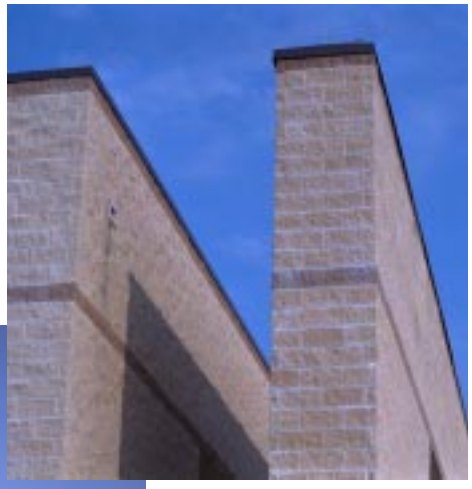
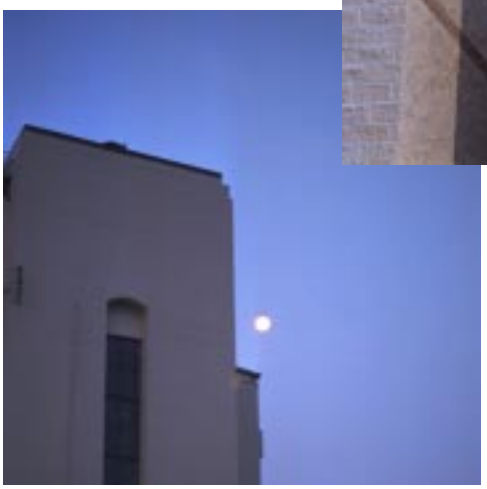
Pope Air Force Base

architectural compatibility plan

an
architecture
of community

VISION

The vision for Pope Air Force Base is an “Architecture of Community.” This vision is of excellent architecture that displays a high quality corporate image and blends the values and character-of-place into the environment. The vision for this installation is founded on the best examples of contemporary buildings and a mature landscape surrounding a core of attractive historic structures. Achieving the ”Architecture of Community” will result in buildings of the highest quality, complimented by and compatible with their surroundings.

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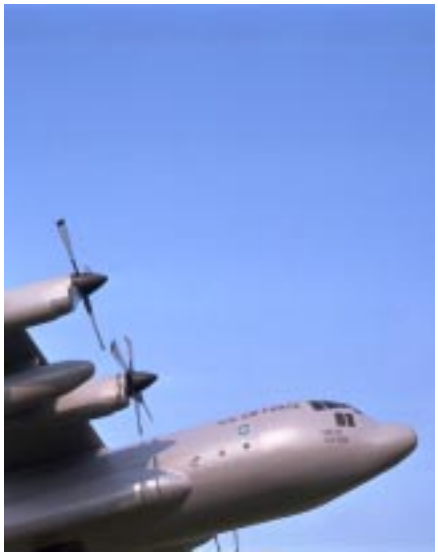
introduction

The Architectural Compatibility Plan (ACP) defines a clear design vocabulary to be used throughout the base, providing specific standards to be observed in all aspects of design. Compatible architecture is accomplished not only with buildings that are similar, but also through the use of common design forms, details, materials, site features, and streetscapes.

The ACP's goal is to create a visually unified environment based on a sense of community similar to a campus or small town. The primary design goal is to direct development of Pope towards a livable, attractive, and visually cohesive Air Force base.

The plan helps build quality places that contribute to the community. It will merge the historic and contemporary styles of architecture on Pope Air Force Base.



Purpose

The purpose of the ACP is to define specific design standards for buildings, site development, and streetscapes that serve to integrate the visual character throughout the base.

The ACP will help ensure consistent quality design decisions by commanders, planners, architects, engineers, maintenance staff, and residents. It promotes clear, concise communication between Pope AFB as the client and design professionals.

This plan applies to self-help initiatives, small projects, and operations and maintenance activities as well as large construction efforts.

The ACP is referenced from and supports the Pope General Plan as a key component plan.

How to Use This Plan

The ACP is composed of three architectural settings: Community, Flightline, and Family Housing (see the map on page 5). Within the Community and Flightline settings are several historic structures that require special attention and are addressed at the end of each section.

The Building Design Standards Section gives requirements for facilities within each of the architectural settings and historic structures. For historic structures, refer to the Community standards and to the historic standards for more specific information.

The Site Design Standards Section provides information on site development and amenities to be applied throughout the installation, basewide.

The Implementation Section of the booklet highlights key elements to help ensure success in designing and constructing excellent facilities. The implementation section is used to facilitate the coordination and approval of design submittals. It discusses the traditional design process, highlights the importance of site analysis, and describes the role of the Architectural Compatibility Review Board (ACRB). All future construction and renovation efforts for all customers and funding sources shall adhere to the guidelines in this ACP. Designs must be approved by the ACRB prior to contract advertising.

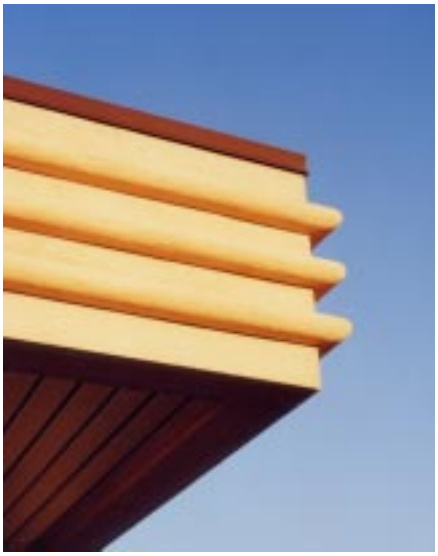
Finally, the appendices provide additional information including a general index, lists of building materials, site amenities, paint colors, landscape materials, and checklists for the ACRB and project personnel. Use the appendices in conjunction with the booklet as a quick desk reference to specific materials and color specifications.

