

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE	PAGE OF PAGES	
2. AMENDMENT/MODIFICATION NO. 0010		3. EFFECTIVE DATE 23-Mar-2004	4. REQUISITION/PURCHASE REQ. NO. W68MD9-3253-1172		5. PROJECT NO.(If applicable)	
6. ISSUED BY USA ENGINEER DISTRICT, SEATTLE ATTN: CENWS-CT 4735 EAST MARGINAL WAY SOUTH SEATTLE WA 98134-2329		CODE W912DW	7. ADMINISTERED BY (If other than item 6) See Item 6		CODE	
8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)			X	9A. AMENDMENT OF SOLICITATION NO. W912DW-04-R-0003		
			X	9B. DATED (SEE ITEM 11) 31-Oct-2003		
				10A. MOD. OF CONTRACT/ORDER NO.		
				10B. DATED (SEE ITEM 13)		
CODE		FACILITY CODE				
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS						
<input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer <input type="checkbox"/> is extended, <input checked="" type="checkbox"/> is not extended. Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning <u>0</u> copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.						
12. ACCOUNTING AND APPROPRIATION DATA (If required)						
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.						
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.						
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).						
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:						
D. OTHER (Specify type of modification and authority)						
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.						
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) FY 04 Whole Barracks Renewal, Ft Lewis WA -- See Continuation.						
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.						
15A. NAME AND TITLE OF SIGNER (Type or print)			16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)			
			TEL:		EMAIL:	
15B. CONTRACTOR/OFFEROR		15C. DATE SIGNED	16B. UNITED STATES OF AMERICA		16C. DATE SIGNED	
_____ (Signature of person authorized to sign)			BY _____ (Signature of Contracting Officer)		23-Mar-2004	

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

The following items are applicable to this modification:

CONTINUATION

The purpose of this amendment is as follows:

A. To attach a revised Section 00890.

B. The attached revised pages supersede and replace the corresponding pages. The attached revised specification sections supersede and replace the corresponding specification sections. Specification changes are generally identified, for convenience, by strikeout for deletions, and underlining of text for additions. All portions of the revised or new pages shall apply whether or not changes have been indicated.

C. NOTICE TO OFFERORS: Offerors must acknowledge receipt of this amendment by number and date on Standard Form 1442, BACK, Block 19, or by telegram.

D. All amendments are available for download this date on the Army Corps of Engineers website at <http://www.nws.usace.army.mil/ct/>.

Enclosure:

Revised Section 00890

SECTION 00890
OUTLINE SPECIFICATIONS

1.00 GENERAL.

a. Purpose

These outline specifications cover the range of products/work to be included in the project. The purposes for this listing are:

- to indicate the areas of work in this project;
- to broadly indicate the work within each section, and
- to indicate minimum acceptable requirements and to further detail those minimum requirements.

These outline specifications do not attempt to address product approval, shop drawings, actual installation or other items covered in the referenced specifications.

b. Fundamental Requirements

- (1) Specifications for this project shall be developed by editing the appropriate Unified Facilities Guide Specifications (UFGS) section, unless a section is provided in this RFP or a required section is not available within the UFGS.
- (2) All editing of guide specifications shall be performed as directed in paragraph 3.00 EDITING PROCEDURES.
- (3) This RFP also includes specification sections that are fully developed. The Contractor shall incorporate these complete specifications into the design without any further editing.
- (4) This project shall be 100% asbestos free. No asbestos or asbestos containing materials, in any amounts shall be allowed in the construction of this project.
- (5) There shall be zero lead content in any paints or coatings used in the construction of this project.
- (6) No PCB's shall be used in light ballasts in any amounts in the construction of this project.
- (7) The exterior wall sections, including the framing, waterproofing, and exterior and interior finishing, shall satisfy the design requirements for fire protection, heat loss, seismic and wind loads, environmental sustainability, security, force protection, and durability.
- (8) Manufacturer and/or trade names provided in these outline specifications are used to indicate the properties and quality of the product. Indication of manufacturer or trade names does not restrict the Contractor's ability to select other manufacturers that provide an approved and equal product.
- (9) In some instances, products, systems and/or components are listed for the purpose of conforming to or being compatible with existing products, systems and/or components at Fort

Lewis. These items shall be provided as indicated in paragraph 4.00 OUTLINE SPECIFICATIONS, or the contractor may demonstrate that a product, system or component is fully compatible with existing by meeting the following conditions:

- (a) Submittals as required were submitted and approved in accordance with specification Section 01330 - SUBMITTAL PROCEDURES.
- (b) The product, system or component has been successfully used before in a similar application.
- (c) The Contractor provides an owner/user point of contact (POC) for previous installations to the Government to verify customer satisfaction.
- (d) The system is tested operationally with the Installation System with which compatibility is required and all functions required are demonstrated to be operational

2.00 SPECIFICATIONS.

a. The Guide Specifications listed below are Unified Facilities Guide Specifications (UFGS) unless otherwise noted, and are to be used for all military construction. The design build contractor shall prepare all specifications by editing the appropriate UFGS. Edits shall be limited to additions and deletions required to match the products, systems or construction methodologies used. All bracketed ([]) information shall be edited. Language standard to the UFGS that is not design specific shall not be edited.

b. The Offeror/Contractor is to be aware that these specifications represent the latest versions available at the time of issue of this RFP and shall be used in preparing specifications for this project. Specifications are available in electronic format (SpecsIntact) from the Seattle District Corps of Engineers Internet homepage: (<http://www.nws.usace.army.mil>, under the tab "Construction Specifications).

c. COE Seattle District prepared guide specifications (designated NPS) are located at the Seattle District Corps of Engineers Internet web site (<http://www.nws.usace.army.mil/specs/specmain.htm>). Use of these specifications shall be limited to obtaining specific information for editing the UFGS.

d. Fort Lewis Installation specifications have been included in the following outline specifications. Requirements described in these outline sections shall be incorporated into the UFGS edits for project specifications.

e. For work not covered by an available UFGS section, the Offeror/Contractor may use other recognized industry sources of specifications unless noted otherwise. However, all sections so derived shall be written to match the three part (CSI) structure, adhere to the format of the UFGS, and be provided using the SpecsIntact software.

3.00 EDITING PROCEDURES

a. Use of the UFGS establishes an acceptable level of quality in materials, and workmanship. In preparation of design submittal specifications the referenced sections shall be edited to reflect project specific requirements. The Contractor shall be required to use unedited Unified Facilities Guide Specifications (UFGS) and designated unedited Corps of Engineers Guide Specifications (CEGS) sections for developing project specifications. UFGS are listed with

an A, an N, or no letter designation after the specification number. UFGS that cover similar subjects and those that have been identified for later consolidation into a single specification section are identified with an alpha designation ("A" for USACE, "N" for NAVFAC, and "F" for AFCEA) following the section number. Users of UFGS should first consider a UFGS without an alpha designation if one is available and next a UFGS with an alpha designation of their agency, and lastly a UFGS with an alpha designation of another agency. Specification paragraphs and subparagraphs shall not be rewritten to lessen the quality of the original technical specification sections. The technical guide specifications describe the type and quality of material and installation normally acceptable for Corps of Engineers Construction, and often represent specific agreement between the Corps and the applicable industry. The provision of the technical guide specification should not be changed without justification. Justifications and identification for additional materials shall be identified in the design analysis under the appropriate design discipline. Designer notes shall not appear in any design submittals. Any proposed deletions shall be clearly marked in all design specification submittals except for the 100% submittal. Only bracketed choices and inapplicable items shall be marked for deletion. These items shall be removed in corrected 100 percent specifications submittal. The Contractor shall complete the editing of all options in these specifications. Where designer notes are provided, the Contractor shall edit the choice in accordance with the recommendations and guidance of the Notes, except where specific guidance has been provided with this RFP (i.e. submittal paragraph).

b. When editing the UFGS specifications, the Contractor shall follow these rules:

(1) **QUALITY:** Specification paragraphs and subparagraphs shall not be rewritten to lessen the quality of the original technical specification sections. The technical guide specifications describe the type and quality of material and installation normally acceptable for Corps of Engineers Construction, and often represent specific agreement between the Corps and the applicable industry. The provisions of the technical guide specification shall not be changed without justification and written acceptance by the COR. Justifications and identification for additional materials shall be identified in the design analysis under the appropriate design discipline.

(2) **DESIGNER NOTES:** Notes to designers contained in the UFGS shall not appear in any design submittals. Where designer notes are provided, the Contractor shall edit the choice in accordance with the recommendations and guidance of the notes, except where specific guidance has been provided with this RFP.

(3) **BRACKETED INFORMATION:** Contractor shall select from options or complete information inserts at bracketed text. Unselected bracketed choices and inapplicable items shall be marked for deletion (strike through) in preliminary (65% and 95%) submittals. These items shall be removed in corrected 100% specification submittal. The Contractor shall complete the editing of all options in the 100% submittal.

(4) **ADDITIONS:** If the UFGS specification does not cover a feature that is in the project, new sentences and/or paragraphs shall be inserted in the proper locations to adequately cover the feature of work. Additions shall not lessen the quality of materials indicated by the specifications. If a new material is added, it shall be properly referenced in "Applicable Publications," "MATERIALS," "SUBMITTAL," "TESTS," and "INSTALLATION" paragraphs, as applicable.

(5) **DELETIONS:** Text material not applicable to the project shall be deleted as necessary. After deletion has been made to all inapplicable paragraphs, subparagraphs, choices, and

schedules from the body of the specifications (including but not limited to the correction of lists in "Submittals," "Tests," and "Installation" paragraphs), delete all non-applicable references listed in the preceding "APPLICABLE PUBLICATIONS" and "MATERIALS" paragraphs. Deletions shall not lessen the quality of materials indicated by the specifications.

(6) REFERENCES TO SPECIFICATION SECTIONS: The Contractor shall be responsible for coordinating references, along with the technical requirements, to specific specification sections (number and title) within the project specifications. Section references (title and number) shall be revised to reflect the titles and numbers of specification sections used.

(7) DEVELOPING ADDITIONAL PROJECT SPECIFICATIONS. If the need should arise for developing project specification sections for materials/items not covered by the UFGS, the Contractor shall develop specifications utilizing commercial Construction Specifications Institute (CSI), 16 Division, 3 Part Section Format. These specifications shall conform to the applicable criteria requirements indicated in the RFP. Adjust section numbers which conflict with the specifications used in the Project Specifications. Each of these developed specification sections shall be in the same format as the UFGS (including the submittal paragraph). Commercially available guide specifications such as "SpecText" published by The Construction Specifications Institute and "MasterSpec" published by The American Institute of Architects may be used. References to the "Architect/Engineer" and the "Owner" shall be changed to refer to the "Government" or "Contracting Officer," as appropriate. The specifications shall clearly identify, where appropriate, the specific products chosen to meet the requirements of the specifications. The Contractor shall be responsible for coordinating references, along with the technical requirements, to specific specification sections (number and title) within the project specifications. Section references (title and number) shall be revised to reflect the titles and numbers of specification sections used.

4.00 SUBMITTALS

a. Product literature detailing assemblies and materials to be utilized in the project may be submitted with specifications during the design phase. This advanced coordination may reduce review/evaluation time associated with the submittal process during construction. However, shop drawings, product and equipment data included and accepted with the specification acceptance does not constitute government approval of equipment, material or layout. This responsibility to meet the requirements of the RFP remains with the Contractor.

b. Refer to Section 00810 of this RFP for information related to submittal requirements. Initial submittals (65% level) of specifications shall contain clear notation of text that has been added or deleted. Text proposed for deletion shall remain until the submittal is accepted. Subsequent interim (95%) submittals shall accept previous edits and highlight changes made since the 65% submittal. All deleted/accepted text shall be removed in the 100% specification submittal. The Contractor shall complete the editing of all options in the 100% submittal.

