Ensure, to the extent feasible, that any new residential lease agreements include terms for occupancy which relate to household waste management, pet policy, lawn watering, petroleum management, fertilizer/pesticide management, and car washing;

2.2.7 Require the housing personnel and residents to receive training on an annual basis to ensure compliance with SWMP, Low Impact Development (LID), requirements specified in the resident guide and why those are in place and other applicable topics;

Note: At the time of the facility audit prior to permit issuance, parties recognized as being impacted by this permit condition included Housing Area Mayors.

2.2.8 At a minimum, produce and disseminate informational material to inform the public and contractors working on site of proper hazardous waste collection processes. These materials should be updated and distributed as necessary throughout the duration of the permit; and

2.2.9 Document education and outreach activities in the SWMP, including documents created for distribution and a training schedule which notes the dates that trainings occurred and the target audiences reached;

2.2.10 The annual report (**See Part 3.3**) must document the following information related to public education and outreach:

2.2.10.1 A description of the methods, frequency, type, and target audience of stormwater outreach performed during the permit term;

2.2.10.2 A copy or representation of public outreach materials provided to the target audience(s);

2.2.10.3 Educational materials, lesson plans, or presentations provided to school age students and other target audience(s) regarding stormwater runoff and water quality issues;

2.2.10.4 An estimation of the number of people expected to be reached by the program over each year of the permit term; and

2.2.10.5 The name or title of the person(s) responsible for coordination and implementation of the stormwater public education and outreach program.

2.3 Public Involvement/Participation. The permittee must:

2.3.1 Comply with applicable State and local public notice requirements when implementing a public involvement/participation program;

2.3.2 Make all relevant Annual Reports available on the permittee web site or provide links to all relevant Annual Reports posted on the EPA Region 8 web site in a locally available publication;

2.3.3 Within two years of the effective date of this permit, and annually thereafter, the permittee help organize and host a community River Clean up Day(s) or similar activity;

2.3.4 Provide volunteer activities as practicable to help actively engage residents and personnel at Fort Carson in understanding water resources and how their activities can affect water quality;

2.3.5 Maintain a log of public participation and outreach activities performed in the permittee's SWMP;

2.3.6 Maintain a copy of the most recent version of the facility SWMP and permit in a publicly accessible format; and

2.3.7 Within six months of the effective date of this permit, and as appropriate thereafter, the Stormwater Program personnel convene at least one meeting with the upper management of Fort Carson to discuss the SWMP and collect comments;

Note: At the time of the facility audit prior to permit issuance, upper management recognized as being impacted by this permit condition included the Environmental Division Chief and the Environmental Compliance Program Manager.

2.3.8 The annual report (**See Part 3.3**) must document the following information related to public involvement/participation:

2.3.8.1 Documentation of any events or other activities to clean up MS4 receiving waters;

2.3.8.2 Documentation of any volunteer activities conducted to help actively engage residents and personnel at Fort Carson in understanding water resources and how their activities can affect water quality; and

2.3.8.3 The name or title of the person(s) responsible for coordination and implementation of the storm water public education and outreach program.

2.4 Illicit Discharge Detection and Elimination. An illicit discharge is any discharge to a municipal separate storm sewer that is not composed entirely of stormwater. Exceptions are described in **Part 1.3.2**. The permittee must:

2.4.1 Implement a program to detect and eliminate illicit discharges into its MS4. The program shall include procedures for detection, identification of sources, and removal of non-stormwater discharges from the storm sewer system. This program shall address illegal dumping into the storm sewer system, and include training for staff on how to respond to reports of illicit discharges;

2.4.2 Effectively prohibit, through ordinance or other regulatory mechanism available under the legal authorities of the MS4, non-stormwater discharges into the storm sewer system and implement appropriate enforcement procedures and actions;

2.4.3 Provide a mechanism for reporting of illicit discharges and provide this number on the Fort Carson stormwater web site and any outreach materials as appropriate;

2.4.4 Analyze spill reports and response summaries generated by Fort Carson response personnel for trends in illicit discharge reports;

2.4.5 Investigate any illicit discharge within fifteen (15) days of its detection, and shall take action to eliminate the source of the discharge within forty five (45) days of its detection (or obtain permission from EPA for such longer periods as may be necessary in particular instances);

2.4.6 Maintain an updated storm sewer system map. At a minimum, the map or system of maps maintained within a Geographic Information System (GIS) shall show jurisdictional boundaries, the location of all inlets and outfalls, names and locations of all waters that receive discharges from those outfalls, locations of post-construction BMPs installed since the effective date of this permit, and locations of all facilities operated by the permittee, including any public or private snow disposal sites. The map shall be available in electronic or digital format as appropriate;

2.4.7 Develop and maintain an Illicit Discharge Detection and Elimination (IDDE) database which tracks dry weather screening efforts and the location and any remediation efforts to address identified illicit discharges;

2.4.8 Conduct dry weather screening annually at each of the major drainages within the cantonment for the presence of non-stormwater discharges. The screening should include field tests of selected chemical parameters as indicators of discharge sources where dry weather flows are detected. Screening level tests may utilize less expensive "field test kits" using test methods not approved by EPA under 40 CFR Part 136, provided the manufacturer's published detection ranges are adequate for the illicit discharge detection purposes. The permittee shall investigate any illicit discharge within fifteen (15) days of its detection, and shall take action to eliminate the source of the discharge within forty five (45) days of its detection;

2.4.9 Address the categories of non-stormwater discharges or flows listed in **Part 1.3.2** and require local controls or conditions on these discharges as necessary to ensure that they are not as significant contributors of pollutants to the small MS4. If the

permittee identifies any of these non-stormwater discharges as a significant contributor of pollutants, the permittee must include the category as an illicit discharge, include the non-stormwater discharge in the list of potential pollutants in the SWMP, and implement a plan of action to minimize or eliminate the illicit discharge as soon as practicable;

2.4.10 Develop a list of other similar occasional incidental non-stormwater discharges (e.g., non-commercial or charity car washes, etc.) that will not be addressed as illicit discharges. These non-stormwater discharges shall not be reasonably expected (based on information available to the permittee) to be significant sources of pollutants to the MS4 because of either the nature of the discharges or conditions the permittee has established for allowing these discharges to the MS4 (e.g., a charity car wash with appropriate controls on frequency, proximity to sensitive waterbodies, BMPs on the wash water, etc.);

2.4.11 Have a household hazardous waste collection day as needed or as practicable, either as a separate Fort Carson activity or in conjunction with nearby civilian jurisdictions;

2.4.12 Continue to stencil storm drains within the cantonment area with approximately 90% of the storm drains stenciled by the end of year four of the permit;

2.4.13 As practicable, update support service contracts (e.g., KIRA) to include maintenance of post-construction BMPs; and

2.4.14 Consider mechanisms for construction site dewatering and the potential need for permit coverage or alternative BMPs during the project review process or within the Fort Carson Stormwater Program's requirements.

2.4.15 The annual report (See **Part 3.3)** must document the following information related to illicit discharge detection and elimination:

2.4.15.1 A description of the program used to detect and eliminate illicit discharges into the MS4s, including procedures for detection, identification of sources, and removal of non-stormwater discharges from the storm sewer system;

2.4.15.2 A description of the location and method of dry weather screening performed;

2.4.15.3 A description of illicit discharges located and all actions taken to eliminate sources of illicit discharges;

2.4.15.4 A description of training materials used and the frequency at which training was provided to the target audience(s) on how to respond to reports of illicit discharges;

2.4.15.5 A description or citation of the established ordinance or other regulatory mechanism used to prohibit illicit discharges into the MS4;

2.4.15.6 A copy or excerpt from the information management system used to track illicit discharges;

2.4.15.7 A description of the categories of non-stormwater discharges evaluated as potentially being significant contributors of pollutants to the MS4 and any local controls placed on these discharges;

2.4.15.8 A description of occasional incidental non-stormwater discharges (See **Part 2.4.10**) and any controls placed on these discharges;

2.4.15.9 A description of hazardous waste collection events and summary data which generally covers what was collected; and

2.4.15.10 An inventory of industrial facilities that discharge into the permittee's MS4 or to waters of the United States within Fort Carson. The types of industrial activities that must be inventoried are set forth in 40 CFR §122.26(b)(14)(i) through (xi). This inventory must include the location of the activity, the location of its outfall and corresponding receiving water, and the NPDES permit status for its stormwater discharge.

2.5 Construction Site Stormwater Runoff Control. The permittee must:

2.5.1 Provide adequate direction or education to ensure that "representatives" of "regulated construction activities" obtain permit coverage under the NPDES General Permit for Stormwater Discharges for Construction Activity in Colorado, COR10000F (Construction General Permit). "Representatives" include entities engaging in "regulated construction activities" on Fort Carson including, but not necessarily limited to, contractors administered by the Directorate of Contracting, Fort Carson; the Army COE; the Army and Air Force Exchange System; Fort Carson Family Housing, LLC; and the Defense Commissary Agency. For the purposes of this permit, "regulated construction activities" include development and re-development that results in a land disturbance of greater than or equal to one acre or disturbs less than one acre if the development or redevelopment is part of a larger common plan of development or sale that would disturb one acre or more. If EPA waives the permit requirements for storm water discharges associated with a specific small construction activity (i.e., a single project) in accordance with §122.26(b)(15)(i)(A) or (B), the permittee is not required to develop, implement, and/or enforce a program to reduce pollutant discharges from that particular site;

2.5.2 Use an ordinance or other regulatory mechanism available under the legal authorities of Fort Carson to require erosion and sediment controls and sanctions to ensure compliance with the terms of the NPDES General Permit for Stormwater Discharges

for Construction Activity in Colorado, COR10000F (Construction General Permit);

2.5.3 Maintain a list of policies and procedures which can be used to enforce construction site compliance within Fort Carson independent of EPA staff directly enforcing the CGP;

2.5.4 Implement procedures for site plan review which incorporate consideration of potential water quality impacts;

2.5.5 Implement procedures for receipt and consideration of information, including complaints of construction site non-compliance, submitted by the public;

2.5.6 Review the Scope of Work for Fort Carson projects, in order to ensure compliance with SWMP specifications for construction BMPs;

2.5.7 Pursue methods for Fort Carson staff to stop work on construction sites in non-compliance independent of contracting procedures;

2.5.8 Implement an inspection plan and keep a copy of that plan in the SWMP which provides inspection triggers, a priority for order of inspections, and a required timeframe upon which construction sites must be inspected by Fort Carson staff. All sites within this plan must be inspected at a minimum quarterly;

2.5.9 Provide, as practicable, review to address construction site dewatering BMPs and available land prior to awarding construction contracts;

2.5.10 Maintain a site inspection form in the SWMP for use by Fort Carson stormwater managers at sites;

2.5.11 Provide, as practicable, herbicide/pesticide applicators with the opportunity to comment during the design review process for new construction projects to deal with returning vegetation to pre-construction conditions and eliminating weeds through intelligent design;

2.5.12 Evaluate annually inspections performed by representatives of Fort Carson staff (other than the Fort Carson Stormwater Program personnel) to ensure that inspection criteria being inspected by these representatives are consistent with those noted in the inspection criteria provided in the inspection form in the SWMP;

2.5.13 Include language in Requests For Proposal (RFPs) for new construction projects which requires compliance with the SWMP;

2.5.14 Maintain a list of construction site BMPs in the SWMP with criteria for maintenance and installation; and

2.5.15 Maintain and utilize a Notice of Termination (NOT) form for Fort Carson independent of the CGP NOT form and have Fort Carson stormwater staff inspect all construction sites prior to termination to ensure that 70% vegetative cover has been met at all areas of the site.

2.5.16 The annual report (See **Part 3.3)** must document the following information related to construction site stormwater runoff control:

2.5.16.1 A description of "regulated construction activities" which occurred at Fort Carson during the term of this permit;

2.5.16.2 A description or citation of the established ordinance or other regulatory mechanism used to require erosion and sediment controls;

2.5.16.3 A description of the sanctions and enforcement mechanisms Fort Carson uses to ensure that all "regulated construction activities" are in compliance with the terms of the Construction General Permit. This should include a description of any methods developed for Fort Carson staff to stop work on construction sites in non-compliance independent of contracting procedures;

2.5.16.4 A description of the procedures for site plan review, including the review of pre-construction site plans, which incorporate consideration of potential water quality impacts and applicable contract language;

2.5.16.5 A description of the procedures for receipt and consideration of information submitted by the public;

2.5.16.6 A description of the procedures for site inspection, including how sites will be prioritized for inspection, including documentation of the frequency of site inspections and methods for prioritizing site inspections; and

2.5.16.7 The name or title of the person(s) responsible for coordination and implementation of the construction site runoff control program.

2.6 Post-construction Stormwater Management for New Development and Redevelopment. The permittee must:

2.6.1 Starting the first day of the reissued permit, coordinate NEPA review procedures and review contracts to ensure that no projects shall be made available for bidding without procedures, best management practices, and costs provided to ensure that runoff from newly developed or re-developed impervious surfaces equal to or greater than one acre meets pre-development hydrology as defined by the watershed modeling process outlined in the SWMP;

2.6.2 Use an ordinance or other regulatory mechanism to require the installation and maintenance of post-construction stormwater controls;

2.6.3 Implement a program which ensures the adequate long-term operation and maintenance of post-construction BMPs;

2.6.4 Review Department of Defense (DoD) Form 1391 Military Construction Project Data Sheets prior to submittal by the COE to ensure that all new construction projects funded with Military Construction appropriations (MILCON) disturbing one acre or more are designed and provide sufficient funds to ensure pre-development hydrology can be attained from newly developed impervious surfaces utilizing the watershed modeling process outlined in the SWMP or another equivalent process;

2.6.5 Ensure, to the maximum extent possible, that a line item is included in every new proposal (e.g., DoD Form 1391) for new development to ensure that post-construction stormwater requirements are met. This should include a line item for cost for post-construction BMPs based on cost estimates noted in the SWMP along with a specific performance specification (i.e., maintaining pre-development hydrology) or BMP specification which ensures that all new projects disturbing one acre or more are designed to maintain pre-development hydrology as defined by the process referenced in the SWMP and validated through the XP SWMM hydrologic subwatershed modeling process or another equivalent process;

2.6.6 Where practicable, include training for COE (local/Omaha District) and architect engineers (AEs) working on design-build projects related to post-construction stormwater controls, LID, and SWMP at Fort Carson;

2.6.7 Utilize the Fort Carson Notice of Termination (NOT) form so that construction site operators provide maintenance specifications for post-construction BMPs to Fort Carson prior to receiving authorization from stormwater managers to submit a NOT form to discontinue coverage under the CGP;

2.6.8 Review the Scope of Work for DPW projects to ensure compliance with SWMP specifications for post-construction BMPs. All statements of work for DPW projects disturbing one acre or more must be designed to ensure pre-development hydrology from newly developed impervious surfaces as defined by the watershed modeling process outlined in the SWMP;

2.6.9 As part of the NEPA process for new construction projects disturbing equal to or greater than one acre, review all projects to ensure that they meet pre-development hydrology as defined by the watershed modeling or similar process outlined in the SWMP;

2.6.10 Ensure that all new post-construction BMPs are tracked and georeferenced in a data management system that includes maintenance requirements and schedules for post-

construction BMPs;

2.6.11 By the end of year 3 of the permit term, complete watershed modeling or similar assessment efforts for the four zones recognized in the SWMP such that post-construction BMPs can be both recommended and evaluated within the context of each of the four separate sub-watersheds;

2.6.12 Consider a one-year review coinciding with the 1-year warranty provided in contracts to ensure functioning of post-construction BMPs. There could also be a ½ year inspection for post-construction stormwater BMPs as part of the file inspection for contracts. File inspection could also include targeted outreach to the end user; and

2.6.13 By the end of year 4 of the permit term, provide the appropriate Fort Carson staff with training regarding the design and purpose for post-construction stormwater controls.

Note: At the time of the facility audit prior to permit issuance, parties recognized as being impacted by this permit condition included Environmental Compliance and Assessment Team (ECAT) inspectors.

2.6.14 The annual report (See **Part 3.3)** must document the following information related to construction site stormwater runoff control:

2.6.14.1 A description of the program to ensure that the pre-development hydrology is met for new development and re-development projects as required in **Part 2.6.1** and the mechanism used to review the adequacy of post-construction BMPs;

2.6.14.2 A description of the ordinance or other regulatory ordinance used to require the installation and maintenance of post-construction stormwater controls;

2.6.14.3 A description of the program which ensures the long-term operation and maintenance of post-construction BMPs, including an excerpt from any data management system that includes maintenance requirements and schedules for post-construction BMPs installed during the year;

2.6.14.4 A description of the process used to ensure that all Fort Carson and COE contracts initiated after the effective date of the permit contain language which requires the installation of post-construction stormwater controls and an excerpt of applicable contract language; and

2.6.14.5 The name or title of the person(s) responsible for coordination and implementation of the post-construction stormwater management program.

2.7 Pollution Prevention and Good Housekeeping for Municipal Operations. The permittee must:

2.7.1 Not later than four years from the effective date of this permit, evaluate existing street cleaning operations, catch basin cleaning operations, and street sanding/salt/deicing/anti-icing practices occurring within its jurisdiction to minimize any negative impacts to water quality. This evaluation must also examine the existing practices for the disposal of waste and maintenance operations. This evaluation must identify any actions or improvements necessary to minimize negative impacts on water quality, and timelines for incorporating such actions or improvements;

2.7.2 Provide annual training for public education and outreach for facility maintenance contracted companies, EPOs, and other people identified as having fleet maintenance activities in line with the SWMP. Each of the categories of municipal activities referenced in the SWMP should receive stormwater training;

2.7.3 Consider deicing training if available to minimize the use of and runoff from chemical deicers and traction aggregates;

2.7.4 Develop and implement a schedule for cleanout of storm sewer inlets in a manner which prevents significant deposition of sediment or other debris to receiving waters and provide data or a description of this schedule and its implementation in the SWMP for the facility;

2.7.5 Consider adding a stormwater module to “Assessment Manager” for ECAT inspections;

2.7.6 Develop and implement a schedule for sweeping streets in a manner which prevents significant deposition of sediment or other debris to receiving waters and provide data or a description of this schedule and its implementation in the SWMP for the facility; and

2.7.7 Consider the need for and application of cover to prevent airborne deposition of particulates from storage piles at the municipal materials storage yard.

2.7.8 The annual report (See **Part 3.3**) must document the following information related to pollution prevention and good housekeeping for municipal operations:

2.7.8.1 A description of the operation and maintenance program intended to prevent or reduce pollutant runoff from municipal operations including a list of each of the activities evaluated under this program and a description of the controls for reducing or eliminating the discharge of pollutants from streets, roads, highways, parking lots, maintenance and storage yards, waste transfer stations, fleet or maintenance shops with outdoor storage areas, snow disposal areas, and salt/sand storage locations;

2.7.8.2 A description of the contents and frequency of the training program (see **Part 2.7.2**) for municipal personnel and a list of the personnel or positions trained

during the term of the permit; and

2.7.8.3 A description of the evaluation performed on the street cleaning operations, catch basin cleaning operations, and street sanding/salt practices and any measures taken as a result of the evaluation to minimize negative impacts to water quality.