A poster is available upon request that displays photographs of community at Pope Air Force Base.

Note: Not all photos in this ACP are taken from Pope Air Force Base. Some photos are from off-base locations, which demonstrate the intended standard / vision.

Architectural Settings

Pope Air Force Base is visually divided into three distinct architectural settings and three physical areas. Visually and physically, the Flightline is separated from the remainder of the installation by the airfield, the primary activity generator. Visually, the Community and Residential settings take on their own individual characters expressed in the architecture.



community

This architectural setting encompasses the majority of the installation supporting a number of different functions and architectural styles. Brick walls, bronze-colored storefront windows, and bronze-colored standing seam metal roofs characterize this area.

Interspersed throughout this setting are several structures that have been identified as having historical significance. These are further identified in the Historic Structures Section. These structures should be protected and maintained as focal points of interest.

flightline

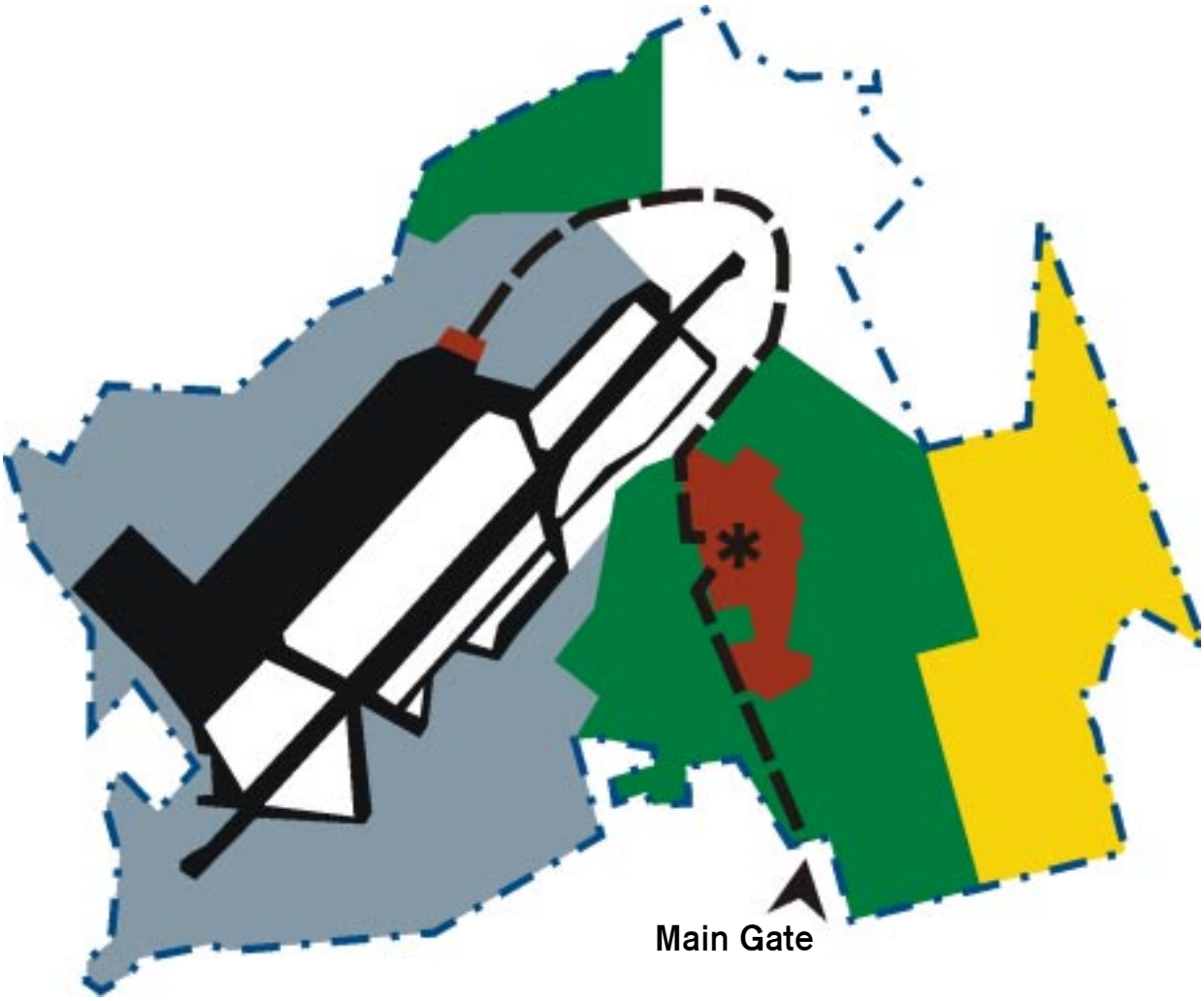
This architectural setting houses the majority of the mission related, industrial type activities and is consequently characterized by larger, single-massed facilities such as aircraft maintenance hangars, warehouses, and deployment buildings. Split-face block walls, bronze-colored windows and doors, and bronze-colored standing seam metal roofs characterize this area.

Within this area are two co-joined, historically significant structures that act as a focal point and a visual connection to the community setting.

family housing

The Family Housing architectural style range from 1930's Mediterranean to contemporary suburban single-family and duplex structures.