5.00 FULL TEXT SPECIFICATIONS

a. Seattle District Corps of Engineers standard Division 1 and select prescriptive specifications are included following this section in full text. These specifications shall be applied to this contract as written and as with regards to materials, equipment, systems, workmanship, and other technical matters. For general, administrative and procedural issues the contract provisions specified elsewhere in the RFP and contract shall govern.

b. DIVISION 1: General Requirements

- 01001 Supplementary Requirements
- 01005 Site Specific Supplementary Requirements
- 01025 Payment
- 01035 Modification Procedures
- 01312 Quality Control System
- 01320 Project Schedule
- 01330 Submittal Procedures
- 01410 Environmental Protection
- 01415 Metric Measurements
- 01451 Contractor Quality Control
- 01452 Special Inspection for Seismic-Resisting Systems
(Provide special inspection in accordance with UFGS 01452A and the IBC.)
- 01501 Construction Facilities and Temporary Controls
- 01572 Construction and Demolition Waste Management
- 01670 Recycled / Recovered Materials
- 01701 Operations and Maintenance Manuals
- 01702 As Built Records and Drawings
- 01703 Warranty of Construction
- 01704 FORM 1354 CHECKLIST
- 01705 Equipment-in-Place List

6.00 OUTLINE SPECIFICATIONS

a. Incorporate all specific guidance and requirements listed below into the relevant specification section or sections. The sections listed below are not intended as an all inclusive compilation of the sections that will be required for this project. It is the responsibility of the contractor to ensure that specification sections are edited or developed as necessary.

b. All sections identified below are UFGS unless otherwise noted. In some instances, the UFGS list carries two versions of a section with a letter suffix of "a" for army or "n" for navy. Where this duplication occurs, the army version of all such sections shall be used.

c. Divisions 2-16: TECHNICAL

DIVISION 2: SITEWORK

02220 Demolition

Provide equipment and systems in accordance with UFGS 02220a and as follows:

All demolition work shall conform to EM 385-1-1 (1996) U.S. Army Corps of Engineers Safety and Health Requirements Manual. Work includes demolition, removal, and salvage of identified items and materials. Salvage shall be pursued to the maximum extent possible and shall be disposed of as directed. Burning and explosives will not be permitted. Provide equipment and labor necessary to safely demolish and remove identified utility services and flexible pavement.

Protection of Trees. Trees within the project site limits of work and which are indicated to be retained, shall be protected by a 1.8 M tall portable chain-link fence. The fence shall be securely erected at the dripline of individual trees or follow the outer perimeter of branches for clumps of trees. The dripline is defined as the circle drawn on the soil around a tree directly under its outermost branch tips. If the fence location is in conflict with demolition or construction operations, the Contractor shall bring the conflict to the attention of the CO for resolution. If it is not possible to protect the area within the dripline of trees, the Contractor shall hire a tree specialist (International Society of Arboriculture (ISA) Certified Arborist, urban forester or horticulturist) to evaluate the condition of the tree and the potential impact to it. The specialist, shall, in consultation with CO, make the final decision on whether the tree shall be removed or retained or if additional protective measures be implemented. Any tree designated to remain that is damaged during the work under this contract shall be replaced in kind in accordance with Section 01410 ENVIRONMENTAL PROTECTION.

02230 Clearing and Grubbing

Provide equipment and systems in accordance with UFGS 02230a and as follows:

Site Preparation recommendations shall be as provided in the furnished Geotechnical Report (see Section 00860 Attachment 8) and/or the Contractor furnished Geotechnical Report as applicable. The Contractor shall dispose of all organic material, resulting from clearing and grubbing operations, at a legal location outside Government-controlled land. The Contractor shall obtain approval of haul route and disposal site.

Trees, stumps, roots, brush, and other vegetation in areas to be cleared shall be cut off flush with or below the original ground surface, except such trees and vegetation as may be indicated or directed to be left standing. Material to be grubbed, together with logs and other organic or metallic debris not suitable for foundation purposes, shall be removed in areas indicated to be grubbed and in areas indicated as construction areas under this contract, such as areas for buildings, and areas to be paved. Existing trees to be preserved shall be crown-pruned to remove all dead, broken, or crossing branches within the crown of the tree. Pruning shall be accomplished by trained and experienced personnel in accordance with ANSI A300. Trees to remain shall also have all flagging, paint, hardware, or other man-made products removed prior to new exterior plant material installation. Limbs and branches to be pruned shall be neatly cut just outside the branch collar parallel with the trunk or adjacent larger branch; do not leave stubs. No tree wound dressing or paint shall be used. Trees and vegetation to be left standing shall be protected from damage incident to clearing, grubbing, and construction operations in accordance with Section 01410 ENVIRONMENTAL PROTECTION and 02220 DEMOLITION.

02300 Earthwork

Provide equipment and systems in accordance with UFGS 02300a and as follows:

Perform detailed site civil design required to establish elevations necessary for site preparation, excavation, borrow, filling, backfilling, compacting, and finished grading to construct the pavements and other site work. All fill material shall be free of contamination. The Contractor shall submit a proof of verification of the source of fill material or results of analytical testing. All work shall be in compliance with the furnished Geotechnical Report (see Section 00860 Attachment 8) and/or the Contractor furnished Geotechnical Report as applicable. Topsoil shall be obtained from sources outside the limits of Government-controlled land and shall be as specified in SECTION: 02921, SEEDING.

02315 Excavation, Filling, and Backfilling for Buildings

Provide equipment and systems in accordance with UFGS 02315a and as follows:

Provide excavation, filling, backfilling, compacting, and finished grading necessary to construct the finish grades indicated for structures. All work shall be in compliance with the furnished Geotechnical Report (see Section 00860 Attachment 8) and/or the Contractor furnished Geotechnical Report as applicable. Provisions for dewatering the building excavation, if required, shall be included.

02316 Excavation, Trenching and Backfilling for Utilities Systems

Provide equipment and systems in accordance with UFGS 02316a and as follows:

Perform excavating, preparation of pipe-laying surface, pipe bedding, backfilling and compaction. Requirements for underground mechanical and electrical work. Installation of marking tape for identification and detectability. All work shall be in compliance with the furnished Geotechnical Report (see Section 00860 Attachment 8) and/or the Contractor furnished Geotechnical Report as applicable. Open trench cuts crossing newly paved roads are permitted only to connect to an existing utility situated under the paved road. Any other crossings of newly paved roads shall be by jacking. Provisions for dewatering the utility excavation, if required, shall be included.

02510 Water Distribution System

Provide equipment and systems in accordance with UFGS 02510a and as follows:

Provide materials for and installation of water system to provide for domestic use and required fire protection to meet NFPA 24 and NFPA 13. NFPA 13 requires clearances around the main riser to prevent damage of piping subjected to earthquakes. Provide water service lines of ductile-iron pipe or polyvinyl chloride (PVC) plastic water main pipe. Provide water service appurtenances as required.

02531 Sanitary Sewers

Provide equipment and systems in accordance with UFGS 02531a and as follows:

Provide sanitary sewer system including pipelines, manholes, and clean outs connect to the existing sanitary sewer system. Provide mains or laterals of cast iron, or polyvinyl chloride (PVC) plastic pipe. Manhole inverts shall be channeled with a 2 percent cross slope. Provide surface clean outs surrounded by 600 mm square cement concrete pad in landscape areas and steel collars in vehicular pavement areas. All existing laterals and clay lines must be replaced.

Existing lines may be abandoned in place. All connections to the existing system must be made in manholes or have a manhole installed. Manholes shall be precast concrete.

02556 Gas Distribution System

Provide equipment and systems in accordance with UFGS 02556a and as follows:

Gas piping system shall be from the point of delivery, defined as the outlet of the meter set assembly as provided by Puget Sound Energy Services. The contractor shall contract Puget Sound Energy Services to install and own meter set assemblies and underground piping to the buildings.

The Contractor shall provide polyethylene propane/air gas piping (separate from the natural gas piping to be installed by PSE) from the point of connection to each building. Piping shall be sized for a supply pressure of ~~275 kPa (40 psig)~~ 206 kPa (30 psig). This connection shall be tied into the building piping system, downstream of the gas utility meter and shall be provided with a lockable manual valve.

02630 Storm-Drainage System

Provide equipment and systems in accordance with UFGS 02630a, with Stormwater Management Manual for Western Washington, and as follows:

Provide materials for and the installation of required site storm drainage system and connection to existing storm drainage system. The system shall include storm drain lines, branches, catch basins and manholes. Storm drain lines and branches shall be polyvinyl chloride (PVC) plastic, ductile-iron, or concrete pipe, as required by Ft Lewis design standards. Subsurface drainage, foundation drainage and/or under drainage system shall be perforated polyvinyl chloride (PVC) plastic piping. All underground perforated drainage systems shall include one layer of filter fabric wrapped around the pipe with a 150 mm overlap. Filter fabric shall be a pervious material manufactured into a non-raveling fabric with uniform thickness and strength meeting the requirements of the UFGS specifications. Catch basins and manholes shall be constructed according to Washington State standards and UFGS specifications. Storm drainage lines shall not be corrugated and must be smooth on the inside surface. All joints shall be watertight.

02722 Aggregate and/or Graded-Crushed-Aggregate Base Course

Provide equipment and systems in accordance with UFGS 02722a and as follows:

Provide materials and labor necessary for construction of base course for flexible pavement. Perform placement, compaction, and finished grading required to obtain the finished grade elevations for top of base course. Crushed aggregate materials shall be in compliance with the furnished Geotechnical Report (see Section 00860 Attachment 8) and/or the Contractor furnished Geotechnical Report as applicable. All work shall conform to the furnished Geotechnical Report (see Section 00860 Attachment 8) and/or the Contractor furnished Geotechnical as applicable.

02741 Hot – Mix Asphalt (HMA) for Roads.

Provide equipment and systems in accordance with UFGS 02741a and as follows:

Provide a binder and wearing course of plant mixed asphalt concrete (AC) placed on a prepared base in accordance with the Geotechnical Report. AC shall conform to the requirements stated in the Geotechnical Report. Provide tack coat for connection to existing flexible pavement and other applicable areas.

02763 Pavement Markings

Provide equipment and systems in accordance with UFGS 02763a and as follows:

Furnish and install pavement markings along the roadway surface as required for parking delineation. Parking delineation, arrows, stop bars, crosswalks and barrier strips shall be painted. Blue 100 mm x 100-mm thermoplastic street markers shall be provided for ease in finding fire hydrants, offset to side of hydrant.

02770 Concrete Sidewalks and Curbs and Gutters

Provide equipment and systems in accordance with UFGS 02770a and as follows:

Provide materials and labor necessary for construction of cement concrete sidewalks, and vertical curb and gutter. Provide aggregate base course for rigid pavement. Finish surface for concrete sidewalks shall be a broomed finish to achieve a non-slip surface. Sidewalks shall be a minimum of 100 mm thick. Vertical curb shall be according to design detail. Provide expansion joints between curbs and sidewalks and between buildings or walls and sidewalks. Provide expansion joints in all concrete sidewalks, curbs, and gutters at 9 meters maximum spacing and extended joints continuous through sidewalks, curbs, and gutters. Provide steel dowel reinforcing connecting sidewalk slabs at all expansion joints. Provide scored control joints at 2 meters maximum spacing.

Concrete Pattern, Color and Texture: Suggested sidewalk concrete patterning at Echo Block is for an imprinted random pattern of variegated-size, slate-textured stone block and natural mortar joints. The suggested color is integrally-colored 'tan' using an approved concrete dye. Pigmentation shall conform to ASTM C 979. If patterned concrete and pavers are used, it is suggested that the color of imprinted concrete sidewalks match the color of the concrete paving blocks.

Concrete Paving Blocks: Suggested concrete paving blocks at Echo Block are 450mmx450mm and/or 300mm x 300mm, colored "tan" with a shot-blasted finish and chamfer on all top edges. Pigmentation shall conform to ASTM C 979.

02811 Underground Sprinkler System

General: Final design shall include the size, flow, and static pressure of the new water service, and pressure loss calculations for the largest and furthest zones. Design shall be consistent with existing irrigation previously installed at Echo Block and Plate Number L103.

The system shall be a commercial-grade, underground, fully automatic and consistent with all local codes, including backflow prevention, and standard practices. All sprinkler heads shall be

pop-up type, (bubblers, spray, and gear rotors). Heads installed above ground on risers will not be approved. Drip irrigation is not allowed.

Materials: New irrigation system components shall include, but are not necessarily limited to: irrigation meters, pressure regulators (if required), backflow prevention devices, strainers, gate valves, brass master valves, plastic remote control valves, manual drain valves, quick couplers, concrete meter boxes, plastic valve boxes, irrigation piping (mainline and laterals), sleeves, miscellaneous fittings (see Plate Number L103 for use of sch 80 pvc and brass fittings, other fittings shall be sch 40 pvc), sprinkler heads, plastic nozzles, "triple swing" swing joints, , automatic controllers, rain sensors/ bypass switch, conduit, waterproof wire spice (wire nut type waterproof splice alone is not allowed), #14 U.F. wiring and any additional items needed to provide a 100% complete and operational system. Materials shall conform to applicable standards of the American Society for Testing Material and Underwriter's Laboratory.