Part 3. Monitoring, Recordkeeping and Reporting

3.1 Monitoring

3.1.1 Not later than three years from the effective date of this permit, the permittee must develop a program to evaluate the water quality in B-Ditch, Clover Ditch, the Central Unnamed Ditch, and Rock Creek B-Ditch, as it enters Fort Carson and leaves Fort Carson. This program shall at a minimum include evaluations of streambank stabilization, and water quality.

3.1.2 The water quality monitoring program may include indicators such as chemical monitoring, assessment of macroinvertebrates or other aquatic life, or watershed assessment of river stability and sediment supply, provided that the monitoring program provides meaningful data to evaluate the effectiveness of the stormwater management program. The permittee is responsible for evaluating data for analysis of trends.

3.1.3 The water quality monitoring program description must be sent to EPA with the Annual Report for year 3 of this permit term. Programs will be assessed by the water quality monitoring coordinator for EPA Region 8 to determine whether the program meets the goals of this permit and whether the data is being collected and reported in compliance with EPA test procedures approved under 40 CFR Part 136.

3.2 Recordkeeping

3.2.1 The permittee must retain records of all monitoring information, including, all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, copies of Discharge Monitoring Reports (DMRs), a copy of the NPDES permit, and records of all data used to complete the application for this permit for a period of at least three years from the date of the sample, measurement, report or application, or for the term of this permit, whichever is longer. This period may be extended by request of the EPA at any time.

3.2.2 The permittee must submit the records referred to in **Part 3.2.1** to EPA only when specifically asked to do so. The permittee must retain a description of the SWMP required by this permit (including a copy of the permit language) at a location accessible to the EPA. The permittee must make records, including the application and the description of the SWMP, available to the public if requested to do so in

writing.

3.3 Annual Reports

The permittee must submit an annual report to EPA for each year of the permit term. The first report is due April 1, 2010, and must cover the activities during the period beginning on the effective date of the permit through December 31, 2009. Each subsequent annual report is due on April 1 of each year following 2009 for the remainder of the permit term. Reports must be signed in accordance with the signatory requirements in **Part 4.7**. Reports may be posted on the EPA Region 8 web site. Therefore, parts of the annual report which cannot be publicly available should be marked as "confidential" or "for official use only." Reports must be submitted to EPA at the following address:

Stormwater Coordinator (8P-W-WW)
Small MS4 Annual Report
US EPA Region 8
1595 Wynkoop Street
Denver, CO 80202-1129

Part 4. Standard Permit Conditions

4.1 Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of CWA and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

4.1.1 *Criminal Violations.*

4.1.1.1 *Negligent Violations*. The CWA provides that any person who *negligently* violates permit conditions implementing section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than 1 year, or both. In the case of a second, or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than 2 years, or both.

4.1.1.2 *Knowing Violations*. The CWA provides that any person who *knowingly* violates permit conditions implementing section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act,

is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both. In the case of a second, or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or by imprisonment of not more than 6 years, or both.

4.1.1.3 *Knowing Endangerment*. The CWA provides that any person who *knowingly* violates permit conditions implementing section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury shall, upon conviction be subject to a fine not more than $250,000 or by imprisonment for not more than 15 years, or both. In the case of a second, or subsequent conviction for a knowing endangerment violation, a person shall be subject to criminal penalties of not more than $500,000 per day of violation, or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

4.1.1.4 *False Statement.* The CWA provides that any person who knowingly makes any false material statement, representation, or certification in any application, record, report, plan, or other document filed or required to be maintained under the Act or who knowingly falsifies, tampers with, or renders inaccurate, any monitoring device or method required to be maintained under the Act, shall upon conviction, be punished by a fine of not more than $10,000 or by imprisonment for not more than two years, or by both. If a conviction is for a violation committed after a first conviction of such person under this paragraph, punishment shall be by a fine of not more than $20,000 per day of violation, or by imprisonment of not more than four years, or by both. (See section 309(c)(4) of the Clean Water Act).

4.1.2 *Civil Penalties.*

The CWA provides that any person who violates a permit condition implementing section 301, 302, 306, 307, 308, 318, or 405 of the Act or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act is subject to a civil penalty not to exceed $27,500 per day for each violation.

4.1.3 *Administrative Penalties.*

The CWA provides that any person who violates a permit condition implementing section 301, 302, 306, 307, 308, 318, or 405 of the Act or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act is subject to an administrative penalty as follows:

4.1.3.1 *Class I penalty*. Not to exceed $11,000 per violation nor shall the maximum amount exceed $27,500.

4.1.3.2 *Class II penalty*. Not to exceed $11,000 per day for each day during which violation continues nor shall the maximum amount exceed $137,500.

4.2 Continuation of the Expired Permit

If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with the Administrative Procedure Act (5 U.S.C. §551 et seq.), and remain in force and effect. Any permittee who was granted permit coverage prior to the expiration date will automatically remain covered by the continued permit until the earliest of:

4.2.1 Reissuance or replacement of this permit, at which time the permittee must comply with the conditions of the new permit to maintain authorization to discharge; or

4.3.2 Issuance of a general permit for the discharges; or

4.3.3 A formal permit decision by the EPA not to reissue this permit, at which time the permittee must seek coverage under an alternative permit.

4.3 Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4.4 Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

4.5 Duty to Provide Information

The permittee shall furnish to the EPA, within a reasonable time, any information which the EPA may request to determine whether cause exists for modifying, revoking and

reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the EPA, upon request, copies of records required to be kept by this permit.

4.6 Other Information

If the permittee becomes aware that the permittee has failed to submit any relevant facts in the Notice of Intent or submitted incorrect information in the Notice of Intent, or in any other report to the EPA, the permittee must promptly submit such facts or information.

4.7 Signatory Requirements

All Notices of Intent, Notices of Termination, reports, certifications, or information submitted to the EPA, or that this permit requires be maintained by the permittee, shall be signed and certified as follows:

4.7.1 *Notices of Intent*. All Notices of Intent/Termination shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes: (1) the chief executive officer of the agency, or (2) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

4.7.2 *Reports and other information.* All reports required by the permit and other information requested by the EPA or authorized representative of the EPA shall be signed by a person described in **Part 5.7.1** or by a duly authorized representative of that person. A person is a duly authorized representative only if:

4.7.2.1 The authorization is made in writing by a person described in **Part 5.7.1** and submitted to the EPA; and

4.7.2.2 The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated activity, such as the position of manager, operator, superintendent, or position of equivalent responsibility for environmental matter for the regulated entity.

4.7.3 *Changes to authorization*. If an authorization under **Part 4.7.2** is no longer accurate because a different individual or position has responsibility for the overall operation of the MS4, a new authorization satisfying the requirements of **Part 5.7.2** must be submitted to the EPA prior to or together with any reports, information, or notices of intent to be signed by an authorized representative.

4.7.4 *Certification*. Any person signing a document under **Parts 4.7.1 or 4.7.2** shall make the following certification: “I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a

system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

4.8 Property Rights

The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations

4.9 Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit and with the conditions of the permittee's storm water management program. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems, installed by the permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

4.10 Inspection and Entry

The permittee shall allow the EPA or an authorized representative (including an authorized contractor acting as a representative of the Administrator) upon the presentation of credentials and other documents as may be required by law, to:

4.10.1 Enter upon the permittee's premises where a regulated activity is located or conducted or where records must be kept under the conditions of this permit;

4.10.2 Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

4.10.3 Inspect at reasonable times, any facilities or equipment (including monitoring and control equipment) practices, or operations regulated or required under this permit; and

4.10.4 Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA, any substances or parameters at any location.

4.11 Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

4.12 Permit Transfers

This permit is not transferable to any person except after notice to the EPA. The EPA may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Act.

4.13 Anticipated Noncompliance

The permittee shall give advance notice to the EPA of any planned changes in the permitted small MS4 or activity which may result in noncompliance with permit conditions.

4.14 State/Tribal Environmental Laws

4.14.1 Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State/Tribal law or regulation under authority preserved by section 510 of the Act.

4.14.2 No condition of this permit releases the permittee from any responsibility or requirements under other environmental statutes or regulations.

4.15 Severability

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

4.16 Procedures for Modification or Revocation

Permit modification or revocation will be conducted according to 40 CFR 122.62, 122.63, 122.64 and 124.5.

Part 5. Definitions

All definitions contained in Section 502 of the Act and 40 CFR 122 shall apply to this permit and are incorporated herein by reference. For convenience, simplified

explanations of some regulatory/statutory definitions have been provided but, in the event of a conflict, the definition found in the Statute or Regulation takes precedence.

5.1 *Best Management Practices (BMPs)* means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

5.2 *Control Measure* as used in this permit, refers to any Best Management Practice or other method used to prevent or reduce the discharge of pollutants to waters of the United States.

5.3 *CWA or The Act* means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub.L. 92-500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483 and Pub. L. 97-117, 33 U.S.C. 1251 et.seq.

5.4 *Discharge*, when used without a qualifier, refers to “discharge of a pollutant” as defined at 40 CFR 122.2.

5.5 *Discharge-related Activities* include: activities which cause, contribute to, or result in storm water point source pollutant discharges and measures to control storm water discharges, including the siting, construction, and operation of best management practices to control, reduce or prevent storm water pollution.

5.6 *EPA* means the EPA Regional Administrator or an authorized representative.

5.7 *Illicit Connection* means any man-made conveyance connecting an illicit discharge directly to a municipal separate storm sewer.

5.8 *Illicit Discharge* is defined at 40 CFR 122.26(b)(2) and refers to any discharge to a municipal separate storm sewer that is not entirely composed of storm water, except discharges authorized under an NPDES permit (other than the NPDES permit for discharges from the MS4) and discharges resulting from fire fighting activities.

5.9 *MEP* means "maximum extent practicable," the technology-based discharge standard for municipal separate storm sewer systems to reduce pollutants in storm water discharges that was established by CWA §402(p). A discussion of MEP as it applies to small MS4s is found at 40 CFR 122.34.

5.10 *Measurable Goal* means a quantitative measure of progress in implementing a component of a storm water management program.

5.11 *MS4* means "municipal separate storm sewer system" and is used to refer to either a Large, Medium, or Small Municipal Separate Storm Sewer System. The term, as used

within the context of this permit, refers to small MS4s (see definition below) and includes systems operated by a a variety of public entities (e.g., military facilities, prisons, and systems operated by other levels of government).

5.12 *Municipal Separate Storm Sewer* means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States; (ii) Designed or used for collecting or conveying storm water; (iii) Which is not a combined sewer; and (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

5.13 *NOI* means Notice of Intent to be covered by this permit (see Part 2.3) and is the mechanism used to apply for coverage under this general permit.

5.14 *NOT* means Notice of Termination.

5.15 *Outfall* means a point source (defined below) at the point where a municipal separate storm sewer discharges to waters of the United States and does not include open conveyances connecting two municipal separate storm sewers or pipes, tunnels, or other conveyances which connect segments of the same stream or other waters of the United States and are used to convey waters of the United States.

5.16 *Point Source* means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

5.17 *Small Municipal Separate Storm Sewer System* is defined at 40 CFR 122.26(b)(16) and refers to all separate storm sewers that are owned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States, but is not defined as “large”' or “medium” municipal separate storm sewer system. This term includes systems similar to separate storm sewer systems in municipalities such as systems at military bases, large hospital or prison complexes, and

highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas such as individual buildings.

5.18 *Stormwater* is defined at 40 CFR 122.26(b)(13) and means storm water runoff, snow melt runoff, and surface runoff and drainage.

5.19 *Storm Water Management Program (SWMP)* refers to a comprehensive program to manage the quality of storm water discharged from the municipal separate storm sewer system.

APPENDIX F

Aesthetic Photos

Ft Carson desires for the Facility to relate in appearance to the facilities shown below.

The design-builder is not required to match materials, i.e. brick exterior and standing-seam metal roof.

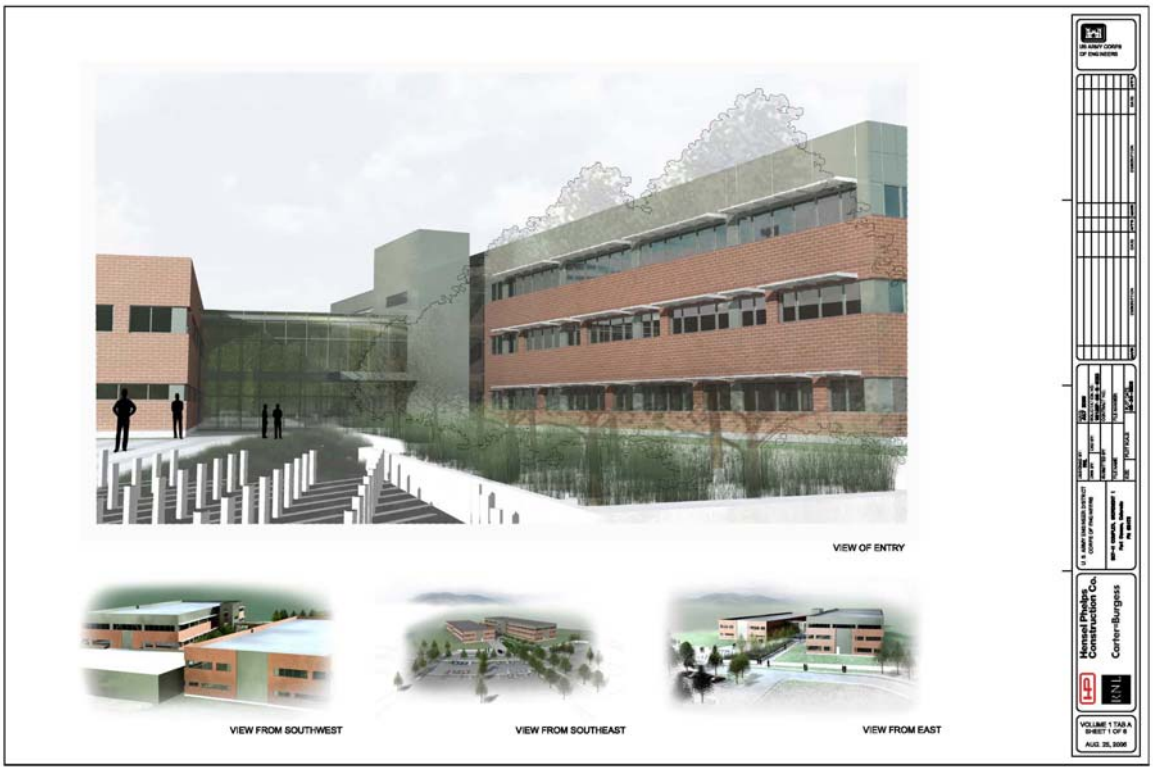


Image 1 – BCT-H Complex – Brigade Battalion Headquarters

Image 2 – BCT-H Complex – Company Operations Facility

Image 3 – BCT-H Complex – Company Operations Facility

Image 4 – BCT-H Complex – Tactical Equipment Maintenance Facility and Company Operations Facility

Image 5 – BCT-H Complex – Tactical Equipment Maintenance Facility and Company Operations Facility