Architectural Settings Delineation Map



Basewide

Flightline

Community

Historic

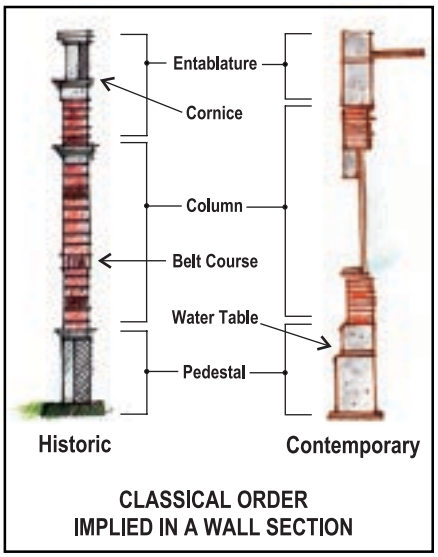
Family Housing

Not To Scale

building design standards

Achieving compatibility among facilities by developing them within a common design theme and character is absolutely critical to attaining the desired community image. Color, material, form, scale, massing, and detailing are important elements in establishing style and visual continuity. Creating unity, not conformity, is the goal.

The first priority is to achieve architectural compatibility for Pope Air Force Base in each architectural setting. The second priority is compatibility for the base as a whole. Finally the character or style of an individual facility is the third priority. A design that successfully accomplishes all three priorities will bring the greatest level of architectural compatibility to the installation.



CLASSICAL ORDER
IMPLIED IN A WALL SECTION

community

Compatibility in the community architectural setting is achieved through the application of the common visual character developed for Pope AFB. The design theme is contemporary forms and detailing applied to simple building masses to create a high-tech corporate image. A limited use of historic and vernacular influences will make Pope characteristically unique while retaining a regional expression. Consistent application of the following standards will link all of the community facilities together and create a uniform architectural image.

The few historic structures located in this setting have additional criteria to be used in lieu of, or in addition to, the general community criteria. Limited adjustments in the application of the standard materials and details will be required to blend the new style with existing adjacent facilities. Some areas may rely more heavily on site features than architectural elements to create a common connection.

CHARACTER

The architectural character intended for Pope AFB involves the blending of beige and red brick with an emphasis on red adjusted according to adjacencies. A visual consistency is achieved through the application of certain historic detailing such as the circular opening in pediments, sloped parapet endwalls, implied loggias, and standing seam roofs.

Style / Form

- Recall historic features on high-visibility facilities without duplicating historic styles in total.
- Emphasize vertical proportions on Building elements.
- Rectangular elements are the standard for major building masses. Use clean, simple, contemporary forms and avoid curves or angular elements.
- Develop a strong relationship between buildings and exterior spaces.

Scale / Massing

- Incorporate amenities such as plazas, loggias, arcades, covered entries, and landscaping.
- Combine functions whenever possible to avoid a proliferation of small independent structures.
- Use submassing for larger structures and break up the mass of large structures to allow for sloped roofs to the maximum extent.

WALL SYSTEMS

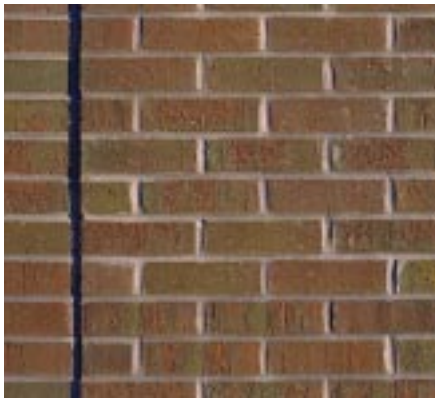
Reducing the palette of materials, colors, and styles used on new and renovated structures will begin to create a more cohesive visual appeal throughout the installation. Further compatibility can be gained by the consistent application of recognizable building forms such as sloped parapet endwalls and circular accents within the pediment.

Materials and Color

- Use only base standard materials and colors and minimize surfaces requiring painting and cleaning.
- Use integral colored materials and factory finished building products to reduce maintenance.
- Use only corrosion-resistant factory finished fasteners and exterior metals except for historic preservation projects.
- Use white Portland cement precast for accents and details.
- Use sealants to match or blend with surface materials and color.
- Red brick walls with beige brick accents are the standard.
- Develop beige accents to give the appearance of approximately 80% red brick.
- Use standard brick in a running bond pattern with concave joints.
- Use beige mortar.
- Use rowlock, soldier, and corbel courses as accents.
- Provide visual interest using brick detailing on sills, lintels, and arched openings.
- Use sloped parapet endwalls at entries or other building features on a limited basis.
- The use of recessed cornice bands and / or implied loggias are encouraged.
- High-visibility facilities shall demonstrate a greater application of detailing.
- Integrate expansion joints with downspouts, reveals, or changes in the façade.
- Do not use brick wainscots except in the Family Housing setting.

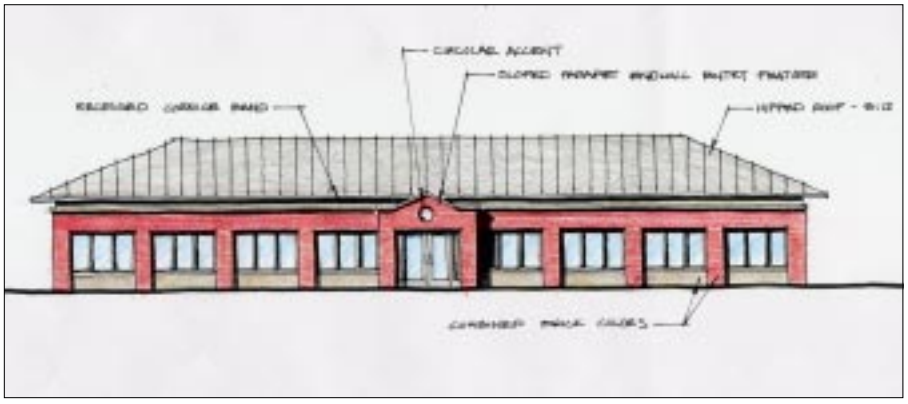
Accents / Details

- A limited use of a circular pediment accent at entries or other building features is encouraged.
- Incorporate white Portland cement precast, caps, sills, keystones, banding, and other detailing.
- Use precast concrete and beige brick for accents and details.
- Do not "over decorate" or duplicate in total, historic styles for new facilities.
- Stucco may be used in protected areas for accents with its color to match precast.
- Use expansion joints, reveals, recessed panels, and expressed pilasters to break up flat façades and add visual interest.
- Consider overall building height and proportion on detailing.