All irrigation piping (mainline and laterals) and sleeving shall be schedule 40 PVC. CI 200 pvc pipe is not allowed. Sprinklers shall have plastic bodies and a pop-up stem of 100 mm in lawn areas, 150 mm in low groundcover areas, and 300 mm in shrub and groundcover areas. Remote control valves shall be commercial grade plastic and shall be located below grade in standard valve boxes. Backflow devices shall conform to local plumbing codes. Cold water meters shall be positive displacement type conforming to AWWA C708. Meter register may be round or straight reading type with register units as specified by the Contracting Officer. Meter shall have an electronic register capable of pulse output and all necessary wiring and accessories. The remote readout register wiring shall be routed to a location on the nearest building, as indicated by the Contracting Officer.

Installation: Irrigation work shall include excavation, trenching and backfilling, installation of all components, testing and inspection, clean up and maintenance of each system until final acceptance of the project. Sleeving under traffic loads shall have a minimum cover of 900 mm, sleeving under sidewalks, mainline, and control wires shall have a cover of 600 mm, and laterals shall have a cover of 300 mm. Each controller shall provide at least two unused stations with a minimum of 1 spare control wire per leg of mainline or a total minimum of 4 spare wires, which ever is greater. Install control wires in conduit when wires occur without irrigation piping. Control wires shall be looped as noted on Plate Number L103. Provide an adequate means for winter drainage of the systems. Bedding material for irrigation pipe shall be clean sand conforming to the following:

Sand:

Sieve Size	Percent Passing
13mm square	90-100
6mm square	65-100
U.S. No. 10	40-100
U.S. No. 50	3-30
U.S. No. 100	0-4
U.S. No. 200	0-3

All percentages by weight.

All irrigation pipe and sleeving shall receive 100 mm of import sand on all sides of each pipe. Maintain a minimum of 50 mm horizontal spacing between pipes in common trench. Vertical

stacking of lateral pipes is not allowed. A trace wire shall be installed in all trenches containing pvc mainline and/or laterals. Remaining backfill in trenches shall be free of rock or cobbles over 25mm in diameter. Remaining rock and debris will be hauled off site to an approved location.

Trenching within the drip line of existing trees to be preserved shall be done by hand. All irrigation mainlines and laterals passing under roadways or paving shall be placed in sleeves at least twice the diameter of the pipe(s) passing through it. Existing roadways shall not be cut to accommodate new irrigation piping. Paving which is damaged shall be restored to match existing when disturbed due to trenching or irrigation system installation.

Provide head-to-head coverage of all landscape areas and separate zones for shrub/groundcover and lawn areas. Include one quick coupler at each point of connection for winterization and one quick coupler at each end of mainline leg.

02870 Site Furniture

Echo Block:

Finish colors for site furniture shall be well coordinated with each other and with buildings to create a cohesive visual character. Suggested colors include black, bronze, and brown. Site furniture shall be permanently installed, low maintenance, with durable materials and finishes and shall be in compliance with force protection criteria.

COF Guidon Pedestal: Cast in place concrete pedestal shall be as shown on detail drawings. Concrete pad shall be formed and placed with reinforcement prepared for guidon as shown Plate C108. Finish of pedestal shall be smooth, light sandblast.

Battalion Headquarters Facility Sign: Battalion sign shall be 1.5 M high x 1.85 M long constructed of a concrete and brick base, mortared brick posts and tube steel mounting frame. Brick color shall match brick used for Battalion Headquarters Facility. Frame color shall be semi-gloss black. Construction and assembly shall be as shown on details in Attachment 7, Plate A0.1.

Company Operations Facility Sign: Individual Company sign structure shall be 1.06 M high x 1.6 M long consisting of two 200 mm round reinforced concrete posts, and two horizontal 38 mm x 75 mm x 11 Ga. Tube steel mounting frame. Frame color shall be semi-gloss black. Construction and assembly shall be as shown details in Attachment 7, Plate A0.1. Concrete finish shall be smooth, light sandblast. Sign mounts shall be 300mm x 1.1 M x 3.1 mm steel plate. Reinforcement shall be 4 – 10M (#3) rebar wound with #13 gauge spiral steel wire.

Echo and Alpha Block:

Trash Receptacles: Trash receptacles shall be a 121 L-size with a dome lid for all-weather protection. Concrete and pre-cast concrete materials shall not be used.

Benches: Benches shall be 1.8 M long and provided with and without backs as appropriate for different locations and functions. Concrete and pre-cast concrete materials shall not be used.

Bike Racks: Bike rack shall be constructed of heavy-duty quality steel.

Alpha Block:

Picnic Tables: Picnic tables shall be pedestal-style. Concrete and pre-cast concrete materials shall not be used.

Outdoor Barbecue Grills: Grill shall have an approximately 193,500 square millimeters grill area and be a heavy-duty rotating grill, sides and back of 10 gauge galvanized steel, bottom of 7 gauge steel with ash lip. Grill shall be pedestal style, universally accessible, and adjustable to three to four cooking heights. Grill package shall include a 10 gauge hot-rolled steel hot plate, approximately 150 mm x 350 mm, which attaches to standard grate and utility shelf. Finish shall be non-toxic, rust-resistant, baked-on, black dry powder. Support post shall be galvanized or baked-on, black dry powder-coated.

Picnic Shelters/Bike Rack Shelters: Shelters shall be appropriately sized to provide overhead protection to picnic tables and bike racks from weather. No wood or fiberglass shingles shall be used for roofing material.

Parcourse (exercise) stations: Parcourse shall have a minimum of 15 fitness events for the following exercises: Achilles, Sit and Reach, Leg Stretch, Hamstring Stretch, Thigh Stretch, Trunk Stretch, Vault Bar, Sit-up, Push-Up, Chin-Up, Knee Lift, Body Curl, Log Hop, Bench Dips, Bench Curl. Optional events may include Half-Knee Bend, Bench Leg Raise, or Bench Dips.

Parcourse stations shall meet industry safety standards. Station surface material shall be a mix of random-sized, engineered wood fibers of 250mm compacted depth. Fibar system 310 or approved equal. Standard wood mulch is not acceptable. Supplier shall provide test results for impact attenuation in accordance with ASTM F 1292 Standard Specification for Impact Attenuation for Surface Systems Under and Around Playground Equipment. Results shall be provided for new material and for 12-year old material. Drain system, mats, and materials shall be installed in accordance with manufacturer's instructions and specifications. Avoid contamination of material with sand, gravel, mud, or native soil. Individual parcourse stations shall be contained by concrete curbing.

02921 Seeding (Turf/Grass Areas)

Materials:

Turf seed mix shall be Festuca rubra var rubra or var. commutata (Creeping Red or Chewings Fescue) 50%, and Lolium perenne (Turf-type Perennial Ryegrass) 50%. Hydroseeding is an acceptable method for seeding. The seed mix shall not contain annual ryegrass or bluegrass species. Weed seed shall not exceed 1 percent by weight of the total mixture and shall be free of restricted and prohibited noxious weed seed. The seed shall also be free of crop seed, and inert matter shall not exceed 3% by weight of the total mixture.

The Field Grass mix shall be Festuca trachyphylla (Hard Fescue) 33.3%, Festuca ovina L. (Sheep Fescue) 33.3%, and Festuca rubra L. (Red Fescue) 33.3%

The Contractor shall provide temporary winter grass cover in areas where permanent seeding is delayed because of the season or construction staging. Temporary seed shall consist of Perennial Ryegrass (100%).

Topsoil for improved turf areas shall be applied at a minimum compacted depth of 150 mm. Topsoil for low maintenance (field and/or erosion control) grasses shall be applied at a minimum compacted depth of 75 mm.

Delivered topsoil shall meet the following requirements: Topsoil shall be sandy loam as described by USDA textural class. Topsoil shall have a maximum particle size of 13 mm with a maximum of 3 percent retained on a 6 mm screen and a minimum of 5 percent passing through a 1.25 mm mesh screen. Topsoil shall contain a minimum of 5% for turf and a minimum of 10% for planting beds (by weight as determined by a "loss on ignition" test) of mixed, composted, fine-particle organic matter. Topsoil shall be obtained from well-drained areas and shall not contain more than 5 percent water by volume. Topsoil shall be free from slag, cinders, stones, lumps of soil, sticks, roots, trash or other material over a minimum 13 mm diameter. Topsoil shall be free from viable plants or plant parts, and toxic substances or any other material that may be harmful to plant growth. The source of the organic matter shall have a carbon to nitrogen ratio below 25:1. If the plantings are composed entirely of plants native to the Puget Sound Lowlands region, the carbon to nitrogen ratio shall be below 35:1. The pH shall be between 5.5 and 7.5. Soluble salts shall not exceed 500 ppm. Each topsoil source shall be accompanied by a guaranteed statement of analysis listing the percent of organic matter and the pH.

Amendments shall be added as determined by soil test for types of plant materials specified. Peat shall not be used as a soil amendment/conditioner. Acceptable sources of organic matter shall be as described in the UFGS. Compost shall be supplied from a permitted compost facility in Washington State. PH adjuster shall be provided as recommended by soil testing results to register between 5.5 and 7.5.

Subsoils for improved turf areas shall be scarified a minimum depth of 100 mm to improve bonding with topsoil. If soils are compacted or impermeable, subsoils shall be scarified to a minimum depth of 150 mm.

Acceptance:

An acceptable stand of turf shall be defined as a thick, healthy and strong stand of turf and ground cover with uniform cover and deep root development throughout all designated areas. Bare spots shall be a maximum 150 mm square and the total bare spots shall not exceed two (2) percent of the total seeded area.

Field Grass Areas. A satisfactory stand of turf from the seeding operation for a field grass area shall be defined as a vigorous stand with uniform cover and deep root development throughout all designated areas with no bare spots greater than 200 mm square and the total bare spots shall not exceed five (5) percent of the total seeded area.

02922 Sodding

Materials:

Grass species for sod shall be *Festuca rubra* var *rubra* or var. *commutata* (Creeping Red or Chewings Fescue) 50%, and *Lolium perenne* (Turf-type Perennial Ryegrass) 50%.

See 02921 for topsoil requirements. Topsoil for sodded areas shall be applied at a minimum compacted depth of 150 mm. Subsoils sodded areas shall be scarified a minimum depth of 100 mm to improve bonding with topsoil. If soils are compacted or impermeable, subsoils shall be scarified to a minimum depth of 150 mm.

Acceptance:

Grass plants shall be evaluated for species and health. A satisfactory stand of grass plants from the sodding operation shall be living sod uniform in color and leaf texture. Bare spots shall be a maximum 50 mm square. Joints between sod pieces shall be tight and free from weeds and other undesirable growth.

02930 Exterior Planting (Trees, Shrubs, Ground Covers, and Vines)

Grading and Soil Prep: For all landscaped areas finish grades shall be free of undulations, irregularities or low spots that will collect standing water. Provide positive drainage, with not less than two- percent surface slope away from walls and structures and toward roadways and catch basins.

Materials:

Groundcover shall be installed at a size and a spacing on-center that will provide 80% coverage within two full growing seasons (March to October is one growing season) after planting. The minimum plant sizes shall be 100 mm pots for ground covers, #2 (2 gallons) for small and medium shrubs, #3 (3 gallons) for large shrubs, 75 mm for street trees, 63 mm caliper for deciduous trees (other than street trees), and 1.8 M height for conifers.

Staking and Guying: Staking and guying of trees shall not be required. Staking can impede normal tree growth and may lead to a weaker trunk, see paragraph UNHEALTHY PLANT MATERIAL. Tree staking and guying will be allowed upon approval by the Contracting Officer Representative if site conditions warrant their use (tree of substantial size, or extremely windy location). If tree staking and guying is approved, current industry standards shall be followed and materials used to tie the tree to the stake shall be flexible to allow movement all the way to the ground. Stakes and guying material shall be removed at the end of the 12-month plant establishment period.

Topsoil for planting areas other than turf shall be applied at a minimum compacted depth of 200 mm. See 02921 for topsoil quality requirements. Topsoil for planting areas (other than turf) shall contain a minimum of 10% by weight (as determined by a "loss on ignition" test) of mixed, composted, fine-particle organic matter.