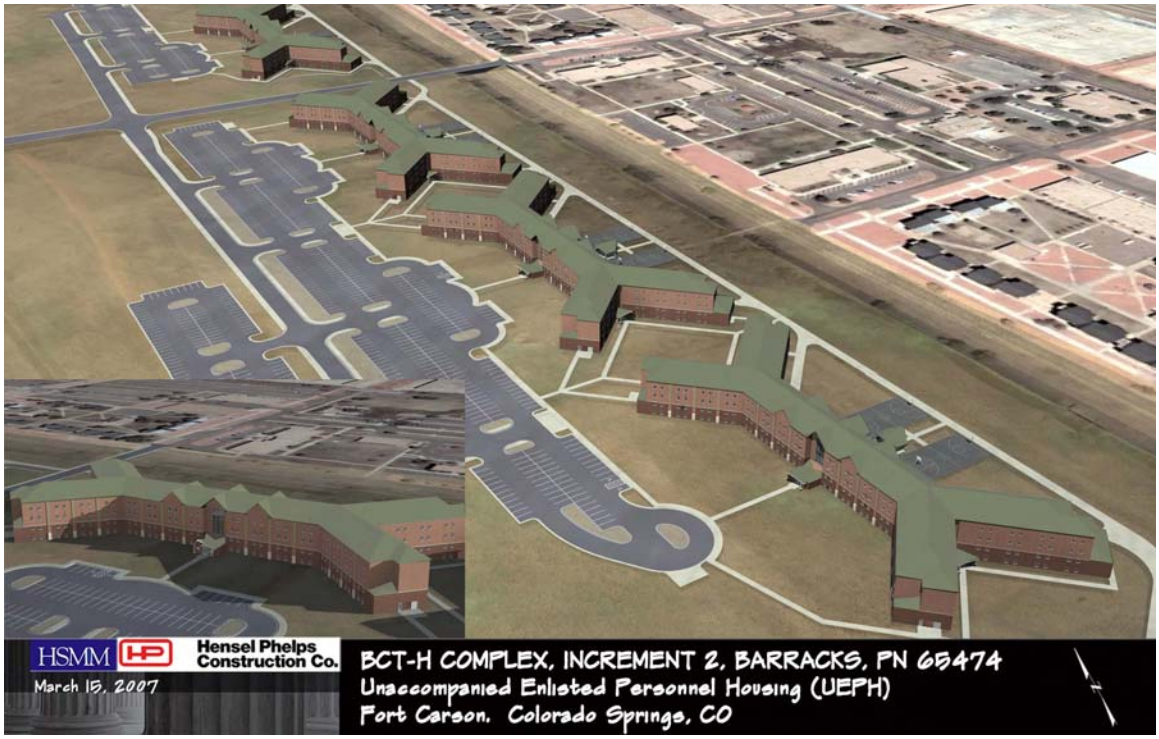


Image 6 – BCT-H Complex – Barracks

Image 7 – Barracks

Image 8 – Barracks

Image 9 – Barracks

Image 10 – Company Operations Facility

Image 11 – Company Operations Facility

Image 12 – Company Operations Facility

Image 13 – Dining Facility

Image 14 – Dining Facility

Image 15 – Reserve Center

Image 16 – Reserve Center

Image 17 – Closed Combat Tactical Training Facility

Image 18 – Closed Combat Tactical Training Facility

Image 19 – EN Battalion South - TEMF

Image 20 – EN Battalion South - TEMF

APPENDIX G
GIS Data

Not Used

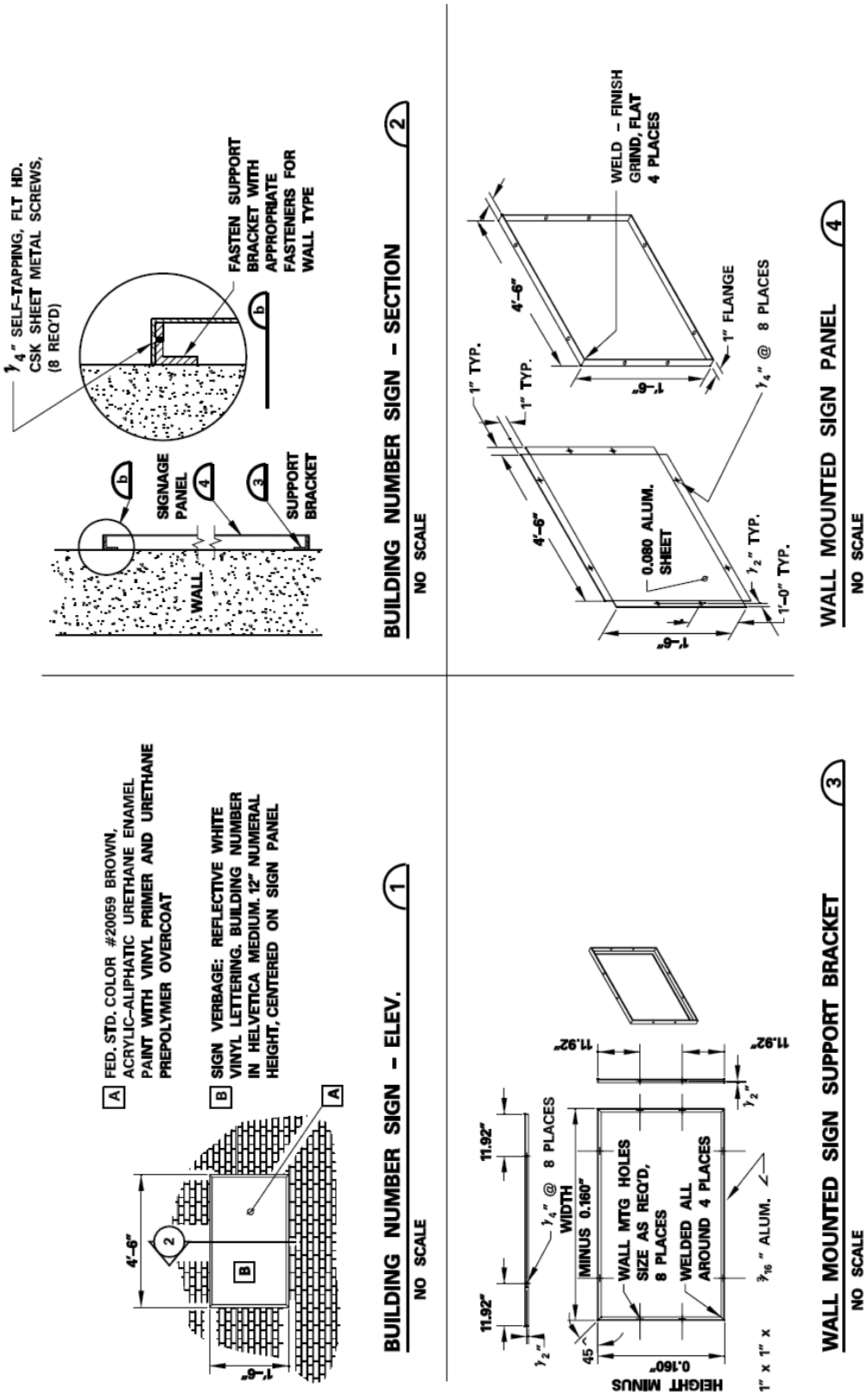
APPENDIX H

Exterior Signage

Building number signage shall be provided as detailed on the attached drawing. Building number signage shall be 1'-6" high by 4'-6" in length. Building signage shall be constructed and mounted on the buildings as detailed on the attached drawing. 2 building number signs shall be provide for each Building. Generally the building number signage shall be located on the street side corners of each building, with a bottom elevation of 8'-0" above the finished first floor elevation. Specific building numbers, mounting locations and sign color shall be fully coordinated with Fort Carson DPW, in coordination with the Contracting Officer, during design.

Also, provide a sign on the exterior side of the mechanical room door that states "In Case of Emergency Call DPW Work Desk at 526-5346". Coordinate sign size, font, material, installation method, etc. with DPW Office. Verify accuracy of telephone number with the COR prior to fabrication of sign. Sign construction to be intended for exterior installation.

Provide a No Smoking sign as indicated in paragraph 5.1 for the exterior of the building, Sign verbiage and location as indicated by the contracting officer.


A FED. STD. COLOR #20059 BROWN, ACRYLIC–ALIPHATIC URETHANE ENAMEL PAINT WITH VINYL PRIMER AND URETHANE PREPOLYMER OVERCOAT
B SIGN VERBAGE: REFLECTIVE WHITE VINYL LETTERING. BUILDING NUMBER IN HELVETICA MEDIUM. 12" NUMERAL HEIGHT, CENTERED ON SIGN PANEL
4'-6"
1'-6"
BUILDING NUMBER SIGN – ELEV. 1
NO SCALE
1/4" SELF-TAPPING, FLT HD. CSK SHEET METAL SCREWS, (8 REQ'D)
FASTEN SUPPORT BRACKET WITH APPROPRIATE FASTENERS FOR WALL TYPE
SIGNAGE PANEL
SUPPORT BRACKET
WALL
BUILDING NUMBER SIGN – SECTION 2
NO SCALE
WELD – FINISH GRIND, FLAT 4 PLACES
1" TYP.
4'-6"
1'-6"
1" FLANGE
1/4" @ 8 PLACES
0.080 ALUM. SHEET
1/2" TYP.
1'-0" TYP.
WALL MOUNTED SIGN PANEL 4
NO SCALE
11.92"
1/4" @ 8 PLACES
WIDTH MINUS 0.160"
WALL MTG HOLES SIZE AS REQ'D, 8 PLACES
WELDED ALL AROUND 4 PLACES
3/16" ALUM.
1/2"
45
HEIGHT MINUS 0.160"
1" x 1" x
WALL MOUNTED SIGN SUPPORT BRACKET 3
NO SCALE

Fort Carson, Colorado

APPENDIX I

ACCEPTABLE PLANTS LIST
(Sept 30, 2010)

Botanical Name	Common Name
Large Deciduous Trees	
Fraxinus pennsylvanica ‘Marshall Seedless’	Marshall Seedless Green Ash
Fraxinus americana ‘Autumn Purple’	Autumn Purple Ash
Tilia americana ‘Redmond’	Redmond Linden
Tilia americana ‘Littleleaf’’	Littleleaf Linden
Gleditsia triacanthos inermis ‘Shademaster’	Thornless Honeylocust or Sunburst
Catalpa speciosa	Western Catalpa
Gymnocladus dioicus	Kentucky Coffee Tree
Quercus macrocarpa	Burr Oak
Celtis occidentalis	Hackberry
Ornamental Deciduous Trees	
Malus hybrids	Crabapples: Indian Magic, Spring Snow, Radiant, Dolgo
Acer ginnala	Amur Maple
Acer grandidentatum	Rocky Mtn. Glow Maple (Big Tooth Maple)
Acer grandidentatum	Wasatch maple
Crataegus crusgalli	Cockspur Hawthorne
Crataegus phaenopyrum	Washington Hawthorne
Crataegus ambigua	Russian Hawthorne
Prunus virginiana ‘Shubert’	Canada Red Chokecherry
Koelreuteria paniculata	Golden Raintree
Quercus gambelii	Gambel Oak
Pyrus calleryana	Chanticleer Pear
Evergreen Trees	
Pinus ponderosa	Ponderosa Pine
Pinus edulis	Pinyon Pine
Pinus nigra	Austrian Pine
Pinus strobiformis	Southwestern Pine
Pinus flexilis	Limber Pine
Picea pungens glauca	Colorado Blue Spruce
Picea pungens	Colorado Green Spruce
Abies concolor	White Fir
Pinaceae pseudotsuga menziesii	Douglas Fir
Evergreen Shrubs	
Juniperus horizontalis ‘Blue Chip’	Blue Chip Creeping Juniper
Juniperus horizontalis ‘Bar Harbor’	Bar Harbor Creeping Juniper
Juniperus horizontalis ‘Wiltonii’	Wiltoni Prostrate Juniper

Fort Carson, Colorado

Juniperus sabina 'Broadmoor'	Broadmoor Juniper
Juniperus chinensis	Gold Coast
Juniperus sabina 'Tamariscifolia'	Tammy Juniper
Juniperus chinensis 'Spartan'	Spartan Pyramidal Chinese Juniper
Juniperus scopulorum 'Cologreen'	Cologreen Rocky Mountain Juniper
Juniperus monosperma	One seed Juniper
Cytisus purgans	Spanish Gold Hardy Broom
Ephedra equisetina	Bluestem Joint Fir
Cercocarpos montanus	Mountain Mahogany

Small Deciduous Shrubs

Spiraea bumalda hybrids	Anthony Waterer, Froebel, Daphne, Little Princess, Neon Flash
Holodiscus dumosus	Rock Spirea
Potentilla fruticosa hybrids	Dakota Sunrise, Prairie Snow, Jackmanii, McKay's White, Mt. Everest Goldstart, Gold Drop
Philadelphus x	Mockorange
Atriplex canescens	Fourwing Saltbush
Amorpha cancscens	Leadplant
Prunus besseyi	Western Sandcherry Pawnee Buttes
Chrysothamnus nauseosus	Rabbitbrush Dwarf Blue

Medium Deciduous Shrubs

Caryopteris sp x clandonensis	Blue Mist Spirea, Dark Knight or Longwood Blue
Chamaebatiaria millifolium	Fernbush
Viburnum trilobum 'Compactum'	Compact European Cranberry Bush
Rhus trilobata	Three-Leaf Sumac
Prunus besseyi	Western Sand Cherry
Perovskia hybrids	Russian Sage
Cotoneaster lucidus	Hedge Cotoneaster
Berberis spp.	Barberry

Large Deciduous Shrubs

Forestiera neomexicana	New Mexico Privet
Syringa vulgaris	Common Lilac
Viburnum lantana	Wayfaring Tree
Viburnum opulus	European Cranberry Bush
Viburnum x rhytidophylloides ' Alleghany'	Alleghany Viburnum
Viburnum trilobum	American Cranberry Bush

Ornamental Grasses, Perennials, and Ground Covers

Sporobolus wrightii	Giant Sacaton Grass
Sorghastrum nutans	Indiangrass
Schizachyrium scoparium	Little Bluestem
Andropogon gerardi	Big Bluestem
Festuca x 'Elijah Blue'	Elijah Blue Fescue

Fort Carson, Colorado

Pennisetum alopecuroides ‘Hamelin’	Dwarf Fountain Grass ‘Hamelin’
Panicum virgatum	Switchgrass
Hemerocallis sp ‘Stella D’Oro’	Stella D’Oro Daylily
Vinca minor	Dwarf Periwinkle
Sedum spurium varieties	Stonecrop
Calamagrostic x acutifolia ‘Karl Foerster’	Feather Reed Grass ‘Karl Foerster’
Pennisetum setaceum ‘Purple Fountain Grass’	Purple Fountain Grass

Notes: A comprehensive list of perennials is available from DPW.

Bio-retention Area Plants

Salix amygdaloides	Peach Leaf Willow
Populus angustifolia	Narrow Leaf Cottonwood
Populus deltoides ssp.monilitera	Plains Cottonwood
Salix fragilis	Crack Willow
Acer negundo	Boxelder
Betula occidentalis	Water Birch
Betula nana	Bog Birch
Physocarpus monogynus	Small Ninebark
Cornus sericea	Redosier Dogwood
Salix exigua	Coyote Willow
Prunus virginiana	Chokecherry
Ribes odoratum	Golden Currant
Sarcobatus vermiculatus	Greasewood
Rosa woodsii	Wood’s Rose
Panicum virgatum	Switchgrass
Iris missouriensis	Rocky Mountain Iris
Carex bebbii	Bebb’s Sedge
Elymus glaucus	Blue Wildrye
Elymus canadensis	Canada Wildrye
Panicum virgatum	Switch Grass
Andropogon gerardii	Big Bluestem
Agropyron trachycaulum	Slender Wheatgrass
Agropyron riparium	Streambank Wheatgrass
Agropyron smithii	Western Wheatgrass
Sporobolus airoides	Alkali Sacaton
Carex lanuginosa	Woolly Sedge
Asclepias incarnata	Marsh Milkweed
Helianthus nuttallii	Marsh Sunflower
Vicia americana	American Vetch
Carex nebrascensis	Nebraska Sedge
Eleocharis palustris	Creeping Spikerush
Sporobolus heterlepsis	Prairie Dropseed
Schizachyrium scoparium	Little Bluestem
Distichlis stricta	Inland Saltgrass
Juncus torreyi	Torrey’s Rush
Juncus balticus	Baltic Rush
Ribes montigenum	Gooseberry
Potentills fruticosa	Bush Cinquefoil
Andropogan hallii ‘Garden’	Sand Bluestem
Bouteloua curtipendula ‘Butte’	Sideoats Grama
Calamovilfa longifolia ‘Goshen’	Prairie Sandreed
Oryzopsis hymenoides	Indian Ricegrass
Sporobolus cryptandrus	Sand Dropseed
Artemisia frigida	Pasture Sage

Fort Carson, Colorado

Aster laevis	Blue Aster
Gaillardia aristata	Blanket Flower
Ratibida columnifera	Prairie Coneflower
Dalea Petalostemum purpurea	Purple Prairieclover

Grass Seed Mixture "A" (Buffalo/Blue Grama Mixture)

Seed Type	Variety	Percent of Mix *	lbs /1,000 S.F.
Buffalograss	Cody Primed w/ KNO3	28.0	4.0
Blue Grama	Alma, Hachita	72.0	0.5
		Total = 4.5 lbs/1,000 S.F.	

Grass Seed Mixture "B" (Field Grass Mixture)

Seed Type	Variety	Percent of Mix*	lbs PLS/Acre**
Western Wheatgrass	Arriba, Rosana	20.0	3.5
Crested Wheatgrass	Road Crest, Ephraim	15.0	2.6
Streambank Wheatgrass	Sodar	15.0	2.6
Blue Grama	Alma	20.0	3.5
Sideoats Grama	Pierre, El Reno, Vaughn	20.0	3.5
Sheep Fescue	Covar	10.0	1.3
		Total = 17.0 lbs PLS/Acre	

Grass Seed Mixture "C" (Tall Fescue Grass Mixture)

Seed Type	Variety	Percent of Mix*	lbs / 1,000 S.F.
Turf Type Tall Fescue	Blackwatch	20.0	2.0
Turf Type Tall Fescue	Avenger	20.0	2.0
Turf Type Tall Fescue	DaVinci	20.0	2.0
Turf Type Tall Fescue	inferno	20.0	2.0
Perennial Ryegrass	Monterey 3	5.0	0.5
Kentucky Bluegrass	Blue Chip	7.5	0.75
Kentucky Bluegrass	Everest	7.5	0.75
		Total = 10 lbs /1,000 S.F.	

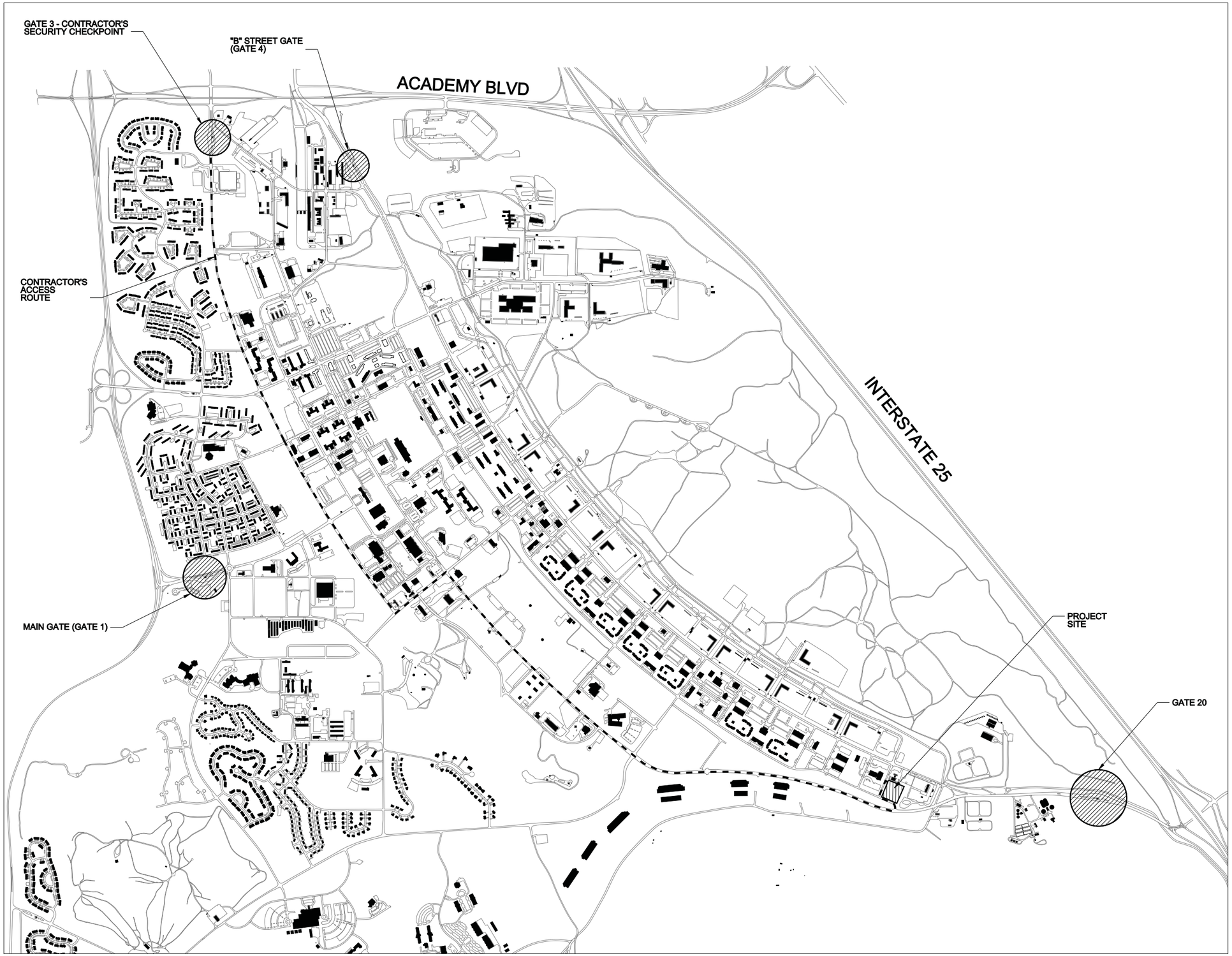
Grass Seed Mixture "D" (Bluegrass Mixture)

Seed Type	Variety	Percent of Mix*	lbs / 1,000 S.F.
Kentucky Bluegrass	Nuglade	20	1.2
Kentucky Bluegrass	Liberty	20	1.2
Kentucky Bluegrass	Blue Chip	20	1.2
Perennial Ryegrass	APM	20	1.2
Perennial Ryegrass	SR-4200	20	1.2
		Total = 6.0 lbs /1,000 S.F.	

Grass Seed Mixture "E" (Blue Grama Mixture)

Seed Type	Variety	Percent of Mix*	lbs / 1,000 S.F.
Blue Grama	Alma, Hachita	100	4.0
		Total= 4.0 lbs /1,000 S.F.	