Parapets and Copings

- Use horizontal parapets at all buildings with low-sloped roofs.
- Construct sloped parapets with horizontal flanks on gable end walls matching the roof slope.
- Provide properly flashed precast copings.
- Limit painted metal copings to matching an existing condition.



Wall Components

- Aesthetically organize all mechanical, electrical, and other building components as design elements of the façade and coordinate with other architectural features.
- Finish of wall components such as gas meters, fire bells, vents, louvers, electrical boxes, and communication equipment shall match wall color.
- Do not expose conduits, cables, and piping on walls.
- Locate equipment such as gas meters to minimize visual impact.

Windows and Doors

- Use medium bronze aluminum window and door frames with thermal break construction.
- Use a combination of window units or mullion design to emphasize a vertical character in window openings.
- Incorporate operable windows where possible.
- Use bronze tinted, low-emissivity (not mirrored) glazing.
- Limit hollow metal frames to security doors, utility rooms, and outlying sites.
- Secondary doors, utility doors, and overhead doors on red brick walls shall be finished dark bronze.
- Other secondary doors, utility doors and overhead doors shall be finished to match the wall color.
- Door and frame colors shall match.
- ACRB approval is required for use of glass block as an exterior wall system.
- Translucent fiberglass glazing is allowed for clerestory windows.

Transition Buildings

- Transition buildings are those that lie on the border between two visually distinct areas.
- Integrate the color and materials of adjacent areas as accents on transition buildings, only with ACRB approval.

Existing Buildings

- Match the materials for addition / alteration projects unless a significant change to the exterior envelope is included.
- Whenever possible bring existing facilities into compliance.

ROOF SYSTEMS

As one of the most visually formidable pieces of a building, the roof color, material, and form play a large role in architectural compatibility. Dark bronze standing seam metal hipped roofs and gabled roofs with sloped parapet endwalls are the standard. Consistent application of these roof types both here in the Community Setting and in the Flightline Setting will help to bridge the gap between the two.

Roof Systems Configuration

- Use hipped roofs with pitches between 3:12 and 6:12 as the primary building form for all facilities.
- Use sloped parapet endwalls at entries or stair towers on a limited basis.
- Maintain overhangs to no larger than 2 feet.
- Low-sloped roofs are only allowed for larger structures in combination with hipped roofs, or to match existing conditions on add / alt projects.
- Do not use low-sloped roofs as the dominant roof form.

Materials and Color

- Use dark bronze factory finished standing seam metal in a 16-inch wide panel with 2 inch raised seam.
- Use membrane roofing for low-sloped roofs with a minimum pitch of ½:12.

Gutters, Downspouts, and Flashing / Fascias

- Use continuous gutters on all slopes of all facilities.
- Gutters shall be factory finished to match the roof color.
- Use full-length downspouts for all facilities.
- Downspouts on red brick buildings shall be factory finished dark bronze.
- All other downspouts shall be finished to match the wall color.
- Minimize the visual impact of downspouts by coordinating placement with architectural features.
- Do not use exposed, angled leaders.
- Generally, the flashing color shall match the roof color.
- Stepped flashing at the intersection of roofs and walls shall match the wall color on non-red brick buildings.
- Generally, the depth of fascias shall be no larger than 8 inches.

Vents and Equipment

- Minimize, consolidate, and organize roof penetrations on the least visible side of the building.
- PVC pipes and other roof elements must be finished to match the roof color.
- Do not use rooftop mechanical units unless mandatory. When used, minimize the negative visual effects with placement and screens.

ENTRANCES

Entrances not only act as the transitional element from exterior to interior, they also provide opportunities to create a focal point on a facade, to establish a user's first impression, and to delineate the importance of the building by the size and architectural detailing of the entrance structure.

Primary

- Clearly identify the main entrance to the facility from the parking area and street.
- Create enclosed vestibules and weather-protected transition spaces at entrances.
- The use of a sloped parapet endwall with circular accent pediment is encouraged.
- Incorporate courtyards and / or entry plazas into the design.
- Use accent pavers in approach walkway or at entry plaza feature.
- Locate magazine racks and other similar elements out of view to avoid visual clutter.

Secondary

- Secondary entrances for pedestrian access are to reflect the character of the primary entry but to a lesser extent.
- Do not leave secondary entrances unprotected from the elements.
- Provide a small courtyard with seating area near secondary entrances.

Service and Emergency Egress

- Provide unobtrusive service entrances that are physically and visually separated from primary and secondary entrances.
- Minimize visual impact with proper location.
- Enclose fire escapes in structures matching the material, color, and style of the building.
- Use landscaping screen walls to screen and separate loading docks.
- Minimize visual impact of exit-only doors.

Handrails

- Use dark bronze, pre-finished metal handrails.
- Integrate handrails with facility design..

Drop-Offs

- Limit use of covered drop-offs to high-visibility facilities.
- Covered drop-offs, when required, shall be an integral part of the building entrance.
- Treat these sites as special, high-profile design areas with corresponding amenities, design accents, and formal landscaping.