Subsoils shall be scarified a minimum depth of 100 mm to improve bonding with topsoil. If subsoils are compacted or impermeable, they shall be scarified a minimum depth of 150 mm. Organic mulch shall be applied at a 75 mm depth for all trees, shrubs, and large ground covers,

and at a 38 mm depth for low-growing, fine-textured ground covers. Trees in lawn areas shall have a minimum 1.2 M diameter mulch bed.

Edging: A 150 mm-wide by 300 mm deep concrete mow edge shall be provided between all improved lawns and planting beds. A minimum 300 mm wide by 300 mm deep concrete mow edge shall be provided between building perimeters and lawns. All other edging including edging between low maintenance grasses and plant beds and to separate different types of ground covers shall be metal.

Geotextile: Geotextile (weed barrier fabric) shall be used only with rock mulch areas that do not contain plants. Geotextile shall be nonwoven; 100% polypropylene mat in accordance with ASTM D 5034 or ASTM D 5035. It shall be made specifically for use as a commercial-grade, landscape fabric around plant material. Nominal weight shall be a minimum 120 grams per square meter. Permeability rate shall be a minimum 1 mm per second.

Acceptance:

Unhealthy Plant Material: See also Statement of Work 3-11.3.10. Unhealthy Plant Material. Trees unable to remain upright (without staking) shall be removed immediately and replaced as soon as seasonal conditions permit.

DIVISION 3: CONCRETE

03100 Structural Concrete Formwork

Provide equipment and systems in accordance with UFGS 03100a and as follows:

See Section 03300. Provide form materials including forms, ties, releasing agents, and void materials.

03150 Expansion Joints, Contraction Joints, and Waterstops

Provide equipment and systems in accordance with UFGS 03150a and as follows:

See Section 03300. Provide expansion joint filler, accessories and waterstops. Proposed joint fillers to be submitted for approval.

03200 Concrete Reinforcement

Provide equipment and systems in accordance with UFGS 03200a and as follows:

See Section 03300. Provide reinforcing bars, dowels, welded wire fabric; wire ties, and supports.

03300 Cast-In-Place Structural Concrete

Provide equipment and systems in accordance with UFGS 03300 and as follows:

No polymer resins with styrene shall be used for any concrete floor coating. No cone ends shall occur on faces of concrete in exposed-to-view surfaces. Chamfer all external corners. Furnish formwork in largest practicable sizes to minimize number of joints. Support reinforcement with approved chairs, spacers or ties. Provide joint and waterstop location layouts for approval.

Concrete shall have a minimum 28-day compressive strength of 27.5 MPa (4,000 psi), except interior slabs shall have a minimum 28-day compressive strength of 34.5 MPa (5,000 psi). Exterior slab on grades shall have a 28-day minimum flexural strength of 4.1 MPa (600 psi).

In addition to concrete, provide curing materials, non-shrink grout, bonding agent, floor hardener, dry-shake floor topping, perimeter insulation, capillary moisture barrier, and vapor barrier.

03330 Cast-In-Place Architectural Concrete

Provide materials, equipment and systems in accordance with UFGS 03330a and as follows:

Cast-in-place concrete walls exposed to view shall have an architectural finish with close tolerances and defined requirements for minimization of surface defects. Utilize form liners to provide a shallow texture for visual interest. Protect concrete from staining and discoloration. Provide surface sealer on all areas to remain exposed in finished construction as early in construction as possible to avoid staining by weather and other trades.

DIVISION 4: MASONRY

04200 Masonry

Provide materials, equipment and systems in accordance with UFGS 04200 and as follows:

A full scale sample panel with all assembly conditions defined by this section shall be included.

Concrete masonry units and brick used on Echo Block buildings shall be unit size, color and texture matching like components used on the FY 02 and FY 03 COF and BN HQ buildings. Mortar shall also be colored to match existing. . Units exposed to the exterior shall be integrally colored. CMU shall be manufactured using carefully selected aggregates to provide coloration that meets North Fort and requirements. Lintel and bond beam units shall be used. Use steel lintels at openings in veneer walls.

Air cavity in veneer wall construction shall be not less than 25 mm wide. All through wall flashings shall be copper (16 ounce minimum) or stainless steel (0.015 inch minimum thickness) sheet metal.

Conduct continuous inspection. Testing of mortar, grout, masonry cores and units is required. Testing of units for efflorescence is required. Include descriptions of construction requirements and limitations for cold and hot weather construction.

Provide reinforcement, flashing materials, control and expansion joints, weep holes, veneer ties, and insulation. Tool finish exposed joints to a dense concave surface or other acceptable weather joint. Clean masonry with approved cleaners by unit masonry manufacturer and complying with masonry manufacturer's directions and technical bulletins. Remove all cleaner residues from masonry. Seal all exterior CMU surfaces with silane or siloxane based high solids, clear sealers.

04810 Nonbearing Masonry Veneer/Steel Stud Walls

Provide materials, equipment and systems in accordance with UFGS 04810 and as follows:

A full scale sample panel with all assembly conditions defined by this section shall be included.

Brick used on Echo Block buildings shall be unit size, color and texture matching like components used on the FY 02 and FY 03 COF and BN HQ buildings. Mortar shall also be colored to match existing.

Conduct continuous inspection. Testing of mortar, grout, masonry cores and units is required. Testing of units per ASTM C 67 for efflorescence is required. Rating shall be "not effloresced". Include descriptions of construction requirements and limitations for cold and hot weather construction.

Calculations demonstrating the insulation provides the specified U-value for heat transmission of the completed exterior wall construction shall be submitted for approval. This specification section includes: brick, mortar, joint reinforcement, cold-formed steel framing, insulation, exterior sheathing, moisture protection, veneer anchors, and connections.

DIVISION 5: METALS

05090 Welding, Structural

Provide materials, equipment and systems in accordance with UFGS 05090a and as follows:

All welds exposed in finish work shall be ground smooth. Defective or rejected welds shall be cut out and replaced.

05091 Ultrasonic Inspection of Weldments

Provide equipment and systems in accordance with UFGS 05091a and as follows:

Inspection and testing of shop and field welding shall be by an approved, qualified welding inspector. The welding inspector shall certify all reports and make a record of all welds. The welding inspector may use ultrasonic testing or any other approved aid to assure the adequacy of the weld. Welding inspector shall be certified to inspect in accordance with AWS D1.1.

05120 Structural Steel

Provide materials, equipment and systems in accordance with UFGS 05120 and as follows:

Provide mill analyses and test reports. A testing laboratory shall be used for all required tests and inspections. Provide and install all structural steel, tubing, and pipe, high strength bolts, carbon bolts, nuts, washers, and paint.

05210 Steel Joists

Provide materials, equipment and systems in accordance with UFGS 05210a and as follows:

Manufacturer's certification required. Provide all accessories, extended and special ends and ceiling extensions as required. Do not apply construction loads until bridging and anchorages are completed.

05300 Steel Decking

Provide materials, equipment and systems in accordance with UFGS 05300a and as follows:

Steel Roof Deck: Provide fire resistance label and acoustical insulation strips as required. Provide adjustment plates, closure plates, accessories, and lateral and uplift attachment. Touch-up shop paint after installation. Clean field welds and abraded areas.

05400 Cold Formed Steel Framing

Provide materials, equipment and systems in accordance with UFGS 05400a and as follows:

Include all material requirements for studs, tracks, bridging and other miscellaneous light gauge framing. Identify component size and material properties for each type and variety. All stud walls to be non-loadbearing. Provide bracing for all stud walls that do not extend to structure.

05500 Miscellaneous Metal

Provide materials, equipment and systems in accordance with UFGS 05500a and as follows:

Welds to be continuous, ground smooth and flush. Exposed joints to be "hairline" quality. Miscellaneous metals can include the following: screens, gratings, shelf angles, ladders, ladder cage, steel stairs, safety nosings, handrails, guardrails, pipe sleeves, pipe bench stanchions, pipe post bollards, water heater supports, sill angles, corner guards, access doors and panels, wire and expanded metal partitions, ornamental grilles, expansion joint covers, seismic joint covers, trench covers, jambs, and backing for overhead rolling doors. Separate miscellaneous metal from dissimilar metals and from products containing lime or other substances, which will cause damage (galvanic corrosion) to occur. Include material and method of attachment to each substrate encountered for all miscellaneous metal components. Include finish requirements or reference finishes located in other specification sections.

05810 Seismic Control Joints

A UFGS section does not exist for this material. Provide materials, equipment and systems as follows:

Where structures require significant use of seismic control joints develop a stand alone section to permit complete description of joint and joint cover requirements. Coordinate the use of preformed metal, and elastomeric seals with location and exposure. Identify joint cover assemblies for use on walls, ceilings and floors of each material type encountered. Provide specific material and construction requirements for fire barrier construction.

DIVISION 6: WOODS & PLASTICS

06100 Rough Carpentry

Provide equipment and systems in accordance with UFGS 06100 and as follows:

Wood frame construction is prohibited in all building types in this project. Rough carpentry shall be limited to miscellaneous blocking, nailer and trim uses as allowed by the IBC. Material shall bear the grade mark, stamp or other identifying marks indicating grades of material and rules of standards under which produced. Flush mounted accessories, builders hardware, casework, projection screens and marker boards shall be secured to wood blocking. Minimum size acceptable is 50 mm X 100 mm for dimensional lumber or 12 mm thickness for plywood. Blocking shall be rigidly attached to minimum of two studs. Use of gauge metal banding, hollow wall, or gypsum wallboard anchors is expressly forbidden.

06200 Finish Carpentry

Provide materials, equipment and systems in accordance with UFGS 06200a and as follows:

Wood exposed to the exterior is prohibited in the construction of any building. Use of vinyl siding is prohibited. Materials shall bear the grade mark, stamp or other identifying marks indicating grades of material and rules or standards under which produced. Finish carpentry includes trim, chair rails, windowsills, built-in cabinets, counter tops, plastic laminate, and utility shelving. Coordinate finish requirements between this section, painting section and color schedules.

06410 Laminate Clad Architectural Casework

Provide materials, equipment and systems in accordance with UFGS 06410a and as follows:

Laminate clad casework shall be the standard in barracks, COF and utility areas of BN HQ facilities. Design and specify to maximize durability and easily maintained appearance for all cabinetry and associated hardware. Use AWI standards (custom is minimum grade) to control quality.

06415 Custom Casework

A UFGS section does not exist for this construction. Provide materials, equipment and systems as follows:

Custom casework, using wood exposed to view, shall be the standard in Command and Public Access areas of the BN HQ. Casework items would include features such as bulletin boards, break room cabinetry, display cases, benches and similar built-in items. Use AWI standards (custom is minimum grade) to control quality.

06610 Fiber Reinforced Plastic (FRP) Fabrications

A UFGS section does not exist for this construction. Provide materials, equipment and systems as follows:

FRP fabrications were used in previous Whole Barracks Renewal projects to provide Neo-Georgian period detailing elements such as porticos, pilasters, fascias and soffits on barracks and SCB buildings. Fabrications shall be glass fiber reinforced type with a molded surface coat

over polyester resin laminate interior. Coordinate requirements for structural framing and similar backup structures.

06650 Solid Polymer Fabrications

Provide materials, equipment and systems in accordance with UFGS 06650 and as follows:

Provide backsplashes and end/side splashes at all countertop locations where water is present. Review and select finished surface matte/gloss range consistent with high traffic low maintenance environments. Composite countertop and sink constructions are prohibited.

DIVISION 7: THERMAL & MOISTURE PROTECTION

07110 Bituminous Dampproofing

Provide materials, equipment and systems in accordance with UFGS 07110a and as follows:

Bituminous dampproofing shall be provided on the exterior face of structural CMU walls used in veneer wall systems. Dampproofing shall be fibrated type.

07131 Elastomeric Membrane Waterproofing

Provide materials, equipment and systems in accordance with UFGS 07131 and as follows:

Elastomeric membrane waterproofing shall be provided on the exterior face of any foundation walls (such as the bottom of elevator shafts) or site features such as utility vaults extending below the water table.

07132 Bituminous Waterproofing

Provide materials, equipment and systems in accordance with UFGS 07132a and as follows:

Submit manufacturer's data including technical information, which indicates full compliance with this section and manufacturer's installation instruction. Bituminous waterproofing shall be provided on the below grade exterior face of perimeter foundation walls located above the water table.