*Indicates seed percentage base on seed count not weight
**Seed mix "B" is based on Pure Live Seed, PLS. per acre. All other mixes are based on bulk quantities of seed.



US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
OMAHA, NEBRASKA

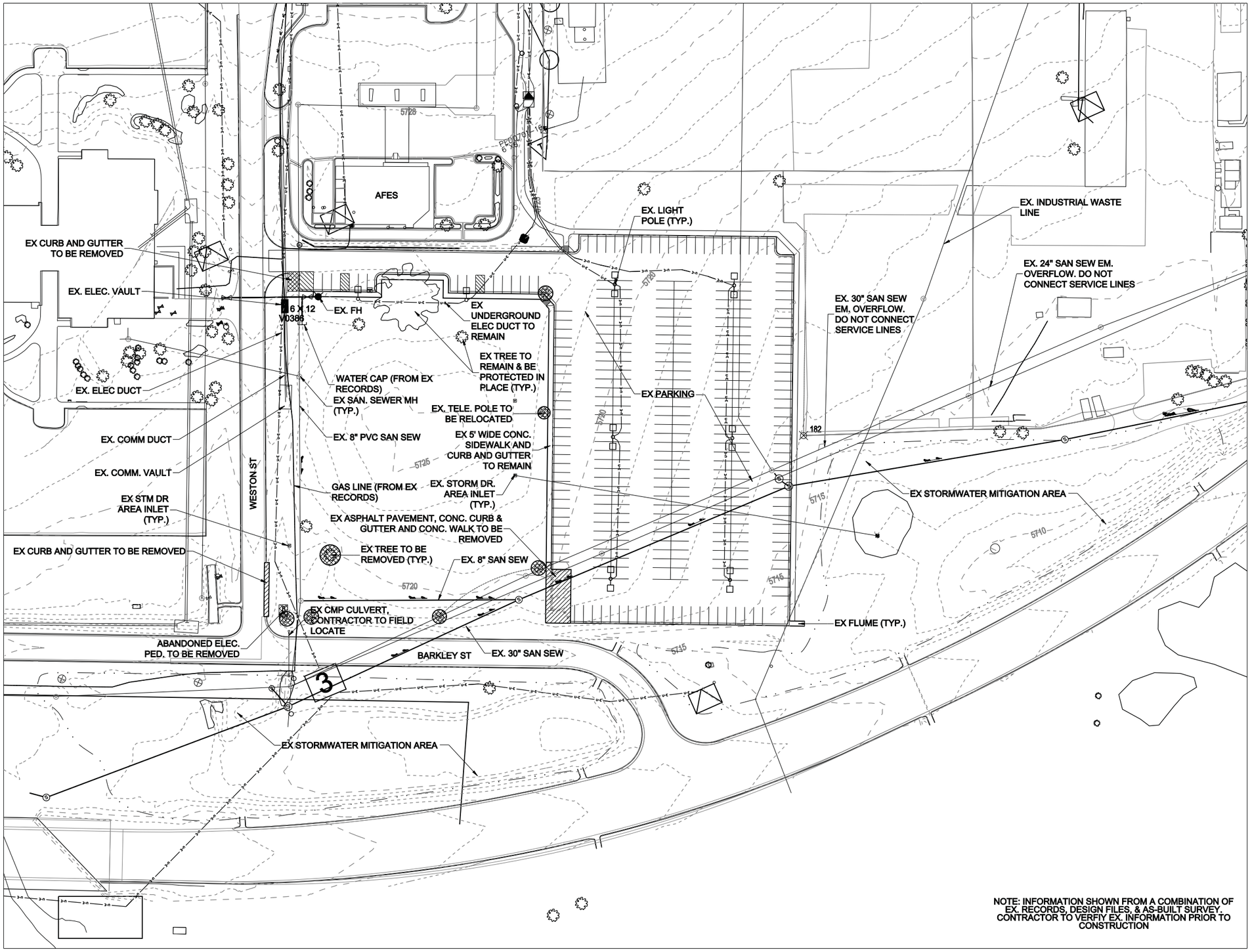
DESIGNED BY: TJD
DWN BY: TJD
CKD BY: JVH
SUBMITTED BY:
FILE NAME: auto_short_design
SIZE: 33.1X22
PLOT SCALE: auto_scale
DATE: DEC. 3, 2010
SOLICITATION NO.: W912HN-07-X-9818
CONTRACT NO.:
FILE NUMBER:
PLOT DATE: auto_sytime

EN BATTALION HEADQUARTERS - SOUTH
FORT CARSON, COLORADO
PN 72968 (FY11)

LOCATION PLAN

SHEET IDENTIFICATION NUMBER
GI101

auto_username auto_design



NOTE: INFORMATION SHOWN FROM A COMBINATION OF EX. RECORDS, DESIGN FILES, & AS-BUILT SURVEY. CONTRACTOR TO VERFIY EX. INFORMATION PRIOR TO CONSTRUCTION

N

50' 25' 0 50'

SCALE: 1" = 50'-0"

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT

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U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
OMAHA, NEBRASKA

EN BATTALION HEADQUARTERS - SOUTH
FORT CARSON, COLORADO
PN 72868 (FY11)

EXISTING CONDITIONS & SITE DEMOLITION PLAN

SHEET IDENTIFICATION NUMBER
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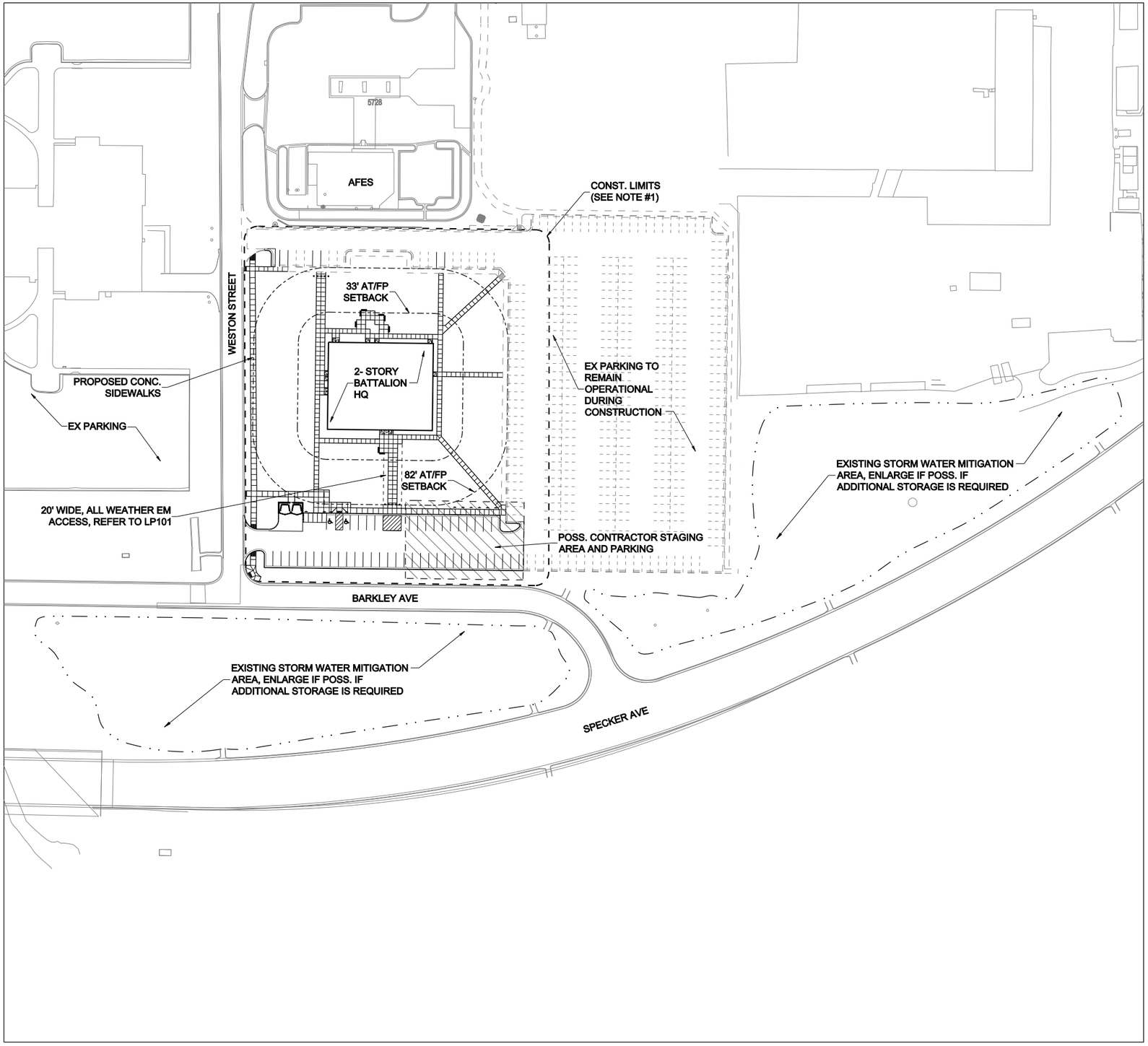

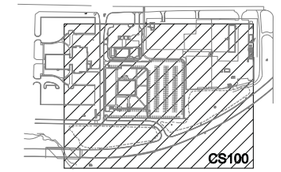

KEY PLAN 1"=500'

GENERAL NOTES:

1.) CONSTRUCTION LIMITS WILL BE ENLARGD IF ADD AREAS FOR STORM WATER MITIGATION IS REQ'D.

PARKING TABULATION:

REQUIRED:

90% of MAX OCCUPANCY @ 70 PN= 63SP'S

PROVIDED:

52 POV + 2 HC + 5 MOTORCYCLE= 59 SP'S

60' 30' 0 60'

SCALE: 1" = 50'-0"

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT

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U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
OMAHA, NEBRASKA

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PLOT SCALE: auto_scale
PLOT DATE: auto_sytime

EN BATTALION HEADQUARTERS - SOUTH
FORT CARSON, COLORADO
PN 72969 (FY11)

COMPOSITE CONCEPT
SITE PLAN

SHEET IDENTIFICATION NUMBER
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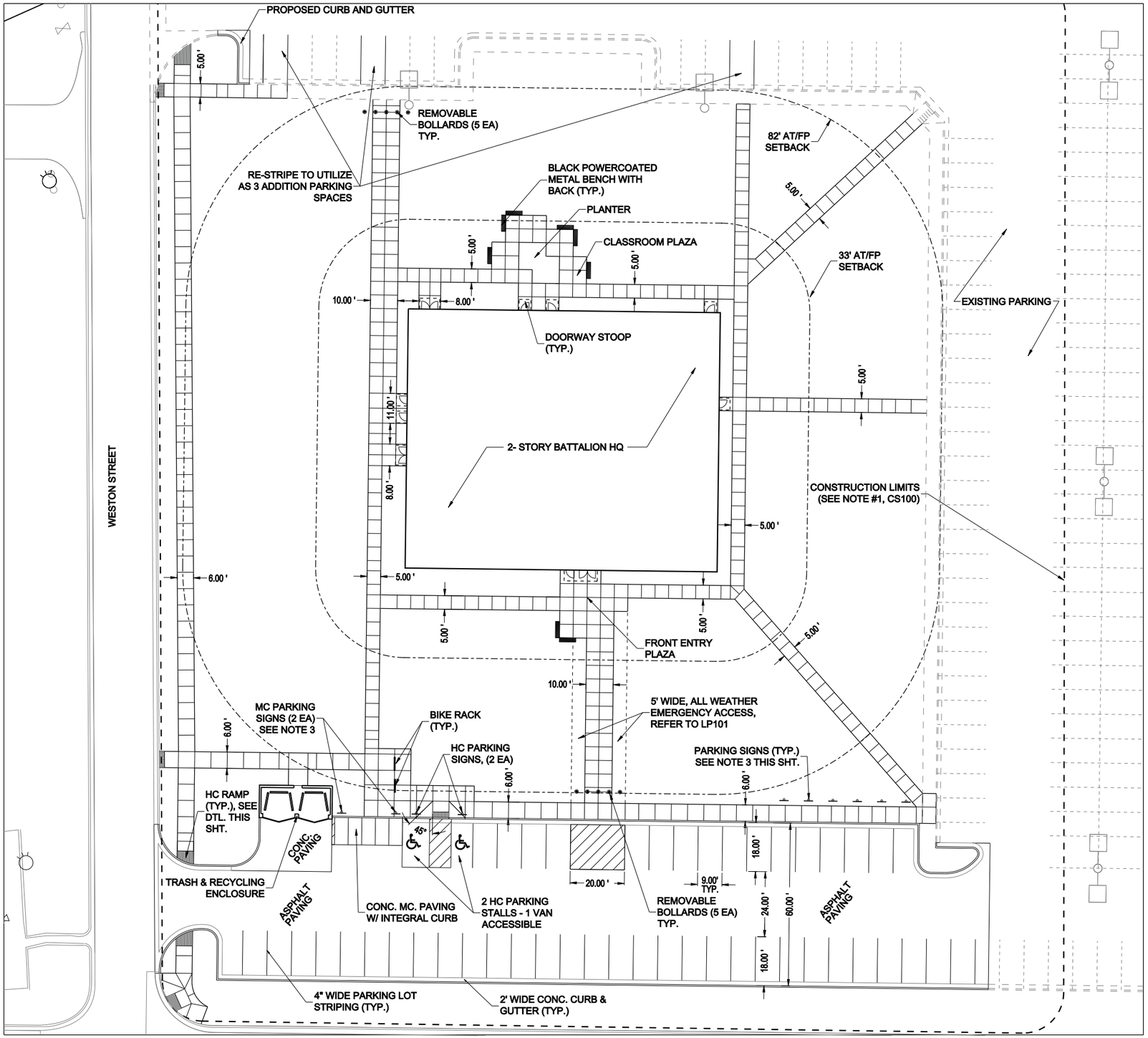
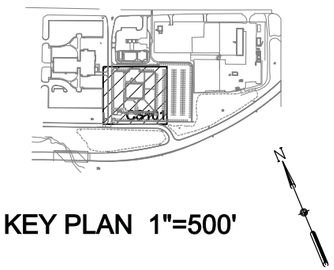
auto_username auto_design





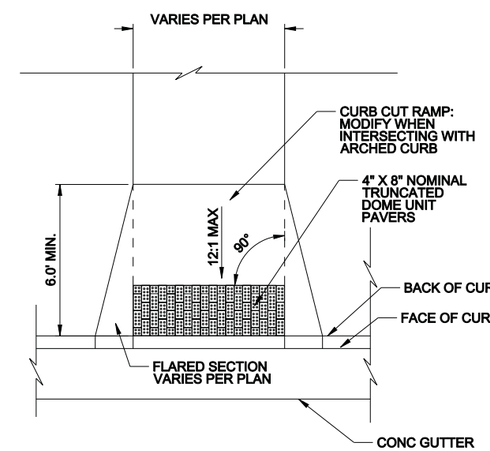
KEY PLAN 1"=500'

GENERAL NOTES:

1.) SEE GENERAL NOTES CS100 & APPLY TO THIS DRAWING

2.) ALL SITE FURNISHINGS SHALL BE OF A SIMILAR STYLE & COLOR

3.) PROVIDE 3 FUEL EFFICENT & 3 CAR POOL STALLS, AND MOTORCYCLE PARKING SIGNAGE.



HC RAMP W/ BRICK PAVER DETAIL

20' 10' 0 20'

SCALE: 1" = 20'-0"

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT

MARK	DESCRIPTION	DATE	APPR.	MARK	DESCRIPTION	DATE	APPR.

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CKD BY: JWR
SUBMITTED BY:
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SIZE: 33.1X22
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DATE: DEC. 3, 2010
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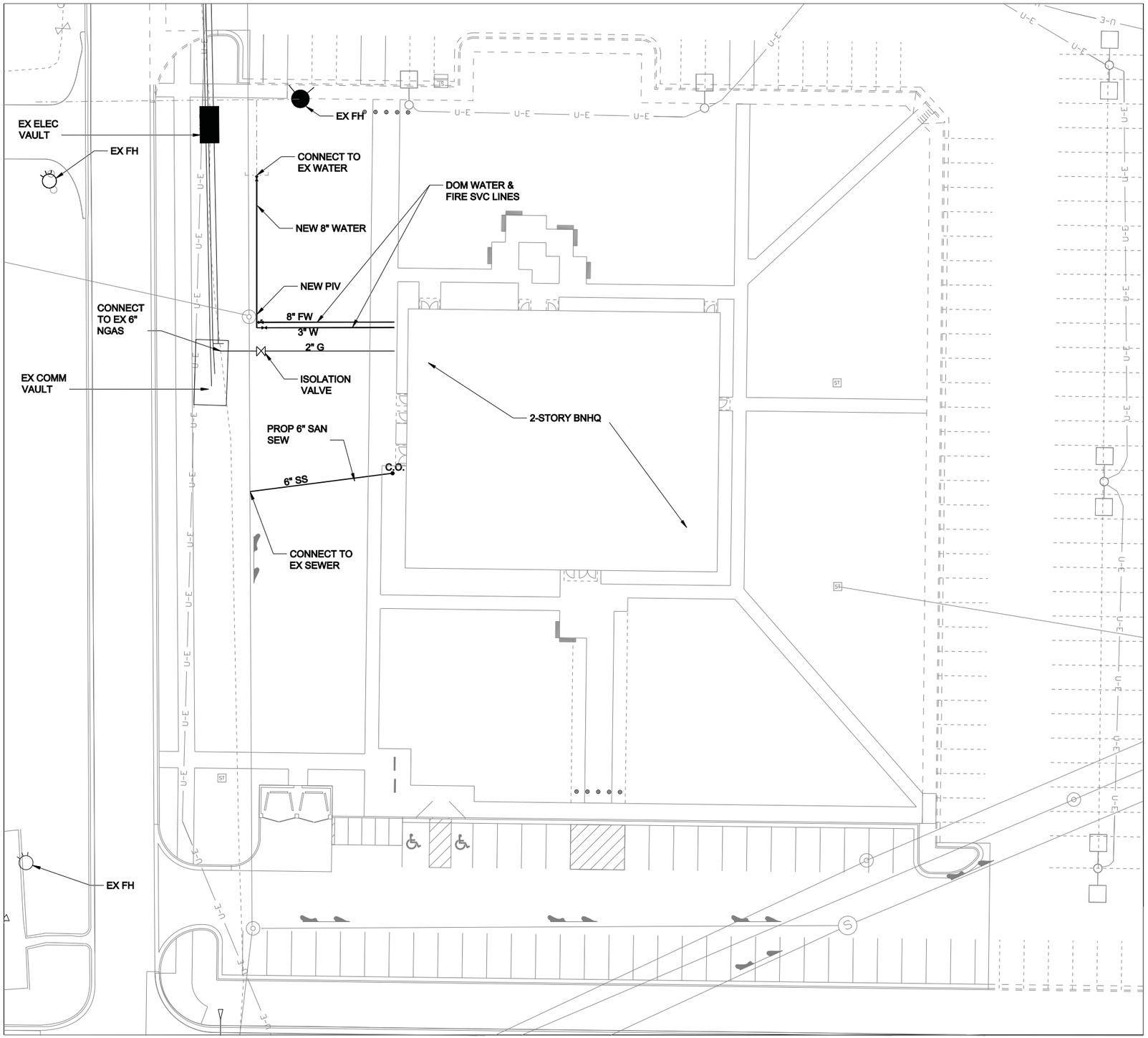
U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
OMAHA, NEBRASKA

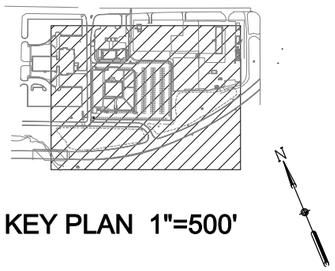
EN BATTALION HEADQUARTERS - SOUTH
FORT CARSON, COLORADO
PN 72968 (FY11)

CONCEPT SITE PLAN

SHEET IDENTIFICATION NUMBER
CS101

auto_username auto_design





KEY PLAN 1"=500'

GENERAL NOTES:

1.) EXTERIOR CHILLER AND TRANSFORMERS SHALL BE SCREENED PER ATFP STANDARDS.