Arcades and Loggias

- The use of arcades and loggias as an extension of the building entrance are encouraged.
- Integrate with the building's design, style, form, and materials.

Plazas and Courtyards

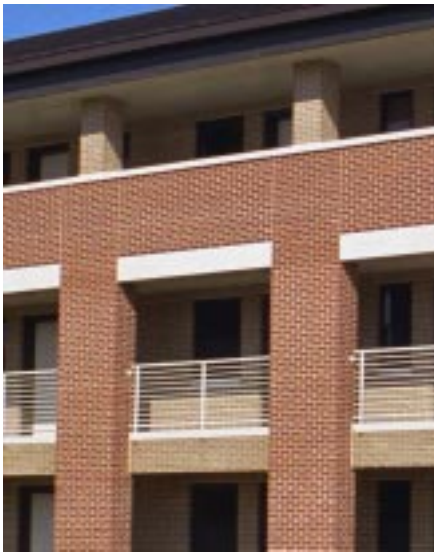
- The use of plazas and courtyards is encouraged.
- Use concrete surfacing with brick paver accents.
- Integrate handicap access ramps.

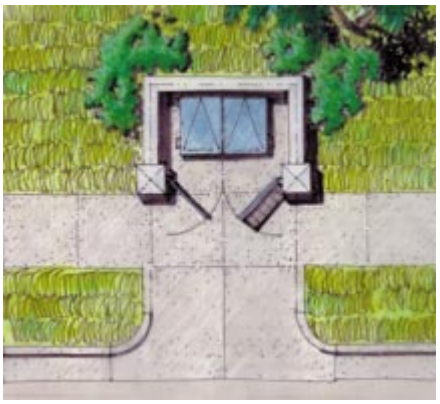
SCREENS AND ENCLOSURES

Screens and enclosures help to minimize the visual impact of undesirable features as well as provide separation and security where necessary. Both solid and landscape screens, separately and in combination, can be applied to achieve visual continuity throughout the installation. See Landscape Section for landscape screens.

Screen Walls

- Make screen walls compatible with adjacent facilities.
- New screen walls adjacent to historic buildings require ACRB approval.
- Generally, do not attach screen walls to buildings.
- Construct free-standing garden walls of red brick.
- Do not place screen walls directly adjacent to roadways or sidewalks.
- Use landscaping to soften walls.





Fencing

- Fencing adjacent to high-visibility facilities, such as the Child Care Center, must be of high quality materials such as decorative metal fencing.
- Brown vinyl-covered chain link fence in low-visibility sites is allowed with ACRB approval.
- Use brick columns with black metal fence infill for screen walls that don't require visual separation.

Dumpster Enclosures

- Locate dumpsters to minimize visual impact.
- Construct dumpster enclosures of red brick with warm accents.
- In high-visibility locations provide dark bronze metal gates to screen dumpsters.
- Provide dark bronze protective bollards.
- Design enclosures as part of service areas for new facilities.
- Provide concrete pads and access aprons in front of enclosure doors.
- Include landscaping areas and provisions for pedestrian access.

Force Protection

- Integrate security walls with the building architecture.
- Use a combination of walls, bollards, and tension cables with landscape beds.
- Do not paint Jersey Barriers.
- Minimize the visibility of all force protection devices with landscaping and integral designs.

ANCILLARY STRUCTURES

Similarity in ancillary structures, color, and materials provides a thread of continuity in the outdoor spaces on the base and reduces overall visual clutter.

General

- Centrally locate and combine smaller structures to reduce visual clutter.
- Use non-weathering, corrosion resistant materials.
- Landscape ancillary structures consistent with larger structures.
- Minimize the use and number of storage buildings, and consolidate in low-visibility areas.

Pavilions

- Construct steel pavilions in high-visibility areas of columns and dark bronze, standing-seam metal, hipped roofs.
- Organize pavilions to create gathering areas with an internal focus.
- Centrally locate pavilions between several facilities for multipurpose use.
- Wood gazebo kits are not allowed.

Waiting Shelters

- Construct shelters with dark bronze mullioned infill windows and a dark bronze, hipped roof.
- Locate shelters in convenient locations with proper allowances for bus or automobile traffic and pedestrian access.
- Use accent pavers in the walkway to distinguish the area.
- Minimize the number of shelters constructed through proper placement.

HISTORIC STRUCTURES

Buildings that have historic significance should stand as focal points within the community, providing evidence of the base's heritage as well as architectural distinction. These structures are unique, displaying materials, construction methods, and detailing that is not easily replicated. Maintenance and protection of the original materials in these irreplaceable cultural assets is encouraged.

General

- Ensure rehabilitation and new construction are consistent with the original character of the facilities and adhere to the Secretary of Interior Standards.

Bldg #	Bldg Description
202	Officer Housing
204	Officer Housing
206	Officer Housing
208	Officer Housing
210	Officer Housing
214	Officer Housing
216	Officer Housing
218	Officer Housing
203	Officer Garage
207	Officer Garage
211	Officer Garage
215	Officer Garage
217	Officer Garage
322	NCO Housing
324	NCO Housing
326	NCO Housing
328	NCO Housing
330	NCO Housing
332	NCO Housing
334	NCO Housing
336	NCO Housing
338	NCO Housing
340	NCO Housing
342	Special Morale/Welfare
344	Air Defense Council
325	NCO Garage
337	NCO Garage
708	Hangars 4 & 5
300	Medical Supply
302	Medical Clinic
306	Headquarters

- Consult with the State Historic Preservation Office and Advisory Council on Historic Preservation when working on historic structures and follow the consultation process required by the National Historic Preservation Act.