07210 Building Insulation

A UFGS section does not exist for this construction. Provide materials, equipment and systems consistent with language used in UFGS sections 07212 and 07214 and as follows:

Section purpose is to consolidate requirements for insulation. Develop section to include all insulation types and locations except for insulation in masonry veneer walls, roof assemblies and Exterior Insulation and Finish System (EIFS) that may be performed by separate trades. Polyisocyanurate rigid insulation ASTM C1289, Type I or II, and Class 1 (having a minimum recovered material content of 9 percent by weight of core material in the polyisocyanurate portion). For polyisocyanurate the maximum design R-value per 25 mm of insulation used shall be 7.2. Facings shall be non-asphaltic, glass fiber reinforced.

Provide thermal resistance values as indicated on drawings. Mechanical attachment as recommended by insulation manufacturer. Vapor retarder per ASTM D4397 and UFGS, 6-mil thick polyethylene sheeting. Vapor retarder coverage shall be 100% with seams lapped to the next framing member, sealed with an approved sealant.

Foundation perimeter and under slab on grade insulation shall be extruded polystyrene.

Clearly distinguish between insulation types used for thermal, acoustic, fire separation or combination purposes and their locations in the work.

Building insulation shall comply with building code limitations on flame spread and smoke generation as appropriate to type, location and fire rating of assembly.

07220 Roof Insulation

Provide materials, equipment and systems in accordance with UFGS 07220 and as follows:

Attachment of insulation shall meet U.L. Class 1-90 uplift requirements as demonstrated by testing. Provide polyisocyanurate rigid board insulation for use above a roof deck. Polyisocyanurate insulation shall conform to ASTM C 1289, Type II, and Class 1 (having a minimum recovered material content of 9 percent by weight of core material in the polyisocyanurate portion). For polyisocyanurate the maximum design R-value per 25 mm of insulation used shall be 7.2. Facings shall be non-asphaltic, glass fiber reinforced. Insulation attachment method coordinated with standing seam metal roof system requirements for uplift resistance.

Roof insulation shall comply with building code limitations on flame spread and smoke generation as appropriate to type, location and fire rating of assembly. Provide non-combustible sheathing between flammable insulation and occupied areas where required to meet code requirements for material or performance.

07240 Exterior Insulation and Finish System

Provide materials, equipment and systems in accordance with UFGS 07240 and as follows:

Require third party inspection by certificated inspector. Require certification of installer by the system manufacturer. Require full scale sample wall mock up with all surface/flashing conditions in the work.

EIFS shall be Class PB with provision for internal water drainage. All EIFS installed within 3 000 mm of grade shall be Class PM with provision for internal water drainage. Color and finish shall match existing surfaces on Echo Block buildings.

07322 Concrete Tile Roofing

Provide materials, equipment and systems in accordance with UFGS 07320N and as follows:

Edit all references to clay tile systems to restrict the roof system to concrete tiles. Tiles shall match type, size and color used in existing construction on Echo Block.

Eave and valley flashing shall be 20 ounce minimum copper sheet. All other roof flashing shall be 16 ounce minimum copper sheet. At eaves, rakes, valleys ridges and roof to vertical surface intersections install self-adhering, cold applied membrane consisting of polyethylene film and rubberized asphalt with minimum thickness of 1 mm. Width of strip at eaves, rakes, ridges and valleys shall be 900 mm minimum.

Require a double layer of roofing felt underlayment, except for single layer above self-adhering membrane.

Minimize use of wood materials in roof system. Utilize metal hat channels or similar material for batten strips and nailers. Battens shall use roof manufacturer's standard shimmed application for full drainage.

07413 Metal Siding

Provide materials, equipment and systems in accordance with UFGS 07413a and as follows:

Metal siding shall be steel in minimum 26 gauge with a polyvinylidene fluoride (PVF2) factory finish. Siding shall be overlapping sheet design with concealed fasteners. Include requirements for all flashing, trim, closure strips and miscellaneous components accessory to siding system. Siding shall include a ribbed profile to minimize the visual effects of "oil canning" and similar surface distortion.

Metal siding may be prefabricated insulated "sandwich" panels with exterior and interior metal siding bonded to a rigid foam filler. Foam shall use a blowing agent that minimizes outgassing and resultant blistering of panel face skin.

07416 Structural Standing Seam Metal Roof (SSSMRS) System

Provide materials, equipment and systems in accordance with UFGS 07416a and as follows:

Metal roof system shall be a fully integrated design, with all components provided by a single manufacturer and installed in the same configuration as originally tested for conformance with uplift criteria. Require submittal of manufacturer's certification of conformance with specification. Roof panels shall be minimum 24 gauge, with 38 mm (1-1/2 inch) minimum height standing seam and concealed fastener clips. Finish shall be polyvinylidene fluoride (PVF2) coating in color scheduled. Include requirements for all flashing, trim, closure strips and miscellaneous components accessory to the roof system.

07530 Elastomeric Roofing (EPDM)

Provide materials, equipment and systems in accordance with UFGS 07530a and as follows:

Elastomeric roofing is used in limited areas on the COF and BN HQ designs utilized in FY 02 and FY 03 projects. General use of elastomeric/low slope roofs as the primary roofing system is prohibited on Echo Block.

Membrane installation method shall be fully adhered. Where membrane is used below walkway pavers, use paver system approved pedestals and protection fabric to reduce risk of membrane damage.

07600 Sheet Metal Work, General

Provide materials, equipment and systems in accordance with UFGS 07600a and as follows:

This section includes, but is not limited to: flashing not related to roof or wall systems, sheet metal expansion joints, gutters and downspouts, and miscellaneous trim. Separate flashing and sheet metal from dissimilar metals and other construction materials, which will cause galvanic corrosion to occur. Fabricate architectural sheet metal to comply with the recommendations of SMACNA's Architectural Sheet Metal Manual. Coordinate requirements for paint finished versus mill finished materials.

Provide clear cross reference to flashing requirements for masonry construction and roofing that appear in other specification sections.

Specify requirements for splice joints, end dams and similar fabrication procedures for all through wall and exposed to the weather flashing types.

07730 Fall Protection Anchors

A UFGS section does not exist for this construction. Provide materials, equipment and systems as follows:

Coordinate with detailing of properties of anchors and connection of anchors to structural frame of roofs. Anchors shall be specified to be consistent with the requirements of OSHA regulation (29 CFR 1926.502). Other design requirements: Anchors and attachment to roof substructure shall have a minimum tensile strength of 22.2 kN (5,000 pounds) and shall not deflect more than 1 mm under a 10kN (2,250 pound) load. Anchor shall resist a 1.8 meter free fall of a 100 kg attached load. Anchorage shall incorporate an attachment point for a locking snap hook lanyard. Attachment point shall be at least 200 mm above adjacent roof surface. Spacing of anchors along ridge lines shall be no greater than 4 000 mm. Specify anchors to be stainless steel type 304 or 304L with series 300 stainless fasteners.

07840 Firestopping

Provide materials, equipment and systems in accordance with UFGS 07840a and as follows:

Provide clear correlation between types of firestopping and locations (penetrations, gaps, joints, etc.) where they are to be used. List alternative systems if more than one type is acceptable. Reference indications of fire rating on drawings for all walls, floors and miscellaneous assemblies as appropriate. Indicate locations where firestopping shall be finished to match adjacent construction for aesthetic reasons.

07900 Joint Sealing

Provide materials, equipment and systems in accordance with UFGS 07900a and as follows:

Sealant and related accessories shall be compatible with substrate and appropriate for each application. Caulking shall be polyurethane type. No silicone caulking to be used. Provide a

table listing sealant locations and/or the materials adjacent to the sealant joint generically, the acceptable products for use at that type of location and color matching requirements, if any.

DIVISION 8: DOORS & WINDOWS

08110 Steel Doors and Frames

Provide materials, equipment and systems in accordance with UFGS 08110 and as follows:

Doors and frames shall be factory fabricated in accordance with SDI-100 and the additional requirements of this specification section. Door grade shall be interior doors: heavy duty (Grade II), exterior doors: extra heavy duty and galvanized (Grade III, insulated). Interior and exterior doors shall have no visible seams on any face, edge, top or bottom. Both top and bottom of the door shall be closed flush. Doors and frames located on the exterior, and at laundry, toilet, locker, and shower rooms shall be galvanized steel ASTM A 653/A 653M, coating designation G90.

Frames shall be at least one standard gauge heavier than associated door. All frames shall be grouted. Frames in masonry or masonry veneer walls shall be coated with bituminous mastic on interior face and fully grouted. Frames for interior doors shall be grouted with gypsum type grout. Fort Lewis preference is to use removable mullions for door pairs rather than meeting stiles. Welded frames are required at all doors on the exterior, at corridors, transoms, sidelights, cased openings and interior glazed panels.

Where labeled openings occur, coordination is required for labeled assembly (door, frame, and hardware), not merely labeled items within the assembly. Doors and frames shall bear the specific labels as required for the rated openings. Require labels to be protected so as to be clearly legible after all painting is concluded. Coordinate requirements with Section 11025.

If used, include specification for interior windows fabricated with steel frames with removable stops.

08120 Aluminum Doors and Frames

Provide materials, equipment and systems in accordance with UFGS 08120 and as follows:

Project design wind load shall be specified. Design shall incorporate durability consistent with the occupants of the facilities, do not use narrow styles, clearly specify reinforcing requirements at hinges, pivots, closers and pulls. Exposed aluminum shall have an anodized finish.

08210 Wood Doors

Provide materials, equipment and systems in accordance with UFGS 08210 and as follows:

Wood doors shall be 45 mm thick, 2130 mm high, 5-ply, flush, solid core units. Doors to receive paint finish shall be economy grade, doors receiving natural finish shall be custom grade, birch veneer. Door finish shall be a submittal item for acceptance by the government. Doors shall be rated as and where required by Fire Codes. Specify STC rating for all doors in walls where sound control is required.

Use of wood doors on building exteriors is prohibited. Hollow core doors are prohibited.

Coordinate specification with door schedule information showing door number (keyed to Room number), size and thickness, door type, material, finish fire label requirement, hardware set number, and door frame callouts.

08331 Metal Rolling Counter Doors

Provide materials, equipment and systems in accordance with UFGS 08331a and as follows:

Rolling counter doors shall be galvanized steel construction with baked enamel finish. Operation shall be manual push up. As a safety feature provide internal backcheck mechanism to avoid gravity free fall closing of door. At rated wall construction coordinate specification of rated door panel, hardware and means of activation. Interlock door function with fire alarm system as required by code. Door shall have key operated cylinder locks accessed only from the secured room side of the door.

08520 Aluminum and Environmental Control Aluminum Windows

Provide materials, equipment and systems in accordance with UFGS 08520a and as follows:

Provide aluminum fixed and operable windows that conform at minimum to AAMA 101 HS-HC40 performance class or to performance class consistent with design pressure, whichever is greater. Minimum condensation index rating of 75. All venting windows shall be equipped with insect screens. Minimum 10 year warranty by manufacturer. All exterior windows shall have at minimum nominal 1" insulated, low e glazing. Interior pane shall be 1/4" minimum thickness laminated glass. Window frames shall be anodized or have polyvinylidene fluoride resin color finish. Finish/color shall be submitted for government acceptance. Coordinate security requirements with Section 11025.

08550 Wood Windows

Wood windows are prohibited by the DOD Minimum Antiterrorism Standards for Buildings (UFC 4-010-01).

08560 Plastic (Vinyl) Windows

Plastic and vinyl windows are prohibited by the DOD Minimum Antiterrorism Standards for Buildings (UFC 4-010-01).

08600 Skylights

Provide materials, equipment and systems in accordance with UFGS 08600.

08710 Door Hardware

Provide materials, equipment and systems in accordance with UFGS 08710 and as follows:

Specified hardware shall be coordinated to conform to the requirements listed in section 00860 – Chapter 5 of this RFP.

Comply with all ANSI/BHMA and DHI requirements for commercial grade, heavy-duty hardware and with NFPA requirements for fire and life safety. A master keyed locking system shall be provided for all doors, and shall be compatible with Best locking system to match the current Fort Lewis locking system. Cylinders and cores shall be six-pin. Cylinders shall be the product of one manufacturer. Cores shall be the product of one manufacturer. Cores and keys/keyways shall be fully integrated with and provide seamless extension of the existing master keying system. Construction interchangeable cores shall be provided. Construction cores shall be returned to the contractor after final acceptance and keying. Disassembly of knob or lockset shall not be required to remove core from lockset. All locksets, exit devices, and padlocks shall accept same interchangeable cores. Provide permanent cores, keys, and accessories prior to final inspection.

Each core KD – four keys
Each set KA – four keys
Construction keys – four total
Blank keys – four per core

Mounting height of hardware to be industry standard. All doors shall be operable from the room side without the use of a key, special effort, or knowledge. Hardware shall meet ADAAG requirements.