2.) SCREEN WALL SHALL BE OF SIMILAR STYLE AND COLOR TO THE PROPOSED BATTALION HQ BUILDING.

20' 10' 0 20'

SCALE: 1" = 20'-0"

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
OMAHA, NEBRASKA

DESIGNED BY: TJD
DATE: DEC. 3, 2010
DWN BY: TJD
CKD BY: JYH
SOLICITATION NO.: W912HN-07-X-9818
SUBMITTED BY: TJD
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EN BATTALION HEADQUARTERS - SOUTH
FORT CARSON, COLORADO
PN 72898 (FY11)

UTILITY CONNECTION PLAN

SHEET IDENTIFICATION NUMBER
CU101

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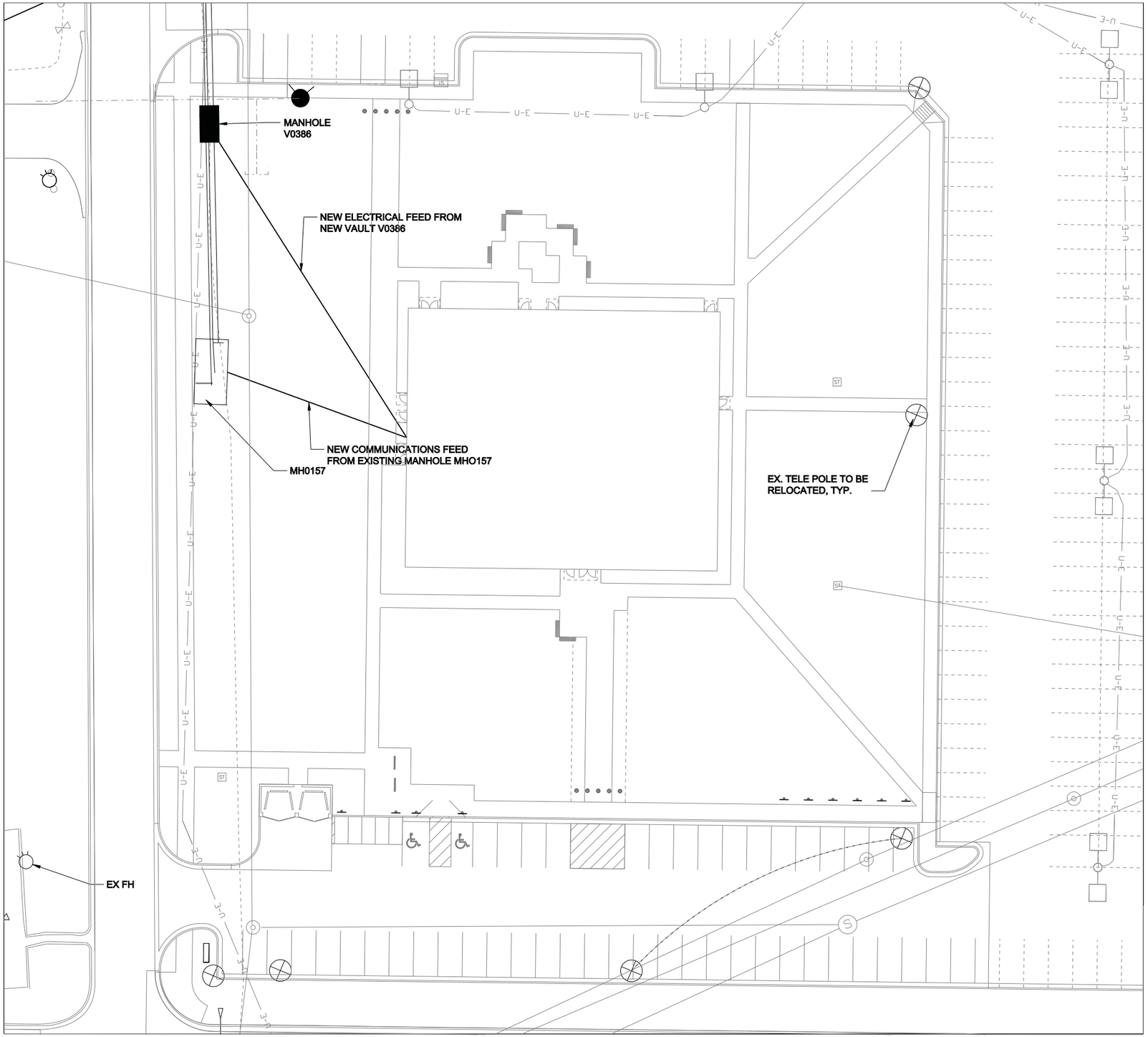

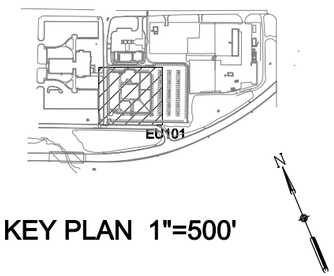

KEY PLAN 1"=500'

GENERAL NOTES:

1.) CONTRACTOR SHALL RELOCATE 6 TELEPHONE POLES.

20' 10' 0 20'

SCALE: 1" = 20'-0"

US ARMY CORPS
OF ENGINEERS
OMAHA DISTRICT

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
OMAHA, NEBRASKA

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SUBMITTED BY:
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EN BATTALION HEADQUARTERS - SOUTH
FORT CARSON, COLORADO
PN 72968 (FY11)

UTILITY CONNECTION PLAN

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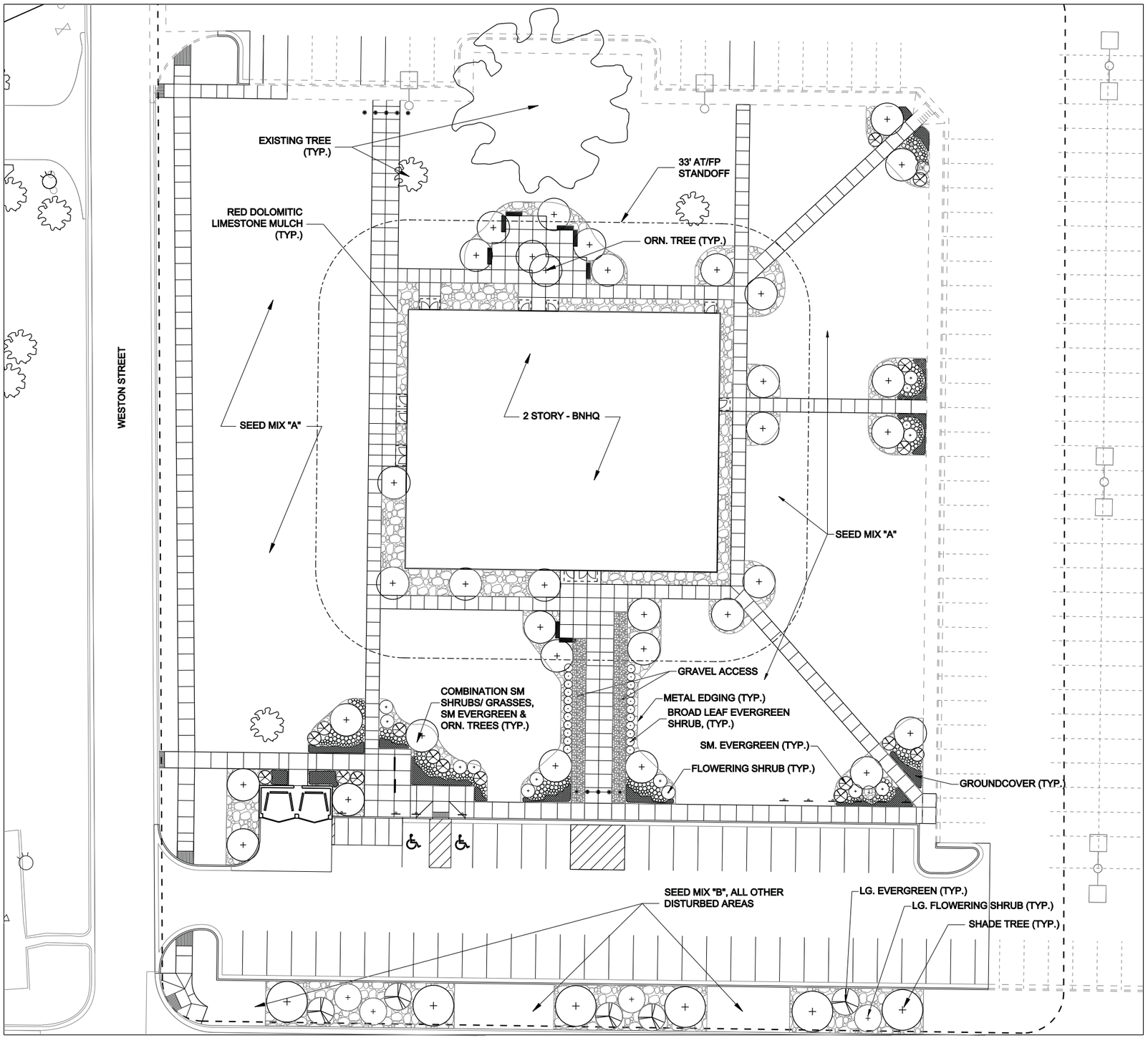

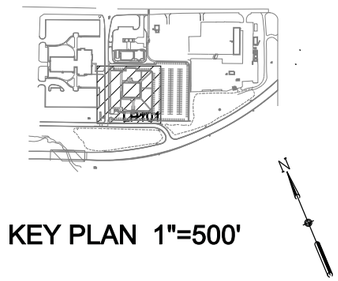

KEY PLAN 1"=500'

GENERAL NOTES:

1.) ROCK MULCH SHALL BE PLACED ON 6 MIL POLY FILL.

2.) GRAVEL ACCESS SHALL BE 8" THICK RED DOLOMITIC LIMESTONE ON COMPACTED SUBGRADE.

3.) THE USE OF SOD WILL NOT BE PERMITTED ON THIS PROJECT

N

20' 10' 0 20'

SCALE: 1" = 20'-0"

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT

MARK	DESCRIPTION	DATE	APPR.

MARK	DESCRIPTION	DATE	APPR.

U. S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
OMAHA, NEBRASKA

DESIGNED BY: TJD
DATE: DEC. 3, 2010
DWN BY: TJD
CKD BY: JWR
SOLICITATION NO.: W912HN-07-B-0018
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EN BATTALION HEADQUARTERS - SOUTH
FORT CARSON, COLORADO
PN 72868 (FY11)

CONCEPT LANDSCAPE PLAN

SHEET IDENTIFICATION NUMBER
LP101

auto_username auto_design

Appendix K

Utility Cost Information
(September 2010)

The following utility rates for this installation are provided:

Electrical:

Electric Cost: $0.0806/KWH.

Electric rates are forecasted to increase 3% in Jan 2011.

Natural Gas:

Approximately $6.30/MCF (thousand cubic feet)
- Price changes monthly to reflect the current price of gas (expected to be +/- $0.50/MCF for the next 12 months).

Water:

Water Summer (16 Apr - 15 Oct): $5.4273/KGAL
Water Winter (16 Oct – 15 Apr): $3.3956/KGAL
per [volume]

Water rates are forecasted to increase 10 percent in January 2011.

Sewer:
Commodity Charge Rate - $3.3810/kgal

APPENDIX L

LEED Project Credit Guidance

This spreadsheet indicates Army required credits, Army recommendations regarding preference and avoidance of individual credits, project-specific ranking of individual point preferences, discussion of Installation roles in support of individual credits, and issues that Government Project Delivery Teams (PDTs) need to be aware of relating to individual credits. The Resources section that follows provides references and resources that relate to LEED, including policy and legal requirements, design guides and documentation resources.

LEED 2.2 Credit Paragraph	**LEED Project Credit Guidance**	**Army Guidance:** Required - Preferred - Avoid	**Project Preference Ranking**: (1=most preferred, blank=no preference)	
PAR	**FEATURE**			**REMARKS**
CATEGORY 1 - SUSTAINABLE SITES (14 POSSIBLE POINTS)				
SSPR1	Construction Activity Pollution Prevention (PREREQUISITE)	Rqd	Rqd	All LEED prerequisites are required to be met. Related to compliance with 40 CFR 122.26 (Clean Water Act).

SS1	Site Selection	Pref	1	See paragraph LEED CREDITS COORDINATION for information relating to this credit.
SS2	Development Density & Community Connectivity - OPTION 1 DENSITY			Credit is determined by Installation's site selection. See paragraph LEED CREDITS COORDINATION for information relating to this credit. Required development density is uncommon on Installations.
	Development Density & Community Connectivity - OPTION 2 CONNECTIVITY			Credit is determined by Installation's site selection. See paragraph LEED CREDITS COORDINATION for information relating to this credit.
SS3	Brownfield Redevelopment			Credit is determined by Installation's site selection. See paragraph LEED CREDITS COORDINATION for information relating to this credit. Remediation performed by others (outside of construction contract) qualifies for this credit. Selection of previously remediated sites does not qualify.
SS4.1	Alternative Transportation: Public Transportation Access	Pref	1	Credit is determined by Installation's site selection. See paragraph LEED CREDITS COORDINATION for information relating to this credit.
SS4.2	Alternative Transportation: Bicycle Storage & Changing Rooms	Pref	1	Credit is easily earned at minimal first cost.
SS4.3	Alternative Transportation: Low Emitting & Fuel Efficient Vehicles - OPTION 1			Requires provision of vehicles, which cannot be purchased with construction funds. Assume Government will not provide vehicles unless indicated otherwise.
SS4.3	Alternative Transportation: Low Emitting & Fuel Efficient Vehicles - OPTION 2	Pref	1	Credit is easily earned at minimal first cost.
SS4.3	Alternative Transportation: Low Emitting & Fuel Efficient Vehicles - OPTION 3			Requires provision of vehicle refueling stations. Installation must support type of fuel and commit to maintaining/supporting refueling stations.
SS4.4	Alternative Transportation: Parking Capacity	Pref	1	Credit is easily earned at minimal first cost.
SS5.1	Site Development: Protect or Restore Habitat			Ability to earn this credit depends greatly on size of project site and land made available within site boundary (but outside development footprint) that is made available for habitat.

SS5.2	Site Development: Maximize Open Space	Pref	1	AT/FP standoffs often create open space required to earn this credit. Particularly for vehicle-oriented facilities requiring adjacent hardstand, earning this credit may require larger site boundary to obtain credit.
SS6.1	Stormwater Design: Quantity Control	Pref	1	Related to compliance with 40 CFR 122.26 (Clean Water Act).
SS6.2	Stormwater Design: Quality Control			
SS7.1	Heat Island Effect: Non-Roof			
SS7.2	Heat Island Effect: Roof	Pref		Coordinate with nearby airfield requirements, which may preclude this credit.
SS8	Light Pollution Reduction	Pref		Credit is easily earned at minimal first cost. May not be feasible for Access Control Points and other projects subject to Chapter 11 Security Lighting requirements of UFC 3-550-03FA.
CATEGORY 2 – WATER EFFICIENCY (5 POSSIBLE POINTS)				
WE1.1	Water Efficient Landscaping: Reduce by 50%	Pref	1	Credit is easily earned at minimum cost. Most often requires use of native turf as specified and drought tolerant plants in combination with drip irrigation systems for planting beds.
WE1.2	Water Efficient Landscaping: No Potable Water Use or No Irrigation			
WE2	Innovative Wastewater Technologies - OPTION 1			
WE2	Innovative Wastewater Technologies - OPTION 2			
WE3.1	Water Use Reduction: 20% Reduction	Rqd	Rqd	Related to Army mandate for waterless urinals beginning FY10.
WE3.2	Water Use Reduction: 30% Reduction	Pref		
CATEGORY 3 – ENERGY AND ATMOSPHERE (17 POSSIBLE POINTS)				
EAPR1	Fundamental Commissioning of the Building Energy Systems (PREREQUISITE)	Rqd	Rqd	All LEED prerequisites are required to be met.
EAPR2	Minimum Energy Performance (PREREQUISITE)	Rqd	Rqd	All LEED prerequisites are required to be met.
EAPR3	Fundamental Refrigerant Management (PREREQUISITE)	Rqd	Rqd	All LEED prerequisites are required to be met.

EA1	Optimize Energy Performance	Rqd	Rqd	Earning of LEED EA1 points as indicated in paragraph MANDATORY LEED CREDITS, as a minimum, is required. Note that LEED points calculation is based on energy cost reduction.
EA2.1	On-Site Renewable Energy			
EA3	Enhanced Commissioning	Avd	Avd	This credit is not readily achievable. Estimated costs range from 2.5% to 5% of construction cost. The Commissioning Authority cannot be provided through the Contractor. Commissioning Authority activities begin during design phase and continue well beyond beneficial occupancy. Assume Government will not provide CxA post-occupancy activities.
EA4	Enhanced Refrigerant Management	Avd	Avd	Availability issues must be addressed.
EA5	Measurement & Verification			Credit relates to EPACT metering requirements. Provider and funding of post-occupancy activities must be coordinated. Assume Government will not provide post-occupancy activities.
EA6	Green Power			Credit is determined by Installation's purchase of green power. See paragraph LEED CREDITS COORDINATION for information relating to this credit.
CATEGORY 4 – MATERIALS AND RESOURCES (13 POSSIBLE POINTS)				
MRPR1	Storage & Collection of Recyclables (PREREQUISITE)	Rqd	Rqd	All LEED prerequisites are required to be met. Installation provides collection service and outside receptacle needs coordination.
MR1.1	Building Reuse: Maintain 75% of Existing Walls, Floors & Roof			
MR1.2	Building Reuse: Maintain 95% of Existing Walls, Floors & Roof			
MR1.3	Building Reuse: Maintain 50% of Interior Non-Structural Elements			
MR2.1	Construction Waste Management: Divert 50% From Disposal	Rqd	Rqd	Project requirement. See paragraph MANDATORY LEED CREDITS for additional information. Contractor diversion data is provided to Installation for inclusion in Installation waste diversion reporting. LEED project totals may include onsite demolition by others. If this applies to the project, the PM furnishes this diversion data to the Contractor for inclusion in the project

				total.
MR2.2	Construction Waste Management: Divert 75% From Disposal	Pref		
MR3.1	Materials Reuse: 5%			Installation provides information on any salvage/refurbished materials available on-post for incorporation in project.
MR3.2	Materials Reuse: 10%			Installation provides information on any salvage/refurbished materials available on-post for incorporation in project.
MR4.1	Recycled Content: 10% (post-consumer + 1/2 pre-consumer)	Pref		Relates directly to EPA CPG compliance and is highly preferred. Federal regulation as well as Federal, DOD and Army policies require purchase of products that contribute to this credit.
MR4.2	Recycled Content: 20% (post-consumer + 1/2 pre-consumer)	Pref		Relates directly to EPA CPG compliance and is highly preferred. Significant concrete and steel in project facilitate earning of this credit.
MR5.1	Regional Materials:10% Extracted, Processed & Manufactured Regionally			Because credit requires regional extraction, earning this credit depends on project location relative to extraction locations of required materials.
MR5.2	Regional Materials:20% Extracted, Processed & Manufactured Regionally			Because credit requires regional extraction, earning this credit depends on project location relative to extraction locations of required materials.
MR6	Rapidly Renewable Materials			Relates directly to USDA FB4P biobased materials compliance. Earning this credit is highly dependent on the nature of the project and the opportunities it presents for incorporation of rapidly renewable materials.
MR7	Certified Wood	Pref		Credit is easily earned at minimal first cost in projects that include very little wood. For projects with significant wood, additional cost may be prohibitive.
CATEGORY 5 – INDOOR ENVIRONMENTAL QUALITY (15 POSSIBLE POINTS)				
EQPR1	Minimum IAQ Performance (PREREQUISITE)	Rqd	Rqd	All LEED prerequisites are required to be met. Related to compliance with 10 CFR 434 (Federal Energy Code).