Character

- Work on and around historic structures should retain original character as portrayed in drawings, writings, and/or archival photographs.
- Avoid conjectural architectural features that create a false sense of historical detail.
- Preserve original building materials and architectural details where possible.

Wall Systems

- Existing walls are stucco.
- Clean, repair, and maintain architectural detailing as per historic precedent.
- Use dark bronze, storefront systems with clear glazing for doors and windows.
- Smaller residential character window and door openings are to be replaced with historic reproduction wood and doors.
- Use translucent fiberglass panels for larger hangar-like windows and openings in hangar doors.

Roofing Systems

- Roofs shall be terra cotta tile except for the hangar buildings, which are light gray rolled asphalt.
- Tile color and profile to match existing.
- Gutters and downspouts shall be copper.

Additions and Alterations

- Additions and/or exterior alterations to historic structures are discouraged.
- Restore and maintain the original intent as established by historic precedent where possible.
- Carefully integrate into the character of the historic building while preserving the main facility's original character and defining features.

flightline

The Flightline architectural setting has a well-established visual aesthetic of beige colored split-face block walls with brown accents, dark bronze or dark red window and door frames, and dark bronze standing seam hipped roofs. Design buildings with similar architectural vocabulary as the Community setting, but with simplified detailing more befitting their function.

This setting is also home to two historic aircraft hangars that have been combined into a single facility by a recent addition. This structure compliments the character of this setting and adds a focal point as the distinguished visitor arrival and departure area. Standards for all of the historic structures can be found at the end of the Community Setting Section.

CHARACTER

The architectural character of this setting should reflect the industrial function of the area in building form and detailing. Maintain the aesthetic of the Community setting in large massive structures.

General

- Follow the Community standards except as noted here.

Style, Form, Scale, and Massing

- Consolidate functions where possible to eliminate smaller, individual buildings.
- Use styles, forms, and accents similar to those of the Community setting but with more simplified detailing.
- Lower the apparent height of hangars and warehouses by arranging single story spaces along the perimeter.
- Modulate building elevations with submasses, clerestories, openings, material changes, and architectural detailing.
- Avoid large flat facades addressing the street.
- All industrial facilities require curbs and bollard protection.

WALL SYSTEMS

The Flightline wall character shall reflect the industrial nature of the area while recalling the qualities found in the Community Setting. Utilitarian materials and simplified detailing are appropriate in this area.

Materials and Color

- Construct walls of beige colored split-face block with brown, split -face block accents.
- Structures taller than 2 stories may employ the use of corrugated metal siding factory finish to match the block color.
- Use a split-face veneer system on existing non-compliant structures.
- Incorporate sloped parapet endwalls with circular pediment accent at entryways.
- A greater use of implied loggias is encouraged here to break up large flat facades.
- Precast and stucco may be used for accents in walls or as entrance features..

Accents / Details

- Use on a limited basis, similar detailing to that of the Community setting.
- Use brown, split-face block details in proportions similar to the beige brick details found in the Community setting.

Wall Components

- Finish wall components to match the wall color.
- Locate vents and louvers as planned design elements.

Windows and Doors

- Use larger window openings to compliment larger massed buildings.
- Skylights, clerestories, and translucent wall panels are encouraged to naturally light larger facilities.
- Provide powder-coated window and door frames in dark red.

ROOF SYSTEMS

The use of dark bronze, standing seam metal hipped roofs is the strongest visual link to the Community architectural setting. Limited application of the sloped parapet endwall with circular pediment accent at entries or other high visibility areas will also help to reinforce the connection of this very distinct area to the rest of the base.

- Larger facilities may use low-sloped or vaulted roofs.
- Use membrane roofing for low-sloped roofs.
- Use rolled asphalt or standing seam metal for vaulted roofs.
- Lower appendages and entries shall have hipped roofs.
- Lower roofs must be consistent in design with the main roof.

ENTRANCES

Entrances will typically be less formal due to the more industrial functions found here. All primary entrances, however, will be consistent in coverage and visibility as those in the Community setting.

- Limit the use of drop-offs and formal entries to high-visibility facilities.
- Maintain functional and visual separations between service and pedestrian entrances.

ANCILLARY STRUCTURES

Minimize the number of ancillary structures in this area to reduce the visual clutter and to maximize usable area. Use these facilities to reinforce the architectural character of the area while making subtle ties to the remainder of the installation.

- Construct all ancillary structures of beige colored split-face block.
- Cover existing pre-manufactured storage facilities with split-face block veneer panels. Paint to match block color.
- Cover storage facilities with bronze, standing seam metal roof to promote compatibility.

family housing

The structures within the Family Housing architectural setting are distinct from those of the Community setting in their character and presence. They portray characteristics of typical residential architecture such as brick and lap siding, double-hung windows, and gabled roofs.

Achieving architectural compatibility relies on common materials, site furnishings, and landscaping. Residential settings shall use site furnishings and landscaping compatible with the rest of the base. Residents are afforded some opportunity to express individual "pride-of-place" in and around their homes through the Self-Help program. This work will be controlled through the use of the Self-Help materials and color palette that is also complementary throughout the base.

CHARACTER

Family housing units will portray a strong architectural character that clearly defines a separation between the work and home environments. Style and quality are to be comparable to those found in the public neighborhoods outside of Pope AFB.

General

- Organize units into cohesive neighborhoods with curvilinear streets and cul-de-sacs.
- Design units to avoid visual monotony along the streetscape.
- Construct ancillary structures following the Community setting standards.

WALL SYSTEMS

Use red brick as the predominant color in the wall system to create a visual link between this visually distinct architectural setting and the Community setting. Include vernacular accents to express a sense of regionalism in the architecture making important visual links to Fort Bragg and the community outside of Pope AFB.