Incorporate the following Fort Lewis design standards into the hardware specification:

1.5 QUALITY ASSURANCE

Specify and schedule all hardware for aluminum doors in Section 08710. Require all hardware for aluminum doors to be coordinated and supplied by the aluminum door manufacturer.

1.7 CONTROL OF LOCK CORES AND KEYING

The contractor shall provide all hardware and construction (temporary) cores required to secure buildings, utility access and related work throughout the construction period. Construction cores shall have a bright color on their exposed face for ease of identification. During construction the contractor shall meet with representatives of the contracting officer, Public Works Lock Shop and the user to develop a keying schedule. This schedule shall be submitted for approval in accordance with Article: Submittals. The contractor shall provide final lock cores, complete, pinned and combined, with cut keys as specified. All final keying and combining shall be performed by a licensed, bonded locksmith approved by the contracting officer. Upon acceptance of the facility for occupancy, the contractor shall replace construction cores with final cores in the presence of the government inspector and a Public Works locksmith, test each lock for proper operation and deliver any permanent or control keys to the inspector. Prior to core change out the contractor shall provide the government, by security shipment, with keys tagged with identifying labels in the quantities indicated.

2.3 HARDWARE ITEMS

Include items 1-5 listed "For projects at Camp Lejeune"

Add to item 3. All cylinders shall be keyed to A-2 system specifications. (A-2 system specifications are available at <http://www.lab-lockpins.com/pinsicore.htm>).

2.3.4 Locks and latches

To the maximum extent possible, locksets, latchsets and deadbolts shall be the product of a single manufacturer. Bored lock and latchsets are preferred. All cylinders shall be keyed to A-2 system specifications available at <http://www.lab-lockpins.com/pinsicore.htm>.

Add the following article for room module entrance locks:

2.3.4.x Programmable Pushbutton Locks

Electronic (stand alone battery power) cylindrical lockset with clutch mechanism shall comply with ANSI/BHMA 156.2, Grade 1 (extra heavy duty). Latchbolt shall be 18 mm throw with 70 mm backset. Latchbolt shall engage manufacturer's standard strike plate and matching strike box. Lock shall be powered by internal batteries providing 4 years of operation. All lock operation code entry and programming shall be performed using a 12 button keypad. Front housing shall also provide red and green indicator lights and an acoustic device to signal lock status to the user. Lever handles shall comply with Americans with Disabilities Act (ADA). Design of lever shall be of single piece construction without any return at the end. Outside lever shall be connected to a heavy duty clutch mechanism that will permit turning the lever without retracting the latch in the locked position. Inside and outside levers shall operate independent of each other. Inside lever provides free egress at all times. Unlocking angle of rotation should not exceed 45 degrees. Outside lever shall accommodate an A-2 SFIC. Core shall allow mechanical override key operation of the lockset. Programmable pushbutton feature shall provide ability to easily change code combinations. Multiple entry codes (4 minimum) and authorization levels shall be provided. User entry code shall be adjustable from 3 to 6 digits. Memory of lock shall be non-volatile and shall retain codes for at least 1 year without battery power and while batteries are being changed. Lock shall include a tamper resistance shut down feature to limit guessing of access codes. Shut down will be maintained for up to 15 minutes.

Example product: Unican 4000 Series, by ILCO Unican Corp.

2.3.4.xx At living/sleeping room doors in room modules provide Unican 1000 Series (1021B).

Add the following:

For all projects with 100 or more new locks of one type, the contractor will deliver five (5) additional locks to the Fort Lewis Public Works Lock Shop.

2.3.5 Exit Devices – provide touch bar type. Rim devices are the preferred type.

2.3.7 Cylinders and Cores – In the third sentence of the second paragraph, delete reference to A4 system and F keyway and replace with:

The cores shall have seven pin tumblers and shall be factory set using the A-2 system (specifications available at <http://www.lab-lockpins.com/pinsicore.htm>). Keyway may be A, D, E, F, G, H, J, or K.

2.3.23 Special Tools – Add

Special tools, such as those supplied by the manufacturer for installation and/or service will be supplied to the Fort Lewis Lock Shop for field service, minimum five sets along with all sets of installation instructions and other literature provided with the locks.

Hardware Sets

At end of section include separate hardware sets for each building type with a unique numbering scheme for each building.

08810 Glass and Glazing

Provide materials, equipment and systems in accordance with UFGS 08810a and as follows:

The use of insulated laminated glass with low emissivity metallic coating is mandatory. Provide the required certification label and test reports for the units. Glazing shall meet all applicable energy conservation goals. The designer shall propose applicable STC rating.

Laminated safety glass shall be used at glazed openings that are subject to accidental human impact, and at all hazardous locations, such as sidelights adjacent to doors, glazed panels closer than 459 mm (18 inches) to the floor, and glazing in doors. .

DIVISION 9: FINISHES

09215 Veneer Plaster

Provide materials, equipment and systems in accordance with UFGS 09215a and as follows:

Use a two component system. Provide veneer plaster at main corridors and lobbies in barracks, and battalion buildings.

09250 Gypsum Wallboard

Provide materials, equipment and systems in accordance with UFGS 09250a and as follows:

Gypsum wallboard to be a minimum of 16mm (5/8-inch) in thickness. This section includes type "X" fire rated gypsum board, cement backer board, water-resistant gypsum board, abuse resistant gypsum board, impact resistant gypsum board, stud wall framing for wallboard systems, and suspended ceiling framing. Coordinate wall construction requirements with ratings and UL/FM assembly numbers indicated on drawings.

Specify STC ratings required in all wall interior types used. Minimum STC at walls providing acoustic separation shall be 45.

Acoustical sealant: where sound retardant construction is indicated, use acoustical sealant at all wall edges and penetrations and acoustical insulation as recommended by manufacturer. Provide expansion joints per manufacture and ASTM recommendations.

Finish on interior gypsum wallboard in all COF and BN HQ office, corridor, classroom and conference areas; barracks room modules, corridors and stairs, and all occupied areas in SCB to be "Level 5" per Gypsum Association Standard GA 214. Other exposed wallboard shall be "Level 4".

Abuse resistant gypsum board shall be specified at all barracks corridor walls, laundry room walls and locker room walls.

Impact resistant gypsum board shall be specified at all barracks stair walls and COF Equipment Maintenance room.

09310 Ceramic Tile

Provide materials, equipment and systems in accordance with UFGS 09310a and as follows:

Ceramic mosaic floor tile shall be slip resistant, abrasive or textured surface, chemical and corrosion resistant, and non-porous with low-absorption characteristics. Ceramic floor tile in slabs on grade to be mortar bed set, thin set shall not be acceptable. Grout to be chemical-resistant epoxy. Slope all tile floors 10 mm per meter (1/8-inch per foot) to floor drains where applicable.

Ceramic wall tile to be glazed tile installed over solid waterproof backing cementitious backer board preferred, water resistant gypsum board where necessary due to fire resistance of wall construction. Wall tile shall be installed to building code required wainscot height throughout toilet rooms (minimum surface area), except at showers where tile shall be full height of wall. Provide expansion, control, contraction, and isolation joints.

Provide 0.5% extra stock for each size and color of tile.

09440 Resinous Flooring

A UFGS section does not exist for this material. Resinous flooring is the preferred floor system for use in the Barrack room module bathrooms. Resinous flooring is not a true terrazzo product. Include requirement for integral coved wall base.

09510 Acoustical Ceilings

Provide materials, equipment and systems in accordance with UFGS 09510a and as follows:

Acoustical units shall be 600 mm by 600 mm or 600 mm by 1200 mm nominal size. Acoustical tile units shall have exposed tegular edges and a factory applied flat finish, including all exposed edges and bevels. Provide required seismic bracing of suspension system. Provide minimum NRC of .60, STC range 35-39.

Pattern, finish, color and edge treatment are at offeror's option, however options which would appreciably increase cost (over industry standard tiles) for replacement shall be submitted to COR for acceptance. Suspension system shall be standard, white, exposed grid in standard width. Use of acoustical ceilings in barracks (except for SCB public spaces) is prohibited to limit access by occupants to concealed space.

Provide separate listing for each ceiling tile type used in the project and reference the building(s) where it occurs. Provide 0.5% extra stock for each type of ceiling tile.

09650 Resilient Flooring

Provide materials, equipment and systems in accordance with UFGS 09650a and as follows:

Vinyl composition tile (VCT) flooring shall meet heavy-duty requirements for layer gauge, indentation, flexibility, solvent and stain resistance. VCT shall have color and pattern extending through the entire thickness of the tile. Provide 100 mm high wall base of rubber or vinyl in continuous rolls at all areas with VCT or carpeting. Where resilient flooring is used on stairs use a slip resistant, raised pattern rubber tile. Rubber tile shall be a product system complete with cover components for treads, risers and stringers.

Provide 0.5% extra stock for each size and color of tile used.

09685 Carpet Tile

Provide materials, equipment and systems in accordance with [Section 09685 attached to this RFP](#) and as follows:

Provide a separate specification listing for each type of carpet used.

Provide 3.0% extra stock for each type and color of carpet used.

09720 Wallcoverings

Provide materials, equipment and systems in accordance with UFGS 09720 and as follows:

Submit an actual material sample of each wallcovering type and color for acceptance, minimum size of sample shall be 0.1 square meter. Wallcoverings are prohibited in the barracks.

Provide 1.0% extra stock for each type and color of wallcovering used.

09900 Painting, General

Provide materials, equipment and systems in accordance with UFGS 09900 and as follows:

All exposed surfaces without a permanent factory applied coating shall be painted unless specified otherwise. Fire alarm base plates, electrical panel covers, fire alarm bells, and other items on walls, (with the exception of fire alarm pull stations) shall be painted to match adjacent wall color. HVAC equipment and similar utility features on or near the facilities shall be made "invisible" by painting them to match the adjacent facility color. Avoid exterior painted surfaces on any material. Where exterior coating systems are required, finishes shall be either an approved powder coat finish or two-part modified polyurethane finish.

All coating systems and alternatives for primer and top coat selected shall meet UFGS requirements and be coordinated consistent with the Master Painter's Institute (MPI) numbering system.

All interior and exterior color schemes for buildings shall be accepted by the Contracting Officer's Representative (COR) prior to painting.

09915 Color Schedule

Provide color and finish references in accordance with UFGS 09915 and as follows:

Either incorporate comprehensive color information into surface and component schedules on drawings, or provide in this section. List all Exterior and Interior finishes and colors whether an applied coating or an integrally colored material.

It is important that appropriate colors be selected for these facilities; neutral or light colors shall be utilized for large background areas and walls used for display. Color-texture graphics should be used sparingly on walls. Painted CMU is not acceptable as an interior finish for any normally occupied room. All interior appurtenances, except fire alarm pull boxes, shall match the wall color.

In general, all exterior materials used on Echo Block buildings shall match the color, texture and finish of like materials used on facilities designed and constructed under the FY 02 and FY 03 program years.

DIVISION 10: SPECIALTIES

10100 Visual Communications Specialties

Provide materials, equipment and systems in accordance with UFGS 10100a and as follows:

This section includes marker boards (white boards), tackboards and Projection Screens. Attach to wood blocking (treated in rated walls) for backing. Provide markerboards and tackboards in all Administrative offices. Provide markerboards, tackboards and wall or ceiling mounted projection screens in Conference Rooms and Classrooms. Coordinate specification with depiction of items in interior elevation drawings.

10153 Toilet Partitions

Provide materials, equipment and systems in accordance with UFGS 10153 and as follows:

Provide to meet all ADAAG requirements for accessibility. Style C, overhead braced. Urinal screens shall be wall-supported. Partitions will be solid HDPE core (finish 5). Attachment brackets and fasteners shall be stainless steel and vandal-proof. . Door hardware shall be stainless steel. Hinges shall be gravity type. Provide coat hook-door bumper, and door stop/keeper with rubber bumper.

10201 Exterior Louvers and Vents

Provide materials, equipment and systems in accordance with UFGS 10201N and as follows:

Do not include door louvers in this section. Louvers shall be fabricated with minimum material thicknesses of 2 mm for aluminum or 16 Ga. for steel. Finish system shall match that used for other sheet metal exterior components. Louver surface areas not utilized for mechanical purposes (backed by ductwork) shall have an insulated closure panel to provide a weather and thermal seal with a minimum u-value of .10. The edges of louver blades shall be folded or beaded for rigidity, and baffled to reduce leakage due to driving rain. Provide concealed interior mullions for all louvers wider than 1 500 mm. Louvers shall be provided with bird screens on interior face. Louvers shall bear the AMCA Certified Ratings Seal for air performance and water

penetration ratings as described in AMCA 500. Coordinate installation with requirements of Section 11025.