EQPR2	Environmental Tobacco Smoke (ETS) Control (PREREQUISITE)	Rqd	Rqd	All LEED prerequisites are required to be met. Federal, DOD and Army policy require smoke free buildings, which meets the intent of this prerequisite. The Army currently allows an exemption to this policy for Army Family Housing, RCI housing, and individual rooms in barracks and other lodging where individuals can not be prevented from smoking. For these types of facilities, the requirements of LEED-NC 2.2 Option 3 must be met.
EQ1	Outdoor Air Delivery Monitoring			
EQ2	Increased Ventilation			May adversely effect ability to earn energy optimization credits.
EQ3.1	Construction IAQ Management Plan: During Construction	Rqd	Rqd	Credit is easily earned at minimal first cost.
EQ3.2	Construction IAQ Management Plan: Before Occupancy	Rqd	Rqd	Credit is easily earned at minimal first cost. Flushout should be prohibited where humidity/moisture introduction is an issue. Construction schedule must accommodate activities required for this credit.
EQ4.1	Low Emitting Materials: Adhesives & Sealants	Pref		Credit is easily earned at minimal first cost.
EQ4.2	Low Emitting Materials: Paints & Coatings	Pref		Credit is easily earned at minimal first cost.
EQ4.3	Low Emitting Materials: Carpet Systems	Pref		Credit is easily earned at minimal first cost.
EQ4.4	Low Emitting Materials: Composite Wood & Agrifiber Products	Pref		Credit is easily earned at minimal first cost in projects that include very little composite wood. For projects with significant composite wood, additional cost/availability issues may be prohibitive.
EQ5	Indoor Chemical & Pollutant Source Control	Pref		Credit is easily earned at minimal first cost. Roll-up and carpet systems requiring weekly cleaning to earn this credit are not a permitted option for Army projects.
EQ6.1	Controllability of Systems: Lighting			
EQ6.2	Controllability of Systems: Thermal Comfort			Feasibility and cost of provision of individual workstation comfort controls is highly dependent on project type.
EQ7.1	Thermal Comfort: Design			
EQ7.2	Thermal Comfort: Verification			Provider and funding of post-occupancy activities must be coordinated. Assume Government will not provide post-occupancy activities.
EQ8.1	Daylight & Views: Daylight 75% of Spaces	Pref		Credit is easily earned at minimal first cost provided building design limitations do not preclude it.

EQ8.2	Daylight & Views: Views for 90% of Spaces	Pref		Credit is easily earned at minimal first cost provided building design limitations do not preclude it.
CATEGORY 6 – FACILITY DELIVERY PROCESS (5 POSSIBLE POINTS)				
IDc1.1	Innovation in Design			
IDc1.2	Innovation in Design			
IDc1.3	Innovation in Design			
IDc1.4	Innovation in Design			
IDc2	LEED Accredited Professional	Rqd	Rqd	LEED AP during design and construction is required.

Resources. Following are resources with web links, discussion of Federal and Army mandates and policies that relate to LEED, sources of design guidance and documentation tools to assist the PDT. Use of/compliance with documents indicated in this appendix is not required unless indicated in RFP. In the event of conflict between RFP and this appendix, RFP takes precedence.

Federal Mandates

Federal Energy Policy Act of 2005. Requires energy efficiency improvements in all Federal facilities, as well as metering and increased use of renewable energy sources. Requirements are synopsized in ECB 2005-20, *Energy Policy Act of 2005 (Public Law 109-58) and how it affects all Federal Facilities*. (CECW-CE-D, 08 Dec 2005) http://www.wbdg.org/ccb/ARMYCOE/COEECB/ecb_2005_20.pdf

EPA, *Environmentally Preferable Purchasing* (EPP) Program (EPA), available through URL: http://www.epa.gov/oppt/epp/ . Resulting from Executive Order [EO] 13101 *Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition* (White House, 14 September 1998), it establishes basic guidelines for EPP as well as forms the basis for Comprehensive Procurement Guidelines (see below).

Comprehensive Procurement Guidelines [CPG], www.epa.gov/cpg.

The EPA publishes the Comprehensive Procurement Guidelines (CPGs), found in 40 CFR 247, that provide a list of products that must contain recovered material. **This is required regardless of whether the LEED recycled content credit is pursued or not.** Recommendations for the percentages of recovered materials are published in a companion document titled the Recovered Materials Advisory Notice (RMAN). Additional products are added every 2-3 years. The CPGs currently include several commonly used construction products (such as concrete, floor tiles, and roofing materials) and landscaping products (such as site furnishings and landscaping timbers).
EPA requires that the purchase of products listed on the CPG contain at least the recycled content indicated in the CPG when practicable. For every project, designer must review the current CPG list and, unless designer determines that justification for non-use exists, ensure that the technical specifications require at least the recycled content indicated in the CPG. The following are considered adequate justifications for non-use:

a. The product does not meet appropriate performance standards.
b. The product is not available within a reasonable time frame.
c. The product is not available competitively (from two or more sources).
d. The product is only available at an unreasonable price (compared with a comparable non-recycled content product).

Applicable FAR provisions and clauses: FAR Part 23.4, *Use of Recovered Materials,* 52.223-4, *Recovered Material Certification,* 52.223-9, *Estimate of Percentage of Recovered Material Content for EPA-Designated*

Products. Note that although EPA designated recycled content products contribute to the LEED recycled content credit, satisfying this requirement does not guarantee that the project will reach the cumulative total required to earn the LEED credit.

USDA Federal Biobased Products Preferred Procurement Program (FB4P)
http://www.biobased.oce.usda.gov

The USDA has a program similar to the EPA CPG, found in 7 CFR 2902, that provides a list of designated products that must contain bio-based material with recommendations for the percentages of bio-based content. The rules for use of designated products are the same as EPA CPG. Currently the only designated construction product is roof coatings, however additional products may be added. For every project, designer must review the current USDA designations for products applicable to the project and, if any are found, unless designer determines that justification for non-use exists, ensure that the technical specifications require at least the bio-based content indicated in the designation.

All Federal contracts that involve the use or purchase of USDA- designated products must specify that the associated procurement requirements be met and must include applicable FAR provisions and clauses (currently not yet published). Note that although USDA designated bio-based content products contribute to the LEED rapidly renewable materials credit, satisfying this requirement does not guarantee that the project will reach the cumulative total required to earn the LEED credit.

FAR Part 23.803 Ozone-Depleting Substances
This federal policy requires that Federal agencies implement cost-effective programs to minimize the procurement of materials and substances that contribute to the depletion of stratospheric ozone and give preference to the procurement of alternative chemicals, products, and manufacturing processes that reduce overall risks to human health and the environment by lessening the depletion of ozone in the upper atmosphere.

Applicable FAR provisions and clauses: 52.223-11 *Ozone Depleting Substances*, 52.223-12 *Refrigeration Equipment and Air Conditioners*.

10 CFR Part 434*, Energy Code for New Federal Commercial and Multi-Family High Rise Residential Buildings*. www.wbdg.org Mandates/References, Federal Mandates, Code of Federal Regulations.

Requires federal projects comply with ASHRAE Standard 90.1, including ASHRAE Standard 62.1 – 2004, *Ventilation for Acceptable Indoor Air Quality* (ASHRAE, 2004)

10 CFR Part 435 *Energy Conservation Voluntary Performance Standards for New Buildings; Mandatory for Federal Buildings.* www.wbdg.org "Mandates/References", "Federal Mandates", "Code of Federal Regulations". Includes mandatory standards for federal residential facilities.

Department of Defense [DOD] Instruction [DODI] 1010.15, *Smoke-Free DOD Facilities Management* (Department of Defense, 02 Jan 2001). DoD implementation of EO 13058 *Protecting Federal Employees and the Public From Exposure to Tobacco Smoke in the Federal Workplace* (White House, 13 August 1997).

Army Policy and Mandates

Memorandum, DAIM-ZA, Subject: *Sustainable Management of Waste in Military Construction, Renovation, and Demolition Activities* (06 February 2006) http://www.hqda.army.mil/acsimweb/fd/docs/C&D_encl.pdf

Mandates that all new construction, renovation and demolition projects include contract performance requirements to divert as a minimum 50% of non-hazardous construction and demolition (C&D) debris from landfill disposal.

ECB 2006-7R Army Standard for Urinals (09 AUG2006) www.hnd.usace.army.mil/techinfo "Publications", "Engineering and Construction Bulletins". Mandates waterless urinals beginning FY10.

Army Energy Campaign Plan: http://hqda-energypolicy.pnl.gov/programs/plan.asp Sets forth army long-term goals and Installation activities for achieving them.

Army Installation Design Standards (Headquarters, Department of the Army, [HQDA], 3 May 2004) www.idsarmy.hqda.pentagon.mil Template and guidance for Army Installation Design Guides.

Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding. Signatory agencies commit to federal leadership in the design, construction, and operation of High-Performance and Sustainable Buildings. A major element of this strategy is the implementation of common strategies for planning, acquiring, siting, designing, building, operating, and maintaining High Performance and Sustainable Buildings. See *Technical Guidance for Implementing the Federal Leadership in Heating Performance and Sustainable Buildings Memorandum of Understanding*, http://www.wbdg.org/sustainablemou/

United States Green Building Council/LEED

USGBC Website – http://www.usgbc.org

LEED-NC (New Construction) v.2.2 Rating System, October 2005 -- https://www.usgbc.org/ShowFile.aspx?DocumentID=1095

LEED-NC v.2.2 Registered Project Checklist -- https://www.usgbc.org/FileHandling/show_general_file.asp?DocumentID=1096

LEED-NC v.2.2 Reference Guide – Available by purchase from the USGBC at: http://www.usgbc.org/b2c/b2c/mainFS.jsp

LEED Letter Templates – Use of LEED Letter Templates for projects not registered with USGBC is a copyright infringement and is not permitted. Samples of the templates are available for review only at: http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1447. (Fully functional access to LEED On-Line is only available to projects registered with the USGBC.)

LEED Credit Interpretations (CIRs) – Available on the members only side of the USGBC website. Click 'My Account' from the USGBC main web page (log-in and look for CIRs under 'My Resources.'

LEED Application Guide for Multiple Buildings and On-Campus Building Projects https://www.usgbc.org/FileHandling/show_general_file.asp?DocumentID=1097. Provides direction in applying LEED-NC v2.1 and v2.2 to projects in a campus or multi-building setting such as corporate campuses, college campuses, and government installations (i.e. there is one owner or common property management and control).

Whole Building Design Guide (WBDG) www.wbdg.org

The WBDG is a web-based portal providing government and industry practitioners one-stop access to up-to-date information on a wide range of building-related guidance, criteria and technology from a 'whole buildings' perspective. Development of the WBDG is a collaborative effort among federal agencies, private sector companies, non-profit organizations and educational institutions. In addition to a wide range of design information, WBDG includes links to federal Executive Orders, Code of Federal Regulations and Construction Criteria Base (CCB). CCB is an electronic library of construction guide specifications, manuals, standards and many other essential criteria documents from participating federal agencies.

Whole Building Design Guide (WBDG): *Design Guidance*, http://www.wbdg.org/design/

Whole Building Design Guide (WBDG): *Tools - LEED® Version 2.1 Credit / WBDG Resource Page Matrix,* http://www.wbdg.org/tools/leed.php?a=1

WBDG, *Project Management – Project Planning & Development – Building Commissioning*, http://www.wbdg.org/project/buildingcomm.php

WBDG, *Project Management*, http://www.wbdg.org/project/index.php

WBDG, *Tools – LEED-DOD Antiterrorism Standards Tool*, http://www.wbdg.org/tools/leed_atfp_rp.php?l=ss-2

General Resources

Sustainable Design - General

Office of the Federal Environmental Executive. www.ofee.gov OFEE's mission is to advocate, coordinate, and assist environmental efforts of the federal community in waste prevention, recycling, affirmative procurement of CPG items, and the acquisition of recycled and environmentally preferable products and services. General reference with links.

Engineer Knowledge Online (EKO) Portal Sustainable Design and Development (SDD) Resource https://eko.usace.army.mil/fa/sdd/ Contains several links to SDD resources.

ERDC/CERL TR 06 1 (Draft), *Implementation of the U. S. Green Building Council's LEED® as the Army's Green Building Rating System*, January 2006 -- http://www.cecer.army.mil/techreports/ERDC-CERL-TR-06-1/ERDC-CERL-TR-06-1.pdf This work compares the SPiRiT and LEED rating systems and makes recommendations regarding further development and implementation, including the adoption of LEED® NC (New Construction) without modification or supplement. This work also reviewed 40 sample projects to reveal patterns of successful LEED® use within the Army.

DA Pamphlet [DA PAM] 200-1, *Environmental Protection and Enhancemen*t (HQDA, 17 January 2002) www.army.mil/usapa/epubs/pdf/p200_1.pdf Provides detailed guidance to support implementation of AR 200-1 to include: water resources management, oil and hazardous substances spills, hazardous materials management, hazardous and solid waste management, air pollution, environmental noise management, asbestos management, radon reduction, pollution prevention, environmental restoration, environmental quality technology, automated environmental management systems, the Army environmental program in foreign countries, and other miscellaneous topics.

Site Development

Engineering Pamphlet 1110-1-16 [EP], *Engineering and Design—Handbook for the Preparation of Storm Water Pollution Prevention Plans for Construction Activities* (HQUSACE, 28 February 1997). www.usace.army.mil/publications/eng-pamphlets/ep1110-1-16/toc.htm

UFC 3-210-06A, *Site Planning and Design* (by reference TM 5-803-14 Site Planning and Design) (HQDA, 16 January 2004).

UFC 3-210-10, *Design: Low Impact Development Manual* (HQDA, 25 October 2004).

UFC 3-230-14A, *Evaluation Criteria Guide for Water Pollution Prevention Control and Abatement Programs* (HQDA, 16 January 2004).

Energy

DOD Instruction 4170.11, *Installation Energy Management* (DOD, 13 October 2004). http://army-energy.hqda.pentagon.mil/policies/4170_11.asp Provides procedures for DOD installation energy management and pertains to all phases of administration, planning, programming, budgeting, operations, maintenance, training and material acquisition activities that impact the supply, reliability and consumption of energy at DOD installations.

UFC 3-400-01, *Design Energy Conservation* (HQDA, 5 July 2002).

UFC 3-401-01FA, *Utility Monitoring Control Systems* (HQDA, 1 March 2005).

UFC 3-410-01FA, *Design: Heating, Ventilating, and Air Conditioning* (HQDA, 15 May 2003).

UFC 3-440-01, *Design: Active Solar Preheat Systems* (HQDA, 14 June 2002).

UFC 3-440-03N, *Design: Passive Solar Buildings* (HQDA, 16 January 2004).

UFC 3-440-04N, *Design: Solar Heating of Buildings and Domestic Hot Water* (HQDA, 16 January 2004).

UFC 3-440-06, *Cooling Buildings by Natural Ventilation* (HQDA, 16 January 2004).

UFC 4-826-10, *Refrigeration Systems for Cold Storage* (HQDA, 10 July 2002).

Materials

UFC 1-900-01, Selection of Methods for the Reduction, Reuse, and Recycling of Demolition Waste (DA, 1 December 2002).

Unified Facilities Guide Specifications (UFGS) www.wbdg.org/ccb

UFGS are non-proprietary guide specifications covering a broad range of products and systems and incorporating agency–specific guidance and many sustainability updates. They are used and maintained by USACE, NAVFAC, AFCESA and NASA.

UFGS are in the process of being updated to include Specifier notes relating to all current EPA CPG product designations, but this process is not complete yet. Designer MUST address EPA CPG requirements in specifications on a product-by-product basis.

UFGS 01 33 29 *LEED ™ Documentation.* This section includes overview and documentation requirements plus credit-specific requirements.

UFGS 01 62 35 *Recycled/Recovered Materials*. This section addresses EPA CPG compliance requirements.

UFGS 02 42 00 *Construction and Demolition Waste Management.* For DB and DBB use. This section includes requirement for waste management plan, diversion requirements and reporting.

UFGS 23 08 00.00 10 *Commissioning of HVAC Systems*. This section includes qualifications, standards and documentation, also includes several test checklists. Because it is limited to HVAC only it **does not** by itself satisfy the LEED fundamental commissioning requirement. Commissioning of other LEED required systems and coordination of documentation associated with this additional commissioning must be addressed.

USACE LEED Credit Documentation Tools

LEED 2.2 Project Checklist. USACE Project Checklist spreadsheet for LEED 2.2 is available at http://en.sas.usace.army.mil to edit to create project-specific document.

LEED 2.2 Documentation Requirements and Submittals Checklist. USACE Spreadsheet is available at http://en.sas.usace.army.mil to fill in for project submittals.

Commissioning Plan Document for LEED Fundamental Commissioning USACE template available at http://en.sas.usace.army.mil to edit to create project-specific document.

Owners Project Requirements Document for LEED Fundamental Commissioning. USACE template available at http://en.sas.usace.army.mil for Design Agent/Owner to edit to create project-specific document. Completed document should be included in DB RFPs or provided to Design Team at start of design.

Basis of Design Document for LEED Fundamental Commissioning. USACE template available at http://en.sas.usace.army.mil for Designer of Record to edit to create project-specific document.