Materials and Color

- Use red brick and lap siding as the primary wall materials for all units. When using both materials make one dominant.
- Use field, trim, and accent colors from the approved color schemes (see B-2).
- Alternate color schemes to create diversity along the streetscape.
- Do not paint exposed concrete.
- Use vinyl or vinyl-clad, operable windows in white for all applications.
- Incorporate glazing in all primary entry doors.

ROOF SYSTEMS

Articulation in roof form is encouraged in this area to create diversity and individuality among the units. Maintain consistency in color to tie them together as a neighborhood.

Configuration

- Use hipped roofs with a pitch between 4:12 and 6:12.
- Use the same pitch for all roof segments of a single unit.
- The use of dormer windows or vents is encouraged.
- Widths of fascias must be consistent for an entire facility.

Materials and Color

- Use dark gray shingles with an architectural profile.
- Incorporate fascias, gutters, and downspouts on all roof segments.
- Finish gutters and fascias to match the trim color.
- Finish downspouts to match the wall color or dark bronze if on brick.

ENTRANCES

Design entrances and porches that express a vernacular character while promoting outdoor activities and community interaction.

Primary

- Emphasize the public nature of the primary entry by creating a porch for neighborhood or family interaction.
- Provide limited opportunities for personal expression at the front porch with furnishings, planters, flags, etc.

Secondary

- Provide a stoop or patio at all secondary entrances when units are at grade.
- Use bug screens to enclose porches.

Lighting

- Provide adequate lighting for safety and comfort without creating excess light pollution.
- Use recessed or consistently styled, wall-mounted light fixtures.

Fencing

- Use wood, shadowbox fencing for trash enclosures and backyard privacy.

site design standards

A sense of community relies heavily on the character of the landscape and the elements within it. Site elements and development methods used consistently throughout the installation provide a common thread of visual continuity to the base as a whole. They bring consistency to the landscape between the different architectural settings and special use areas as well as a blending of the various aesthetics of the existing structures on base.

Circulation systems such as roadways, walkways, and parking areas and support systems such as signage, lighting, and utilities are visual constants throughout the base that link the individual settings and areas together.

site development

To make the most of a building's functionality and architectural character, its placement and relationship to other facilities must be properly addressed prior to design. Consistency in how the building addresses the street or other buildings is as important to architectural compatibility as the physical appearance of the building itself. Separations, vistas, and the relationship between building and the ground plane also play important roles in the visual appearance of the buildings.

SITING

Proper placement of facilities according to function, style, and size is essential. A building's function is a determining factor in the aesthetic character of the resulting facility. For example, a more utilitarian building such as a warehouse or maintenance facility would be visually out of place amongst a group of administrative buildings. It is equally important to allow for the possibility of expansion or alteration of facilities as mission requirements change.

General

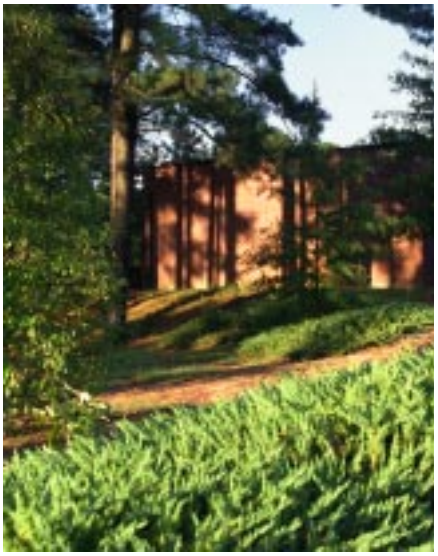
- Site and configure buildings to reflect project requirements and to respond to conditions identified with a proper and complete site analysis.
- Locate primary entrances to face parking areas. Provide additional entrances to address the street or building drop-offs when functionally necessary.
- Avoid siting service or storage yards along primary or secondary street fronts whenever possible.
- Include force protection requirements and blend measures into facility and site design.
- Use sites to infill where possible and avoid "urban sprawl"
- Follow the land use plan.
- Avoid locating buildings in low-lying areas.
- Provide a landscape transition space between visually discordant settings and special use areas.

Setbacks

- Consider adjacencies when establishing the front yard setback.
- Generally maintain a front yard setback of not less than 30 feet where possible.
- Maintain a side yard setback of not less than 40 feet between buildings.
- Comply with Force Protection requirements.

Expansion Areas

- Locate facilities and develop the site to allow for future expansions.
- Maintain that area free from permanent development.
- Designate future expansion in design floorplans and siteplans.



LANDFORM

Contour the land to accommodate buildings and other facilities and minimize the negative impacts of certain large or unattractive elements within the landscape.

Topography

- Integrate building design with the topography.
- Use landforms to screen and / or direct pedestrian circulation.
- Use berms to soften / screen views of parking areas or to reduce the visual height of buildings with raised floor elevations.

Drainage

- Grade sites to provide positive drainage away from buildings and traffic areas.
- Include a subsurface French drain to carry water to daylight.
- Shape retention / detention ponds in a natural, curilinear manner.

SITE FURNISHINGS

Color, style, and placement of site furnishings can significantly contribute to a unified base image. They provide consistent elements throughout the base regardless of where they occur.

Using the selected site furnishings adds constancy to the landscape in form and style. Certain elements can also compliment architectural features or styles within the community. (See A-1 for a listing).

General

- Follow the ACP for all new facilities and replace old dissimilar elements when possible by refinishing and re-siting in accordance with ACP recommendations.
- Use dark bronze color for all site furnishings.

Benches and Seats

- Use factory finished metal benches and seats in all settings.
- Incorporate seats at locations where short-term seating is required, such as formal building entries or plazas.
- Incorporate benches at locations where longer-term seating is required such as parks, playgrounds, or waiting shelters.
- Provide mid-morning to late-afternoon shade for all benches and seats.