10260 Wall and Corner Protection

Provide materials, equipment and systems in accordance with UFGS 10260.

10430 Exterior Signage

Provide materials, equipment and systems in accordance with UFGS 10430 and as follows:

Signage shall conform to Fort Lewis Installation signage regulations and the requirements of this RFP. Location and message of signage shall be coordinated with the installation.

10440 Interior Signage

Provide materials, equipment and systems in accordance with UFGS 10440 and as follows:

Signage shall be simple in design and pleasing in appearance. The system shall provide a permanent room number with two changeable message strips (for occupant names) on room signs. Directory signage shall provide space for a schematic floor plan (with fire exit path information) and fully changeable message content. Interior signage shall be acrylic. All signage characteristics and mounting location shall be consistent with ADAAG requirements for accessibility. Signage shall be required at all rooms, areas, and spaces. Provide directory signage at all main building entrances. Surface mounted signs shall be provided with 1.6mm thick vinyl foam tape. Signage shall conform to Fort Lewis Installation signage regulations and the requirements of this RFP.

10505 Metal Lockers and Locker Benches

Provide materials, equipment and systems in accordance with UFGS 10505N and as follows:

Lockers and benches shall be provided at locations shown on drawings.

Athletic Lockers shall be 22-gauge steel on top, sides and back with 18 gauge steel door and bottom and 12 gauge locker and door frames. Nominal locker size shall be 300 mm W x 300 mm D x 1830 mm H on a 150 mm concrete base. Provide louvers at top and bottom of door panel. Accessories shall include standard hat shelf, coat hooks and number plates. Tamper guard handle shall accommodate standard padlock (NIC). Lockers shall be wall anchored, have leg closure panel, sloped top and baked enamel finish.

TA-50 Gear Lockers shall be 14-gauge expanded or punched steel on top, sides and back and door with 14 gauge solid steel bottom and 12 gauge locker and door frames. Nominal locker size shall be 1220 mm W x 610 mm D x 1830 mm H on a 150 mm concrete base. Include number plates. Tamper guard handle shall accommodate standard padlock (NIC). Lockers shall be wall anchored (or anchored to each other at "island" locations), have leg closure panel, sloped top and baked enamel finish.

Locker benches shall be provided at locations shown on drawings. Bench shall be laminated hardwood, minimum 200 mm wide by 30 mm thick, finished with clear acrylic. Pedestals shall be

cast iron, 450 mm high, finished with baked enamel and secured to the floor with expansion anchors.

10520 Fire Extinguisher Cabinets and Accessories

A UFGS section does not exist for this material. Provide materials, equipment and systems in accordance as follows:

Fire extinguisher cabinets shall be semi or fully recessed with flat trim. Fire extinguisher cabinets, all appurtenances, and accessories shall be factory painted, red color. Cabinets in rated walls shall be rated to match, or recess notch designed to maintain the wall rating. Fire extinguishers will be provided by others.

10550 Postal Specialties

A UFGS section does not exist for this material. Provide materials, equipment and systems as follows:

Postal Specialties shall include Horizontal Mailboxes for all barracks occupants and Letter Boxes for outgoing mail. All postal specialties shall conform to United States Postal Service regulations for size, configuration and mounting locations.

10650 Operable Partitions

Provide materials, equipment and systems in accordance with UFGS 10650a and as follows:

Operable Partitions (used to divide classrooms in the BN HQ buildings) shall be manual operation type, extend to fill the entire room length and be continuous from floor to ceiling. Panels shall incorporate full acoustic seals on all edges, top and bottom. Seal extension and jamb closure shall be activated using a removable crank handle. Panels shall provide acoustic separation of STC 50 per ASTM E 413. Panel surface shall be vinyl fabric. Provide porcelain markerboard on both faces of partitions for at least one half of the partition length. Support track sections shall be fabricated from architectural grade, extruded aluminum alloy 6063-T6.

10800 Toilet Accessories

Provide materials, equipment and systems in accordance with UFGS 10800 and as follows:

Provide in toilet rooms and bath rooms as required by this RFP and otherwise applicable: medicine cabinets, soap dispensers, mirrors, toilet paper dispensers, folded paper towel dispensers, grab bars, paper towel waste receptacles, garment hooks, and metal shelves. Provide sanitary napkin disposals in each women's water closet stall. At each shower provide recessed soap dish, towel hook and shower curtain and rod. Provide semi-recessed accessories, where possible. Mirrors shall be a single panel with width to match the adjacent lavatory countertop.

Electric hand dryers may be used in lieu of paper towel dispensers at multiple fixture toilet rooms in COF and BN facilities.

Provide a mop rack and shelf in janitor closets.

Provide a toilet hardware matrix schedule in this section for each building type identifying the accessory item, the number of that accessory type and the number of the room mounted in.

10990 Miscellaneous Building Specialties

A UFGS section does not exist for this material. Provide descriptions of all materials/components requiring additional definition and not adequately covered by other sections. Typical components include: telephone enclosures, TV/VCR wall mounting brackets and recessed entrance gratings and mats.

DIVISION 11: EQUIPMENT

11020 Security Vault Door

Provide materials, equipment and systems in accordance with UFGS 11020 and as follows:

Steel security – vault type door with frame shall be of standard product from manufacturer specializing in this type of fabrication. Design of door and frame to conform to Federal Specifications FS AA-D-00600. Single leaf door shall have clear opening of 1015 mm (40 inches) wide by 1980 mm (78 inches) high. The door shall be Class 5, Type “IR” - right opening swing with optical device or “IL” - left opening swing with optical device, as indicated on drawings, Style K - key change combination lock. The optical device shall permit observation from the inside to the outside of the vault.

Day gates shall be provided at Arms Room entrances. Day gates shall be manufactured and installed as designed and detailed in the drawings. Size and mounting position of day gate shall be coordinated with the vault door furnished, and shall provide access control and visual security. The gate shall be hinged on the same jamb as the vault door, shall swing into the vault, and shall have a locking device operable from outside by key and from inside by knob or handle. Day gate shall be of steel construction throughout. Provide high security hasp (NSN 5340-00-178-7872) accessible from vault interior. Gate shall be constructed with a pass through opening complete with shelf.

11452 Residential Appliances

A UFGS section does not exist for this equipment.

Provide continuous protection of all appliances stored on site or installed in the work until final acceptance. Appliances furnished by the government may be stored on site. Appliances listed in this outline are consistent with previous projects, however, the contractor shall coordinate during design and construction with the COR and Fort Lewis installation furnishings coordinator to verify actual appliance purchases.

Include the following testing requirements:

3.x TESTING

Equipment shall be inspected and tested under operating conditions after installation. If inspection or test shows defects, such defects shall be corrected, and inspection and test shall be repeated. Equipment tests shall include the following:

3.x.1 Operating Tests

An operating test shall be performed on all items (except GFGI) after complete installation and adjustment. The failed test item shall be corrected and the test shall be rerun.

3.x.2 Equipment Start-Up/Demonstration

As necessary, the Contractor shall obtain the services of the manufacturer's representative experienced in the installation, adjustment and operation of the equipment specified. The representative shall supervise the start-up, adjustment, and testing of the equipment, prior to the demonstration. Equipment shall be carefully tested, adjusted, and regulated in accordance with the manufacturer's instructions and shall be so certified in writing. A thorough operational demonstration shall be provided of all equipment and instructions furnished for general and specific care and maintenance. Selected items of equipment and attendees shall be scheduled, with the Contracting Officer, at least 2 weeks in advance of demonstration periods.

3.x Clean and Adjust

Debris resulting from this work, as the installation progresses, shall be removed from the jobsite on the same day. All appliances, (except GFGI) prior to demonstration, shall be cleaned and polished, both interior/exterior. Drawer slides and casters shall be lubricated and adjusted. Pressure regulating valves, timed-delay relays, thermostatic controls, and temperature sensors, shall be adjusted, as required, for proper operation. Faucet aerators and line strainers shall be cleaned or replaced. Damage to painted finishes shall be touched up.

Appliances will have one of three contract characters:

Government Furnished and Government Installed (GFGI):

Combination Microwave Refrigerator/Freezer (at Barracks Room Modules)

Microfridge model MF-10 TP incorporates both appliances in a stacked unit. Overall size of unit is 600 x 1810 x 711 mm (w x h x d). Coordinate cabinet size and location to permit appliance location as indicated on drawings. Appliance may be purchased in single or dual plug configuration. Confirm type acquired and style of plug. Coordinate electrical outlet requirements.

Dispensing Ice Machine (at common area)

Ice dispenser model shall be Manitowac QFA-291. Unit is water cooled and will provide up to 180 pounds of ice storage. Overall size of unit is 760 x 1540 x 810 mm (w x h x d). Coordinate power, water supply and drainage (storage hopper and condenser) requirements, **assuming an ice maker fitting the model indicated with the highest electrical requirement and a water cooled unit**, including backflow prevention per code.

Government Furnished and Contractor Installed (GFCI):

Stacked Washing Machines/ Clothes dryers (at Barracks room modules)

Maytag high-efficiency model MLG2000. Overall size 686 x 1840 x 730 mm (w x h x d). Confirm and coordinate facility built in requirements for water, waste, gas and electrical connections. Provide service connections to accommodate gas or electric dryers. Verify actual appliance selected during design.

Contractor Furnished and Installed (CFI):

Range (at Barracks Room Modules)

Range shall be an electric drop-in type complete with oven and smooth ceramic type cooktop. Oven shall be 4 cubic foot capacity, self-cleaning, with 2 racks and glass window door. Cooktop shall be four element, radiant type with "Ceran" or similar surface and 'hot surface' indicator lights. Nominal size of range shall be 780 x 710 x 670 mm (w x h x d). Coordinate size and configuration of cabinetry cutout with actual unit selected. Coordinate power outlet requirements with actual unit selected. Color of unit shall be white on white.

Representative products:

General Electric model JDP46WDWW.

Maytag model MEP5770A.

Whirlpool model RS696PXGQ

Exhaust Hood (at Barracks Room Modules)

Exhaust hood shall be built-in, exhaust to exterior type. Features shall include multi-speed fan, removable/washable grease filters and internal hood light to illuminate range cooking surface. Nominal size of exhaust hood shall be 760 x 150 x 445 mm (w x h x d). Design of hood shall not create any exposed sharp metal edges. Coordinate size and configuration of cabinetry cutout with actual unit selected. Coordinate power outlet, and vent ducting requirements with actual unit selected. Color of unit shall be white.

Representative products:

Broan Model 463011

GE Appliances Model JV535CWW

Whirlpool Model RH2330XJQ

DIVISION 12: FURNISHINGS

12490 Window Treatment

Provide materials, equipment and systems in accordance with UFGS 12490A and as follows:

Horizontal window blinds shall be Type II 25 mm (1-inch) aluminum slats. Coordinate color with interior finish. Provide blinds at all exterior windows with the exception of: 1) corridor windows in Barracks and SCB, and 2) glazing at exterior doors.

12675 Floor Grating and Frame

A UFGS section does not exist for this equipment. Specification may be incorporated into Miscellaneous Specialties. Provide materials, equipment and systems in accordance as follows:

Exterior Grating: Frame shall be fabricated of stainless steel and furnished complete with concrete anchors, corner splices, etc., as required for recessed installation. The frame shall accept the grating thickness on one side and be flush with the finished surface on the other side, and shall provide a controlled recess depth for a flush, continuous walking surface. Grating shall be fabricated of stainless steel grille. Recessed concrete pan shall slope 21 mm per meter (1/4" per foot) minimum to a drain in the concrete pan.

Interior Grating/Mat: Frame shall be fabricated of aluminum extrusion conforming to ASTM B 221, alloy 6063, temper T5. The frame shall be furnished complete with concrete anchors, corner splices, etc., as required for recessed installation. The frame shall be of the universal type to accept the grating on one side and to accept a variety of floor finishes on the other side, and to provide a controlled recess depth for a flush, continuous walking surface. Grating surface shall be carpet inserts having fusion bonded cut pile. Inserts shall be locked into treadrails shall be fabricated from 6063-T5 aluminum alloy and joined in a continuous hinge system to allow easy roll-up and removal for cleaning. Treadrail will be standard bronze anodized.