LEED 2.2 Glazing Factor Tabulation Spreadsheet available at http://en.sas.usace.army.mil for PDT use in support of Daylighting credit

Owner's Project Requirements Document for LEED Fundamental Commissioning

Project: Battalion Headquarters and Administration Facility, Fort Carson, Co

Approved: _____ _____ _____
Name Owner's Representative Date

_____ _____ _____
Name Design Agent's Representative Date

Overview and Instructions

The purpose of this document is to provide clear and concise documentation of the Owner's goals, expectations and requirements for commissioned systems, and shall be utilized throughout the project delivery and commissioning process to provide an informed baseline and focus for design development and for validating systems' energy and environmental performance.

The Owner's Project Requirements Document is a required document for LEED Version 2.2 EA Prerequisite 1, Fundamental Commissioning of the Building Energy Systems. It shall be completed by the Corps District/Design Agent based on coordination with the Installation/User/Proponent and shall be approved by the Installation/User/Proponent representative.

The intent of the Owner's Project Requirements Document, per the LEED v2.2 Reference Guide, is to detail the functional requirements of a project and the expectations of the building's use and operation as it relates to commissioned systems. This template contains the basic recommended components indicated in the LEED v2.2 Reference Guide. It should be adapted as needed to suit the project, remaining reflective of the LEED intent.

The Owner's Project Requirements Document should ideally be completed before the start of design and furnished to the design team. It must be completed prior to the approval of Contractor submittals of any commissioned equipment or systems to meet LEED requirements.

Updates to the Owner's Project Requirements Document throughout the course of project delivery shall be made by the Corps District/Design Agent based on decisions and agreements coordinated with and agreed to by the Installation/User/Proponent.

The Owner's Project Requirements Document shall be included in the project's LEED documentation file under EA PR1, Fundamental Commissioning of the Building Energy Systems.

Owner's Project Requirements Document for LEED Fundamental Commissioning

Table of Contents

1. Owner and User Requirements
   - Primary Purpose, Program and Use
   - Project History
   - Broad Goals
2. Environmental and Sustainability Goals
   - Energy Efficiency Goals
   - General
   - Siting
   - Building Façade
   - Building Fenestration
   - Building Envelope
   - Roof
   - Other
3. Indoor Environmental Quality Requirements
   - Intended Use
   - Occupancy Schedule
   - Accommodations for After-Hours Use
   - Lighting, Temperature, Air Quality, Ventilation, Filtration
   - Acoustics
   - Occupant Ability to Adjust System Controls
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4. Equipment and Systems Expectations
   - Space Heating
   - Ventilation
   - Air Conditioning
   - Refrigeration
   - HVAC Controls
   - Domestic Hot Water
   - Lighting Controls
   - Daylighting Controls
   - Emergency Power
   - Other
5. Building Occupant and O&M Personnel Requirements
   - Facility Operation
   - EMCS
   - Occupant Training and Orientation
   - O&M Staff Training and Orientation

TABLE 1

1. *Owner and User Requirements*

What is the primary purpose, program and use of this project?

Construct a Military Intelligence (MI) Battalion headquarters combined with general administrative facility and a specialized compartmented information facility (SCIF). The Battalion Headquarters will be consolidated with general administrative facility. Provide fire protection, detection, and alarm systems; connections with the energy monitoring and control system (EMCS); installation of Intrusion Detection. Sustainable Design and Development (SDD) and Energy Policy Act of 2005 (EPAct05) features will be provided. Measures in accordance with the Department of Defense (DoD) Minimum Antiterrorism for Buildings standards will be provided.

Supporting facilities include electricity; security lighting; water, sewer, and natural gas services; fire protection; paving, parking areas, service roads, walks, curbs and gutters; storm drainage; information systems; lightning protection systems; site improvements and landscaping; information systems and anti-terrorism/force protection measures. Anti-terrorism/force protection will be provided by resistance to progressive collapse, special windows and doors.

Due to expansive soils prevalent at Fort Carson, special foundations will be required.

Access for individuals with disabilities will be provided in public areas.

Comprehensive building and furnishings related interior design services are required.

Describe pertinent project history. (example: standard design development)

Current standard was developed in 2004 and revised in 2006. The intended design is based on standard functions that are based on unit composition, mission, size and equipment.

Broad Goals

What are the broad goals relative to program needs?

To provide economical, standardized facilities that meet the basic functional needs of units.

What are the broad goals relative to future expansion?

What are the broad goals relative to flexibility?

The goal is to allow ready adaptability in response to changes in force structure, equipment, and doctrine.

What are the broad goals relative to quality of materials?

Similar to a representative facility of the same type in the private sector. 25-year life with normal maintenance

What are the broad goals relative to construction costs?

Facility must meet budget (be below CCL)

What are the broad goals relative to operational costs?

Meet EPACT (reduced water, energy consumption). Minimize operating costs as much as possible within first cost budget.

Other broad goals: *(Insert as applicable)*

To provide essentially the same functional facility components at all locations (site-adapt) to the extent possible to facilitate unit mobility and to reduce repetitive design costs.

To reduce construction time to 18 months.

2. Environmental and Sustainability Goals

What are the project goals relative to sustainability and environmental issues? (example: LEED Silver rating)

LEED Silver rating

What are the project goals relative to energy efficiency? (example: Meet EPACT)

Meet EPACT -2005

What are the project goals and requirements for building siting that will impact energy use?

Same facility must be site-adapted worldwide. Consistent building orientation cannot be expected. Variations in availability of fuel sources. Requirement for adjacent hardstand will effect opportunities for shading
Special local requirements are indicated in Paragraph 6 of Statement of Work.

What are the project goals and requirements for building facade that will impact energy use?

Same facility must be site-adapted worldwide. Exterior appearance will vary to be compatible with adjoining environment's architectural theme.
Special local requirements are indicated in Paragraph 6 of Statement of Work.

What are the project goals and requirements for building fenestration that will impact energy use?

Same facility must be site-adapted worldwide. Antiterrorism/Force Protection criteria (UFC 4-010-01) requires laminated glass and heavy duty frame. Required AT/FP measures will include resistance to progressive collapse, sway bracing, blast resistant windows and exterior glass, and exterior setbacks.

What are the project goals and requirements for building envelope that will impact energy use?

ASHRAE 90.1-2004 and EPACT-2005 are required.
Special local requirements are indicated in Paragraph 6 of Statement of Work.

What are the project goals and requirements for building roof that will impact energy use?

Special local requirements are indicated in Paragraph 6 of Statement of Work. _____

3. Indoor Environmental Quality Requirements

What is the intended use for all spaces? For all spaces that have an intended use that is not readily apparent from the space name, provide this information in Table 1.

_____
_____
_____

What is the anticipated occupancy schedule (numbers of occupants and time frames) for all occupied spaces? Indicate the default occupancy schedule below and for all spaces that have an occupancy schedule that differs from the default, provide this information in Table 1.

_____.

What accommodations for after-hours use are required? (example: access control, lighting controls, HVAC controls) Indicate general accommodations required below and for all spaces that have special requirements, provide this information in Table 1.

Supervised monitoring of building. IDS at SIPRNet rooms. Office areas have automatic lighting controls with manual override as necessary. Automatic controls shall consist of an automatic time clock and/or occupancy sensors.

What are the lighting, temperature, humidity, air quality, ventilation and filtration requirements for all spaces? Indicate the default requirements below and for all spaces that have a requirement that differs from the default, provide this information in Table 1.

Lighting: : IESNA Lighting Handbook, IESNA RP-1-04, ASHRAE 90.1-2004

Temperature: See Table 5-1 in Statement of Work of RFP and Chapter 6 of the Statement of Work

Humidity: None
Air Quality: : ASHRAE 62.1-2004

Ventilation: : ASHRAE 62.1-2004

Filtration: As required to meet LEED V2.2 requirements and points

What are the acoustical requirements for all spaces? Indicate the default acoustical requirements below and for all spaces that have a requirement that differs from the default, provide this information in Table 1.

As indicated in Statement of Work..

What is the desired level of occupant ability to adjust systems controls? Indicate the default desired levels below and for all spaces that have a desired level that differs from the default, provide this information in Table 1.

Lighting: IESNA Lighting Handbook, IESNA RP-1-04, ASHRAE 90.1-2004 and as indicated in Statement of Work.

Temperature: Adjustable thermostats
Humidity: None
Air Quality: None

Ventilation: None

What, if any, specific types of lighting are desired? (example: fluorescent in 2x2 grid, accent lighting, particular lamps)

As indicated in Statement of Work.

4. Equipment and System Expectations

Indicate desired features for the following commissioned system: Space Heating

Desired Type: Per Statement of Work Heating will be provided by a central heating system.
Quality:

Preferred Manufacturer:
Reliability:
Automation:

Flexibility:
Maintenance Requirements:
Efficiency Target:

Desired Technologies:

Indicate desired features for the following commissioned system: Ventilation

Desired Type: Per Statement of Work

Quality:

Preferred Manufacturer:
Reliability:
Automation

Flexibility:
Maintenance Requirements:
Efficiency Target:

Desired Technologies:

Indicate desired features for the following commissioned system: Air Conditioning

Desired Type: Per Statement of Work Air conditioning will be provided by central cooling systems. Air Conditioning required in Modules and separate standalone systems in communications rooms.
Quality:

Preferred Manufacturer:
Reliability:
Automation:

Flexibility:
Maintenance Requirements:
Efficiency Target:

Desired Technologies:

Indicate desired features for the following commissioned system: Refrigeration

Desired Type: Per Statement of Work

Quality:

Preferred Manufacturer:
Reliability:
Automation:

Flexibility:
Maintenance Requirements:
Efficiency Target:

Desired Technologies:

Indicate desired features for the following commissioned system: HVAC Controls

Desired Type: Per Statement of Work

Quality:

Preferred Manufacturer:
Reliability:
Automation:

Flexibility:
Maintenance Requirements:
Efficiency Target:

Desired Technologies:

Indicate desired features for the following commissioned system: Domestic Hot Water

Desired Type: Per Statement of Work

Quality:

Preferred Manufacturer:
Reliability:
Automation:

Flexibility:
Maintenance Requirements:
Efficiency Target:

Desired Technologies:

Indicate desired features for the following commissioned system: Lighting Controls

Desired Type: As indicated in Statement of Work

Quality: : None identified

Preferred Manufacturer: : None identified
Reliability: : None identified
Automation: As indicated in Statement of Work

Flexibility: : None identified
Maintenance Requirements:
Efficiency Target: : None identified

Desired Technologies: As indicated in Statement of Work

Indicate desired features for the following commissioned system: Daylighting Controls

Desired Type: _____

Quality: _____

Preferred Manufacturer: _____
Reliability: _____
Automation: _____

Flexibility:_____
Maintenance Requirements: _____
Efficiency Target: _____

Desired Technologies: _____

Indicate desired features for the following commissioned system: Emergency Power

Desired Type: N/A

Quality:

Preferred Manufacturer:
Reliability:
Automation:

Flexibility:
Maintenance Requirements:
Efficiency Target:

Desired Technologies:

Indicate desired features for the following commissioned system: Other - _____

Desired Type: _____

Quality: _____

Preferred Manufacturer: _____
Reliability: _____
Automation: _____

Flexibility:_____
Maintenance Requirements: _____
Efficiency Target: _____

Desired Technologies: _____

5. Building Occupant and O&M Personnel Requirements

How will the facility be operated? Who will operate the facility?

Varies. DPW Contractor or staff

Will the facility be connected to an EMCS? If so, what are the interface requirements? (example: monitoring points, control points, scheduling)

See Statement of Work The project includes connections to an energy monitoring and control systems (EMCS).

What is the desired level of training and orientation for building occupants to understand and use the building systems?

Minimal for occupants. Per RFP.

What is the desired level of training and orientation for O&M staff to understand and maintain the building systems?

As indicated in Section CONSTRUCTION CLOSEOUT and Statement of Work

Table 1

Space	Use / Activity	Num of Occs	Special Occupancy Schedule	After Hours Use Reqmt.	Special Cooling Reqmt.	Special Heating Reqmt.	Special Humidity Reqmt.	Special Ventil./Filtration Reqmt.	Special Acoustic Reqmt.	Special Lighting Reqmt.	Special Occup Adjustability Reqmt.

APPENDIX N

LEED Requirements for Multiple Contractor Combined Projects

This circumstance does not apply to this project and no requirements are being provided.

APPENDIX O
LEED Strategy Tables

Not Used

APPENDIX P

LEED Registration of Army Projects

15 April 2010

Number of Registrations
Each building must be registered separately, except multiple instances of a standard building on a shared site may be registered as a single project. If a single registration for multiple buildings is chosen, all buildings under the single registration must earn exactly the same points. Do not register buildings that are exempt from a specific LEED achievement requirement.

Typical Registration Procedure
1. Login, complete the online registration form (see guidance below) at the GBCI LEED Online website http://www.gbci.org/DisplayPage.aspx?CMSPageID=174 and submit it online.
2. Pay the registration fee via credit card (USACE staff: credit card PR&C is funded by project design or S&A funds).
3. GBCI will follow up with a final invoice, the LEED-online passwords and template information.
4. The individual who registers the project online is, by default, the Project Administrator.

Completing the Registration Form

BEFORE YOU BEGIN:
Create a personal account with USGBC if you do not have one.
You will need the following information:
Project name as it appears in P2 (obtain from USACE Project Manager)
Building number/physical address of project
Zip code for Installation/project location
Anticipated construction start and end dates
Total gross area all non-exempt buildings in registration
Total construction cost all non-exempt buildings only (see Project Details Section instructions below)

ACCOUNT/LOGIN INFORMATION
1. The person registering the project **must have an account with USGBC** (login and password) to complete the form. Go to http://www.gbci.org/ , click on “register a project” at the drop-down menu for project certification (at the top of the page) and select “register now for LEED 2009” to start the project registration process. If you have an account, login with your email address and password and select “register new project” to proceed. If you do not have an account, you may select “register a new account” and follow the instructions. It is recommended that you create an account separately on the USGBC website before you start the form. IMPORTANT: USACE team members are members of USGBC and are eligible for Member prices. USACE team members registering projects should be sure to include the USACE Corporate Access ID in their personal account profile (if you do not have it contact richard.l.schneider@usace.army.mil or judith.f.milton@usace.army.mil for the number).
2. The Account/Login Information section is filled out by the person registering the project. It may be a Contractor or a USACE staff member.

ELIGIBILITY SECTION
Follow directions (accepting the terms and conditions)
Review your profile information and make corrections if needed

RATING SYSTEM SELECTION SECTION
Select single project registration and I know which rating system.
Select the rating system - currently only LEED-NC and LEED for Homes are approved for Army use without special approval.
LEED Minimum Program Requirements: select YES

RATING SYSTEM RESULTS SECTION

Confirm selected rating system.

PROJECT INFORMATION SECTION

Project Title: Begin the project title with a one-word identifier for the Installation. Do not include the word "Fort". After this match the project name used in P2 (contact the USACE Project Manager for this information) and identify the building being registered. Example: "Stewart 4th IBCT - DFAC".
Project Address 1 and 2: This is the physical location of the project. Provide building number, street address, block number or whatever is known to best describe the location of the project on the Installation.
Project City: Installation Name
State, Country, Zip Code: Self-explanatory
Anticipated Construction Start and End Dates: Self-explanatory – give your best guess if unknown. Note that required data entry format is: 1 or 2 digit month/1 or 2 digit date/4 digit year (example 3/23/2010)
Gross Square Footage: Provide total area all buildings in LEED project. Exclude the area of any buildings that are exempt from the LEED achievement requirement (for example, exclude an unconditioned storage shed to be constructed with a barracks complex).
Is Project Confidential: Indicate NO except, if project has security sensitivity (elements that are FOUO or higher security), indicate YES.
Notification of Local Chapter: Indicate NO unless Government/USACE Project Manager requests you to indicate YES.
Anticipated Project Type: Select the most appropriate option from the drop-down menu.
Anticipated Certification Level: Select the applicable option from the drop-down menu (Silver is the usual level).

PROJECT OWNER INFORMATION SECTION

Project Owner First Name, Last Name, email, phone, address: The Project Owner is the USACE Project Manager. Obtain this info from the USACE Project Manager.
Organization: U.S. Army Corps of Engineers. This field MUST be completed this way because it will be used as a search field by higher HQ to find all USACE registered projects. You may supplement it with district name at the end but DO NOT revise or use an acronym.
May we publish Owner information: Indicate NO
Owner Type: Pick Federal Government from drop-down menu.
Project Owner Assertion: Check the box

PAYMENT INFORMATION

Self-explanatory

APPENDIX Q
REV 2.1 – 30 SEP 2010
AREA COMPUTATIONS

Computation of Areas: Compute the "gross area" and "net area" of facilities (excluding family housing) in accordance with the following subparagraphs:

(1) Enclosed Spaces: The "gross area" is the sum of all floor spaces with an average clear height ≥6'-11" (as measured to the underside of the structural system) and having perimeter walls which are ≥4'-11". The area is calculated by measuring to the exterior dimensions of surfaces and walls.