DIVISION 13: SPECIAL CONSTRUCTION

13080 Seismic Protection For Miscellaneous Equipment

Provide equipment and systems in accordance with UFGS 13080 and as follows:

Provide seismic bracing for suspended ceilings, electrical equipment and conduit and mechanical equipment, ductwork and piping.

13100 Lightning Protection System

Provide equipment and systems in accordance with UFGS 13100A and as follows:

Provide Lightning Protection System in accordance with NFPA 780, ETL 90-6 and UL 96A.

13110A Cathodic Protection System (Sacrificial Anode)

Provide equipment and systems in accordance with UFGS 13110A.

13112A Cathodic Protection System (Impressed Current)

Provide equipment and systems in accordance with UFGS 13112A.

13201 LPG (Propane) Fuel Storage Systems

A UFGS section does not exist for this material. Provide specifications for all materials at the tank farms required including the propane storage tanks, transfer pumps, water bath vaporizers, gas-air mixers, air compressors, truck offloading stations, piping, meters, instrumentation, gauges and controls.

13721 Intrusion Detection System

See Technical Specification 13721 provided.

13851 Fire Detection And Alarm System, Addressable

Provide a complete Fire Alarm System in accordance with UFGS-13851a and the following:

The Fire Alarm System panel and all devices shall be of the addressable type and be completely compatible with the existing base system that uses King-Fishercentral receiving equipment. The Fire Alarm System shall monitor all devices and transmit any alarms to the Base 911 center.

Wiring on fire alarm system components shall be Style A for alarm initiating devices and Style Z for indicating devices.

Smoke detectors shall be the photo-electric type. Smoke detectors in sleeping rooms shall be single action alarm device type operated from the fire alarm control panel's power and having reverse polarity sounding capability. Upon an alarm condition shall be non-latching, not require reset at the fire alarm panel after a local alarm, and not cause the transmitter to send an alarm or trouble. Any smoke, heat or duct detectors that are above ceilings or in concealed spaces shall have a remote LED indicator. Duct detectors shall be installed in air handling unit (AHU) systems which have more than 2000cfm airflow, per NFPA 90A, and shall be resettable from the control panel.

Notification appliances in individual sleeping rooms of dormitories that sound with the general alarm shall silence with the general alarm silence function from the fire alarm panel. Manual fire alarm pull stations shall be double action type. When device is mounted externally on brick or exterior surface, a rubber gasket shall be used (to reduce electrolysis and grounds).

Spare parts, manuals for fire alarm system, documentation showing mapping/tree of devices (showing the polling sequence), and all software/hardware required for programming/editing shall be turned over to Public Works personnel at the time of acceptance testing. Spare parts will include 2% or a minimum of 2 of each type of device used in the system (bases, sounder bases, modules, detectors, pullstations, hornstrobes, magnetic door holders, etc.).

All specialized equipment and/or training to program, edit existing program, add or delete devices, etc. shall be provided as part of the fire alarm system. Systems that require factory certification to process or use their software shall include this training. Include transportation, lodging, etc. when training is not available locally.

13930 Wet Pipe Sprinkler System, Fire Protection

The entire area of each building shall be provided with wet pipe sprinklers. Install systems in accordance with UFC 3-600-1, NFPA 13 and NFPA 24. All pipe, valves and fittings shall be UL labeled and FM approved. Use semi-recessed, chrome plated, glass bead type sprinklers in the administrative areas. Use concealed type sprinklers in the barracks room modules. Do not use gripper fittings in the piping system. Grooved joints and fittings shall not be installed in concealed locations. Provide tamper switches for main sprinkler/standpipe valves and for sprinkler zone valves on each floor, as well as the Post Indicator Valve. Underground piping shall be in accordance with NFPA 24. Double check back flow preventers shall only be installed in the position certified by the manufacturer. Sprinkler systems shall be hydraulically designed.

Inspector's test connection shall be located at riser with UL listed site glass flow device. The test connection discharge shall be located outside the building wall directed so as not to cause damage to adjacent construction or landscaping during full flow discharge or to an adequate drain that will handle the discharge. Drain valves shall have plugs. All sprinkler systems shall always be disinfected. All pipe flushing, tests and inspections shall be witnessed by Fort Lewis Fire Department. Copies of all as-builts, test certificates, and related system documentation shall be provided to the Fort Lewis Fire Department.

DIVISION 14: CONVEYING SYSTEMS

14240 Elevators, Hydraulic

Provide materials, equipment and systems in accordance with UFGS 14240 and as follows:
Nominal Elevator Schedule (Passenger), confirm with manufacturer/model selected.

Number Required:	2 (1 at each Large Battalion HQ)
Service:	Passenger
Capacity:	1,135 kg (2500 pound)
Speed:	0.50 m/s full load up 0.75 m/s down speed
Platform Size:	2 134 mm wide by 1 500 mm deep
Clear Car Inside:	2 032 mm wide by 1 295 mm deep
Net Travel:	4 300 mm
Landings:	2
Openings: Front	914 mm x 2 134 mm
Openings: Rear	n/a
Entrance Type:	Horizontal-sliding/side opening

Provide emergency phone system meeting ADAAG requirements:

A telephone system in stainless steel cabinets shall be provided for passenger elevators. A vandal-resistant speaker type intercom with push-buttons to activate shall be installed in car station behind a stainless steel perforated grille and connected to a programmable auto-dialer located in machine room. Auto-dialer shall be provided with a solid-state charger unit, which will automatically provide emergency power and an immediate transfer in the event of failure of normal power supply. The push-button located in car station or in separate cabinet shall be at the prescribed height for access by the disabled and shall be identified as "EMERGENCY PHONE PUSH TO ACTIVATE". The entire communication assembly shall be approved for an elevator installation. The push button telephone shall comply with FED-STD 795 and 36 CFR 1191. The telephone communication shall not be terminated until one of the communicating parties hangs up the receiver or manually disconnects the communication link. Auto-dialer shall connect to on post 24-hour emergency number, verify number with Ft. Lewis Emergency Services.

Provide elevator pit sump system:

Pit sump shall be equipped with float switch activated automatic sump pump. Sump pump shall not discharge directly to sanitary or storm sewers. Activation of sump pump shall signal through HVAC DDC control system and illuminate a wall mounted signal light, location as indicated. Pump shall discharge to 20 gallon holding/inspection container located in elevator machine room. Holding/inspection container shall have a valve controlled drain to sanitary sewer.

DIVISION 15: MECHANICAL

15070 Seismic Protection For Mechanical Equipment

Provide equipment and systems in accordance with UFGS 15070A.

15080 Thermal Insulation for Mechanical Systems

Provide equipment and systems in accordance with UFGS 15080A.

15190 Gas Piping Systems

Provide equipment and systems in accordance with UFGS 15190A and as follows:

See 02556 Gas Distribution System.

15400 Plumbing, General Purpose

Provide equipment and systems in accordance with UFGS 15400A. Plumbing vents through the roof shall be minimized as much as possible by consolidating all vents at one point. All aboveground pressurized potable water piping shall be copper. All water heaters with over 1500 liter (400 gallon) capacity shall be provided with a minimum 10 year limited warranty for tank replacement. Backflow preventers shall be tested by a Washington State certified tester and standard form available from Public Works for testing shall be used.

15569 Water Heating; Gas; up to 20 MBTUH

Provide equipment and systems in accordance with UFGS 15569A and as follows:

Hot water generators (HWG) shall be designed, constructed and equipped in accordance with the ASME Boiler Pressure Vessel Code, Section IV, Heating Boilers. Each HWG shall be self contained, steel, horizontal, 3 pass or greater, wet backed scotch marine packaged firetube type complete with all accessories, mounted on a structural steel base. The HWG capacity shall be based on the ratings shown in HYI-01 or as certified by the American Boiler Manufacturers Association, or American Gas Association. HWG shall be designed to burn natural gas. A propane/air mixture with heating value roughly equivalent to natural gas will be used as an alternate fuel source using equipment designed for natural gas. Each HWG shall comply with Federal, State, and local emission regulations. Burners shall be UL approved, fully modulating, mechanical draft burners with all air necessary for combustion supplied by a blower where the operation is coordinated with the burner. Burners shall be provided complete with gas supply system in conformance with UL 795, ANSI Z21.13 or NFPA 8501. Combustion safety controls and equipment shall be UL or IRI listed and conform to ASME CSD-1. As a minimum, the burner controller shall provide all functions of a Honeywell 7800 Series controller with troubleshooting module. Temperature gauges shall be provided in lieu of thermometers. Temperature and pressure gauges shall be round dial type.

15895 Air Supply, Distribution, Ventilation and Exhaust System

Provide equipment and systems in accordance with UFGS 15895A and as follows:

Isolation valves 64mm (2 ½”) and smaller shall be full port ball valves. Isolation valves 75mm (3”) and larger shall be gate valves. Propylene glycol shall be used in lieu of ethylene glycol for freeze protection of the hydronic hot water heating system.

15910 Direct Digital Control Systems

A revised specification section 15910 is provided in Attachment. This revised section 15910 reflects the most recent requirements which complies with Ft Lewis DDC standards. The contractor is required to further refine the specification to meet the Ft Lewis DDC standards.

15990 Testing, Adjusting and Balancing of HVAC Systems

Testing, adjusting and balancing shall be accomplished in accordance with UFGS 15990A.

15995 Commissioning of HV Systems

All HV systems and equipment including controls shall be commissioned in accordance with ASHRAE Guideline 1 The commissioning specification, UFGS 15995A, which the contractor tailors based on the ASHRAE Guideline 1, is a detailed description of the scope and objective of the construction, acceptance, and post-acceptance phases of the HVAC commissioning process. The commissioning specification is required to contractually implement the post-design phases of the process. It must be project specific. Commissioning of systems and equipment shall take place only after TAB work is complete. An independent qualified firm or agency specializing in such work shall complete commissioning work. The independent firm or agency shall furnish a written report on the commissioning work. Commissioning work shall be coordinated with DDC system commissioning and training for the DDC system’s operating personnel. All commissioning shall be performed in accordance with UFGS 15995A except for the following:

- a) In paragraph 3.1 “Commissioning Team and Checklists” the second sentence shall be changed to read: “In addition, the Government will be represented by a representative of the Contracting Officer, and the Using Agency.”
- b) In paragraph 3.1 “Commissioning Team and Checklists” the Designation “D” shall be changed to “Contractor’s Mechanical Designer.”

All functions of the details sequences of operations shall be tested.

Division 16: ELECTRICAL

16070 Seismic Protection For Electrical Equipment

Provide all necessary requirements in accordance with the UFGS-16070A.

16370 Electrical Distribution System, Aerial

Provide overhead to underground transition in accordance with UFGS-16370A.

16375 Electrical Distribution System, Underground

Provide equipment and a complete system in accordance with UFGS-16375A and the following:

Medium voltage cables shall be soft drawn copper, rated for 15 kV circuit voltage.

Medium voltage cable terminations shall be 15 kV between phases for 133 percent insulation level.

Power transformers shall be pad-mounted, oil-filled, loop-feed, outdoor type in accordance with the requirements of ANSI C57.12.26. Power transformers shall be placed on vaults with conductors fire-taped, looped and racked.

Pull-through vaults shall have hinged, diamond plate lids and conductors shall be fire-taped, looped and racked.

16415 Electrical Work, Interior

Provide complete electrical system including power, lighting, control and distribution in accordance with UFGS 16415A.

16475 Coordinated Power System Protection

Coordinated power system protection shall be in accordance with UFGS 16475A.

16528 Exterior Lighting Including Security and CCTV Applications

Provide electrical equipment and systems for parking and walkway lighting in accordance with UFGS-16528A and the following:

All exterior electrical shall be routed underground.

Within ECHO Block, the parking area poles and luminaires, bollards, and walkway poles and luminaires shall match existing fixtures installed in the previous projects. In ALPHA Block, luminaires for the parking areas and walkways shall be selected to meet the Sustainable Design goal to reduce overall light pollution. Exterior finish of poles, fixtures, and bollards shall be compatible with Architectural style and materials of other site features.

16710 Premises Distribution

Interior distribution system for telecommunications system shall be in accordance with UFGS 16710A and the details in this RFP.

16711 Telephone System, Outside Plant

Exterior distribution system for telecommunications system shall be in accordance with UFGS 16711A and the details in this RFP.

16770 Radio and Public Address Systems

Provide a public address system in accordance with UFGS 16770A.

END OF SECTION

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