(2) Half-Scope Spaces: Areas of the following spaces shall count as one-half scope when calculating "gross area":

- Balconies
- Porches
- Covered exterior loading platforms or facilities
- Covered but not enclosed spaces, canopies, training, and assembly areas
- Covered but not enclosed passageways and walks
- Open stairways (both covered and uncovered)
- Covered ramps
- Interior corridors (Unaccompanied Enlisted Personnel Housing Only)

(3) Excluded Spaces: The following spaces shall be excluded from the "gross area" calculation:

- Crawl spaces
- Uncovered exterior loading platforms or facilities
- Exterior insulation applied to existing buildings
- Open courtyards
- Open paved terraces
- Uncovered ramps
- Uncovered stoops
- Utility tunnels and raceways
- Roof overhangs and soffits measuring less than 3'-0" from the exterior face of the building to the fascia

(4) Net Floor Area: Where required, "net area" is calculated by measuring the inside clear dimensions from the finish surfaces of walls. If required, overall "assignable net area" is determined by subtracting the following spaces from the "gross area":

- Basements not suited as office, special mechanical, or storage space
- Elevator shafts and machinery space
- Exterior walls
- Interior partitions
- Mechanical equipment and water supply equipment space
- Permanent corridors and hallways
- Stairs and stair towers
- Janitor closets
- Electrical equipment space
- Electronic/communications equipment space

RMS SUBMITTAL REGISTER INPUT FORM

CONTRACT NUMBER

DELIVERY ORDER

TITLE AND LOCATION

Button <-----Right click for Instructions

SECTION	PARAGRAPH NUMBER	DESCRIPTION OF ITEM SUBMITTED	TYPE OF SUBMITTAL											CLASSIFICATION						REVIEWING OFFICE					
			01 - PRECON SUBMITTALS	02 - SHOP DRAWINGS	03 - PRODUCT DATA	04 - SAMPLES	05 - DESIGN DATA	06 - TEST REPORTS	07 - CERTIFICATES	08 - MFRS INSTRUCTIONS	09 - MFRS FIELD REPORT	10 - O&M DATA	11 - CLOSEOUT SUBMITTALS	FIO - FOR INFORMATION ONLY	GA - GOVERNMENT APPROVED	DA - DESIGNER OF RECORD APPROVA	CR - CONFORMANCE REVIEW	DA / CR	DA / GA	DO - DISTRICT OFFICE	AO - AREA OFFICE	RO - RESIDENT OFFICE	PO - PROJECT OFFICE	DR - DESIGNER OF RECORD	AE - ARCHITECT / ENGINEER
00 72 00	52.236-13	Accident Prevention Plan	X														X					X			
00 73 00	1.11	Dev. From Accept. Design. No Deviation from Contract					X											X				X		X	
00 73 00	1.11	Dev. From Accepted Design - Deviates from Contract					X												X			X		X	
00 73 00	1.17	Supplemental Price Breakdown	X											X								X			
00 73 00	1.18	SSHO Qualifications	X												X							X			
01 10 00	5.2.3.1	(if concrete pavement) Joint Layout Plan with design drawings					X										X								
01 10 00	5.5.2	Building Envelope Sealing Performance Testing						X						X								X			
01 10 10	***	Tests as Req by Codes - DOR Develops Test Program						X						X								X		X	
01 10 00	5.8.3	BAS Review Information		X														X		X		X		X	
01 10 00	5.8.3	BAS Performance Verification Test						X						X								X		X	
01 10 00	5.8.4	Testing Adjusting and Balancing						X						X								X		X	
01 10 00	5.8.5	Commissioning						X						X								X		X	
01 10 00	6.15	Environmental As Required for Site Specific					X										X					X		X	
01 10 00	6.16	Permits as required for Site specific					X										X					X		X	
01 10 00	5.10.2	Fire Protection Tests						X	X					X								X		X	
01 32 01.00 10	3.4.1	Preliminary Project Schedule	X												X							X			
01 32 01.00 10	3.4.2	Initial Project Schedule	X												X							X			
01 32 01.00 10	3.4.3	Design Package Schedule	X												X							X			
01 32 01.00 10	3.6.1	Periodic schedule updates from the Contractor	X												X							X			
01 32 01.00 10	3.7	Time Extension Request (Schedule)	X												X							X			
01 33 00	1.8	Submittal Register - DOR Input Required	X												X							X		X	
01 33 00	1.8	Submittal Register Updates (Design Packages, etc.)	X												X							X		X	
01 33 00	1.3.1	Substitution of Manuf or Model Named in Proposal		X	X													X				X		X	
01 33 16	1.2	Identify Designer(s) of Record	X												X							X			
01 33 16	1.1.2 / 3.2.4	Fast Track Design Package(s)					X										X			X		X			
01 33 16	1.2	Identification of all Designers of Record	X														X					X			
01 33 16	3.2.1	Site and Utility Des Package, incl. Substantiation					X										X			X		X			
01 33 16	3.2.2/3.5	Interim Des Subm Package(s), incl. Substantiation					X										X			X		X			
01 33 16	3.5.1	Drawings					X										X			X		X			
01 33 16	3.5.2.2	Sitework Design Analyses					X										X			X		X			
01 33 16	3.5.2.3	Structural Design Analyses					X										X			X		X			
01 33 16	3.5.2.4	Security Design Analyses					X										X			X		X			
01 33 16	3.5.2.5	Architectural Design Analyses					X										X			X		X			
01 33 16	3.5.2.6	Mechanical Design Analyses					X										X			X		X			
01 33 16	3.5.2.7	Life Safety Design Analyses					X										X			X		X			
01 33 16	3.5.2.8	Plumbing Design Analyses					X										X			X		X			
01 33 16	3.5.2.9	Elevator Design Analyses (as Applicable)					X										X			X		X			
01 33 16	3.5.2.10	Electrical Design Analyses					X										X			X		X			
01 33 16	3.5.2.11	Telecommunications Design Analyses					X										X			X		X			
01 33 16	3.5.2.12	Cathodic Protection Design Analyses					X										X			X		X			
01 33 16	3.5.3	Geotechnical Investigations and Reports					X										X			X		X			
01 33 16	3.5.4	LEED Submittals					X										X			X		X			
01 33 16	3.5.5	Energy Conservation Documentation					X										X			X		X			
01 33 16	3.5.6	Specifications					X										X			X		X			
01 33 16	3.5.7	Building Rendering					X										X			X		X			
01 33 16	3.2.4/3.7	Final Des Submittal Package(s), incl. Substantiation					X										X			X		X			
01 33 16	3.7.5	DD Form 1354 (Transfer of Real Property)											X				X					X			
01 33 16	3.7	Independent Technical Review					X										X			X		X			
01 33 16	3.2.5/3.8	Design Complete Submittal Package(s)					X										X			X		X			
01 33 16	3.3.3	Design and Code Review Checklists					X										X			X		X			
01 33 16	A-2.0	SID - Interim and Final (as applicable)			X	X	X								X					X		X			
01 33 16	B-2.0	FFE (as Applicable)					X								X					X		X			
01 33 16	F-3.1.3	BIM Model and data					X										X			X		X			
01 45 04.00 10	3.2	Design and Construction QC Plan	X														X					X			
01 57 20.00.10	1.2	Environmental Protection Plan	X														X					X			
01 78 02.00 10	1.2.1	Final as-Built Drawings/ BIM Model											X		X					X					
01 78 02.00 10	1.2.3.11	Non-Hazardous Solid Waste Diversion Reports							X					X								X			
01 78 02.00 10	1.2.7	Provide final as-built CADD and BIM Model files											X		X							X			
01 78 02.00 10	1.2.9	Provide scans of all other docs in Adobe.pdf format											X		X							X			
01 78 02.00 10	1.3.1	Equip-in-Place list of all installed equip and cost											X		X							X			
01 78 02.00 10	1.3.2	Data on equip not addressed in O&M manuals											X		X							X			
01 78 02.00 10	1.3.3	Final as-built specs - electronic files											X		X							X			
01 78 02.00 10	1.4.2.1	Warranty management plan - FAR 52.246-21											X		X							X			
01 78 02.00 10	1.4.2.1	Certificates of Warranty for extended warranty items											X		X							X			
01 78 02.00 10	1.4.2.1	Contractor's POCs for implementing warranty process											X		X							X			
01 78 02.00 10	1.4.2.1	List of each warranted equip, item, feature or system											X		X							X			
01 78 02.00 10	1.5	See also Section 01 10 00 par. 5.8.4 and 5.8.5											X		X							X			
01 78 02.00 10	1.6.1.2	Equipment O&M Manuals - 1 electronic / 2 hard copies											X		X							X			
01 78 02.00 10	1.7	Field Training DVD Videos										X		X								X			
01 78 02.00 10	1.8	Pricing of CF/CI and GF/CI Property											X	X								X			
01 78 02.00 10	1.11	List of Completed Cleanup Items											X				X					X			
01 78 02.00 10	1.12	Interim Form DD 1354											X				X					X			

APPENDIX AA
SPECIAL SAFETY REQUIREMENTS
3-September-2010

1. CONSTRUCTION SITE EMERGENCY RESPONDER REQUIREMENTS

In order to assure that Emergency Responders have the best possibility to access the construction sites the contractor shall insure that the following activities are completed:

(a) Each building for each contract shall be assigned a building number and address info from the DPW. This will be done in conjunction with the project preconstruction work. The building number and address will be provided by the Contracting Officer's Representative prior to any onsite work beginning. The DPW POC for obtaining this info is located in Room 129, Bldg 307, phone: 719-526-2491.
(b) An Emergency Access Site Plan shall be developed and provided for acceptance by the COR. The plan must show the location of the project on Ft Carson, include bldg # and address info and the latitude and longitude of the project. The plan must also include a plan view of the project site that indicates emergency access routes on the construction site. A copy of this plan will be provided to the Ft Carson Fire Department. The plan is to be updated throughout the project as required.

(c) Provide temporary signage at the site entrance from all public roads that enter the site that indicates the building name, building # and address. The signage for project sites with multiple building/ addresses must to be grouped together in a logical format. The signs from the public road need to be made of durable reflective material.

(d) Perform emergency access drills in conjunction with the Ft Carson Fire Department. The drills are to be repeated as necessary throughout the project duration. The contractor will provide "flagmen" to direct the emergency vehicles to the scene from public roads. Insure that all workers know nearby references such as established nearby building #s and street intersections. This can be accomplished by providing all workers with project specific emergency call cards. The workers should carry these cards at all times while on the site.

(e) Insure that access to all parts of the site is provided for emergency vehicles that meets the requirements of EM 385-1-1. This access must be maintained during winter and wet periods.

2. MONTHLY EXPOSURE REPORTS:

Monthly exposure data as required by EM 385-1-1 shall be entered directly in the QCS software database for exporting to the Corps of Engineers RMS database. Data shall be complete, kept current and provided on a monthly basis. This report is a compilation of employee-hours worked each month for all site workers, both prime and subcontractor.

APPENDIX BB
EXCERPTS FROM I3A TECHNICAL CRITERIA

3.7 Underground (Maintenance Holes, Cable Vaults, and Ducts)

Supporting documentation for the design and construction of maintenance holes, cable vaults, and duct systems is found in ANSI/TIA/EIA-758, *BICSI Customer Owned Outside Plant Telecommunications Cabling Standard;* Rural Utilities Service (RUS) Bulletin 1751F-643/RUS Form 515C; RUS Bulletin 1751F-644; and RUS Bulletin 1753F-151. [Text Deleted]

3.7.1 Maintenance Holes

Maintenance holes are used to facilitate the placement and splicing of cables. Telecommunications maintenance holes shall not be shared with electrical installations other than those needed for the telecommunications equipment.

Maintenance holes are reinforced concrete units provided with a removable lid that permits internal access to the housed components via ladder or rungs. The maintenance holes accommodate cables, splice closures, racking systems, and low-voltage electronic equipment. Maintenance holes shall be equipped with corrosion-resistant pulling irons and cable racks that are grounded and with a sump for drainage. The quality of the concrete pour and the construction of the maintenance hole shall be such that the rebar or visible rock shall not be seen in the surface of a maintenance hole wall. In other words, the pour shall not have any voids.

Maintenance holes shall be installed on a leveled, crushed, washed gravel base of sufficient depth, i.e., a minimum thickness of 6 inches (150 mm) under the entire maintenance hole, to allow for drainage and stability. Where maintenance holes are installed in roadways, the structure and lid (cover) shall support heavy vehicular traffic. [Text Deleted]

3.7.1.1 Type

The preferred maintenance hole is a pre-cast reinforced concrete, splayed or non-splayed, multi-directional type with cast-in single or multiple plastic terminators to accept the conduits. Thin concrete knockout sections may be provided for terminating multiple-bore conduits. The preferred maintenance hole interior size is 12 feet x 6 feet x 7 feet (3.7 m [length] x 1.8 m [width] x 2 m [height]). Other sizes may be used only with U.S. Government approval. Splayed maintenance holes shall be provided near DCOs and remote switching units (RSU), where future duct expansion is expected. Maintenance holes shall have a load rating of HS-20 for heavy vehicular traffic.

3.7.1.2 Basic Layout

Maintenance holes in main or lateral duct runs shall be placed as defined below. Measurements between maintenance holes are from lid-to-lid (center-to-center) (C/C), unless otherwise indicated. Measurements from maintenance holes to buildings, to pedestals, to riser poles, etc., are from the maintenance hole lid to the outside wall, bottom

of pole, etc. (center-to-point). New maintenance holes shall be placed to support the locations of junction points, offsets, load points, and curvature in the duct line.
The spacing of access points (maintenance holes or hand holes) in a maintenance hole and duct system is determined by the environment (containment area or range area); media to be installed (copper cables only, copper and fiber cables, or fiber cables only); proximity to cable origination points (DCO or nodes); and allowable pulling tension of the media. The following are a few design guidelines:

a. Maintenance holes and hand holes in duct systems in cantonment areas that have or will potentially have multiple cables (copper and fiber) shall not be spaced more that 600 feet apart.
b. Maintenance holes and hand holes in duct systems in sparsely populated areas or at the ends of runs that will contain only fiber or small copper cables (not to exceed 100 pair copper) can be spaced up to 1000 feet apart.
c. Maintenance holes and hand holes in duct systems in sparsely populated areas or at the ends of runs that will contain only fiber cables can be spaced up to 2000 feet apart.
d. Maintenance holes and hand holes used as splice points in direct buried systems (typically in ranges) can be placed as required (typically at the ends of reel splices).

The following are caveats:
a. Do not use a hand hole for copper cable splice points or for more than one fiber splice case.
b. Do not place maintenance holes or hand holes so far apart as to exceed the manufacturer's recommended pulling tension for the cables.
c. Maintenance holes and hand holes may be placed closer together to accommodate distribution designs.
d. The maintenance holes near a DCO or node need to be full-sized (6 feet x 12 feet x 7 feet H) due to existing or potential multiple cables and multiple splice cases.
e. Any deviations from these guidelines require prior approval of the U.S. Government.

3.7.1.3 Accessories

Each new maintenance hole shall be equipped with a lid, sump, pulling-in irons, ground rod, bonding ribbon, cable racks, and hooks. Accessories shall be designed for use in a telecommunications maintenance hole. Cable hooks shall be placed IAW RUS Bulletin 1751F-643, RUS Bulletin 1753F-151, and the Lucent Technologies Document 900-200-318, *Outside Plant Engineering Handbook*, October 1996, Practices 632-305-215 and 919-240-300, to support the weight of the cable and splice case.

a. Maintenance Hole Lids: A maintenance hole shall include a point of egress for maintenance personnel. The maintenance hole lid shall be circular and not less than 30 inches (765 mm) in diameter and shall not violate the H-20 load rating of the maintenance hole. Additional lids or oversized lids may be provided for maintenance holes with special uses, i.e., oversized maintenance holes, maintenance holes containing carrier or loading equipment, or maintenance holes located outside a DCO. The lid shall fit in a steel ring or frame and be equipped with a concrete collar to be at grade level, as required. The frame and collar shall be attached to the maintenance hole IAW the manufacturer's instructions,

but as a minimum, the lid shall form a watertight seal and shall resist lateral movement if accidentally bumped. When stacked, collar sections shall be precisely matched with each other to prevent snagging of personnel or equipment when entering or exiting the maintenance hole. There shall be no overhangs between collar sections.

b. Locking Covers: The first maintenance hole outside a DCO or wire node; maintenance holes at critical junctions; or maintenance holes equipped with carrier equipment will have a lockable cover. Additional maintenance holes requiring lockable covers may be identified as such in the Statement of Work (SOW)/Engineering Design Plan (EDP). The preferred lockable lid cover is one that utilizes a lever and clamp mechanism placed into a receiver that is installed into the cover. The mechanism will allow the cover to be replaced without indexing the cover to the frame. When locked, the mechanism will be flush with the frame surface, minimizing the potential for the cover to be dislodged. The bolt used to secure the cover is available in many configurations and can only be turned with a socket provided by the manufacturer. The U.S. Government will select the bolt configuration. A disposable tamper-evident plastic cap snaps into the lock body covering the recessed bolt head, keeping dirt and debris out of the bolt area. An alternative means of securing the maintenance hole utilizes an inner, water-resistant cover that can be locked by means of a General Services Administration (GSA)-approved, changeable combination lock. The U.S. Government will provide the locks.

c. Sump: A sump shall be cast into the floor of the maintenance hole. The floor shall slope toward the sump to provide drainage into the sump from all areas. The sump shall be approximately 13 in x 13 in (330 mm x 330 mm), or a 13-in (330-mm) diameter circle, and shall be 4 inches (100 mm) deep, covered with a removable perforated or punched plate to permit drainage. The cover shall be fastened to the housing by a chain, rope, or hinge.

d. Pulling-in Irons: Cable pulling-in irons shall be installed on the wall opposite each main conduit entrance location, 3½ to 9 inches (90-230 mm) from the floor of the maintenance hole and in line with the conduit entrance. The pulling-in irons shall be placed and embedded during the construction of the maintenance hole wall.

e. Grounding in maintenance holes: All new maintenance holes installed shall include ground rods and bonding ribbon. The ground rod and bonding ribbon may only be omitted when the following conditions apply:

(1) A maintenance hole has been designed and constructed with an integral ground system with all ironwork bonded together.
(2) The maintenance hole bears a visible manufacturer’s label certifying that the structure contains an integral ground system.
(3) U.S. Government approval has been obtained.

All existing maintenance holes that require new splices, or those where existing splices are opened, shall be bonded and grounded. If no bonding ribbon and ground rod exist, they shall be installed, and all other existing splice cases shall be bonded and grounded. New cables installed in maintenance hole and conduit systems shall be bonded and grounded a minimum of every 1,000 feet (305 m). In accordance with RUS 1751F-802 and National

Electrical Code, Article 250, the resistance for OSP grounding shall be nominally 25 ohms

f. Ground Rod: A ground rod of iron or steel that is galvanized or copper-clad and is a minimum of 5/8-in (16-mm) in diameter and a minimum of 9 feet (2.75 m) long shall be installed in the floor of each new maintenance hole. Four inches (100-mm) of the rod, plus or minus ½ inch, (1.3 mm) shall extend above the finished floor level. The rod shall not enter the maintenance hole more than 3 inches (80 mm) or less than 2 inches (50 mm) from the vertical surface of the adjacent wall. All maintenance hole splices shall be bonded to the maintenance hole ground. In existing maintenance holes, new ground rods and/or bonding ribbon shall be designed at each splice location if neither presently exists. The ground rod shall be installed and bonded IAW the National Electrical Code, Article 250.

g. Bonding Ribbon: A bonding ribbon shall be installed in all new maintenance holes. The bonding ribbon shall be attached to all rack anchors and be pre-cast into the maintenance holes. The bonding ribbon shall be installed around the interior of each maintenance hole so that splice cases can be bonded to it.

h. Hardware: A minimum of five cable racks, each containing at least 47 hook spaces mounted vertically, shall be provided on each long wall. Two of the cable racks shall be installed flush to the wall, and three shall be installed with standoffs to create splice bays. [Text Deleted] End wall maintenance hole racks shall be provided at the T-end of multi-directional maintenance holes. Corner racks shall be provided at the in-line end of the maintenance hole. Offset-cable racks shall set out from the wall a minimum of 3 inches (80 mm). Each cable rack shall be equipped with hooks to support all existing or new cables. If there are no existing/new cables, each rack shall be equipped with two cable hooks (minimum length 7½ inches, or 190 mm). All racks and hooks shall be of galvanized metal. A device or method to lock the hooks to the rack (i.e., Step Locks) shall be provided for the hooks that will support splice cases. [Text Deleted]

i. Water Resistance: Reasonable efforts shall be made to prevent water from entering a telecommunications maintenance hole. The manufacturer's instructions for installing a maintenance hole shall be followed. As a minimum, the following guidance shall apply as long as it does not violate a manufacturer's recommendations or warranty. Additional requirements may be identified in the design package.
(1) A water-resistant gasket or seal shall be placed between the sections of precast maintenance holes.
(2) Water-resistant gaskets or seals shall be placed between the lid frames, collars, and maintenance hole tops.
(3) The area around ducts penetrating the maintenance hole walls shall be sealed with a permanent, water-resistant material.
(4) Vacant ducts shall be sealed with a mechanical, screw-type, reusable duct plug.
(5) Ducts containing cables shall be sealed with water-blocking foam or another manufacturer-recommended sealant designed for this purpose.
(6) Ducts containing innerduct or multi-cell fabric mesh innerduct shall be sealed with the manufacturer's recommended materials or methods.