Litter / Ash Receptacle

- Use factory finished metal litter and ash receptacles in all settings.
- Locate litter receptacles at building entrances, waiting shelters, picnic pavilions, playgrounds, and other areas of public concentration (near benches and seats).
- Locate ash urns at building entrances and designated smoking areas.
- Locate out of view near entries to avoid visual clutter.

Planters

- Use factory finished metal, free standing planters in limited applications.
- Locate freestanding planters in conjunction with other exterior elements.
- Mortar-less garden block planters are an acceptable design.

Drinking Fountains

- Use pre-manufactured, factory finished, drinking fountains.
- Locate fountains near recreation areas, picnic pavilions, recreation trails, and near specific / appropriate facilities such as youth centers and fitness centers.
- Place free standing fountains on concrete pads with open access on all sides. Do not place on buildings.

Bike Racks

- Use factory finished, metal bike racks that can accommodate a minimum of two bicycles.
- Provide bicycle-parking areas for all facilities. Combine areas for densely sited buildings.
- Increase the numbers of available bike racks in residential and recreational areas.
- Soften bicycle parking areas with landscaping or screen walls.
- Place bike racks on concrete pads in accessible locations near established bike routes and near secondary entrances to buildings.

Playground Equipment

- Provide pre-manufactured play equipment.
- Locate play equipment at parks, family housing areas, child development centers, community centers, and recreational areas.
- Place play equipment in designated areas complete with safe ground surfacing, benches, litter receptacles, and landscaping for shade.
- Provide adequate pedestrian circulation paths to and from the play areas.
- Playground areas must be ADA compliant.

Picnic Tables

- Use metal factory finished, picnic tables with metal frames at all pavilions and recreation areas.
- Group tables to allow for large parties or individual family outings.
- Do not use at administration yard areas or industrial facilities.
- Provide mid-morning to late-afternoon shade for all picnic tables.

Photo of grill to be provided

Barbecue Grills

- Use pedestal-rotating grills on galvanized pipe posts.
- Limit built-in grills to recreational areas, family centers, dormitories, and fire stations in a black color.
- Use materials that compliment adjacent facilities, such as brick or split-face block.
- Placement and design of built-in barbecues must be approved by the ACRB.
- Integrate built-in barbecues with screenwalls, plazas, and courtyards.

Flag Poles

- Use brushed aluminum pole, mounted on a concrete base.
- Create a “sense of place” at flagpole locations with landscaping or plaza designs.

Bollards

- Use bollards to protect buildings, equipment, and people from potential damage caused by vehicle impact and to restrict access.
- Use an 8-inch diameter, factory finished aluminum, domed-top bollard as the base standard.
- Use same style bollard with single-function luminaire to enhance pedestrian areas, pathways, and building entrances.
- For force protection use an 8-inch diameter, concrete filled, steel pipe. Finish bollards with domed-top plastic covers in Architectural Brown.
- For lighted force protection bollards use same style bollard capped by a pre-manufactured, domed top, single luminaire.
- For bollards protecting equipment or buildings from vehicle damage, paint to match adjacent surfaces.

Tree Grates

- Use black cast iron tree grates set in concrete paving.
- Accent opening with concrete pavers.
- Use tree grates at formal plazas, building entries, and courtyards.

ROADWAYS

The transportation network should provide a common experience throughout the base from a vehicular perspective; clean, neat, and orderly. Establish a hierarchy of roadways to define and organize traffic flow throughout the installation while providing a consistent visual experience.

Planning

- Regularize the roadway network by eliminating redundant roads.
- When opportunities arise, remove nonconforming streets.
- Intersect roadways at 90-degree angles and avoid "offset" intersections.

Primary

- Primary roadways are the widest and fastest arterials and will often contain two lanes of traffic in each direction.
- Minimize stops and turns, and eliminate on-street parking.
- Individual curb cuts are discouraged.
- Keep adjacent on-street parking, parking areas, and buildings away from the road edge.

Secondary

- Secondary roadways are feeder streets from access roads to primary roads.
- On-street parking is not recommended.
- Keep adjacent on-street parking and parking areas away from the road edge.
- Minimize the number of curb cuts from driveways and area entrances.

Tertiary

- Tertiary roadways are the narrowest and the slowest and provide access to individual facilities or parking areas.
- On-street parking, driveways, parking lot entrances, and service drive entrances are allowed.
- Maintain capability for large vehicles such as fire trucks and moving vans.

Service Drives

- Service drives provide access for service vehicles to certain parts of a building or site.
- Combine service drives for several facilities where possible.
- Minimize the visual impact of service drives through correct placement and landscape screening.

Intersections

- Incorporate crosswalks at all intersections within the Community setting.
- Provide a 45-foot clear zone for vision at uncontrolled intersections.
- Parking is not allowed within 40 feet of intersections
- Reduce corner radiuses at lower hierarchy roadways to reduce traffic speeds.

Paving, Curb and Gutter

- Use asphalt paving for all primary, secondary, and access roadways.
- Use concrete paving in loading areas and sites used by heavy vehicles.
- Gravel surfacing may be used on patrol roads and outlying sites only.
- Incorporate a concrete apron where gravel roads meet paved roads.
- All patching shall match adjacent materials.
- Provide a 6-inch integrated concrete curb and gutter for all roadways in developed areas.
- Patrol roads and service drives in outlying areas may not require curb and gutter, with ACRB approval.
- Wheel stops in lieu of curbs are not allowed.
- Do not paint concrete curbs.
- Note: Do not cut and patch asphalt roads. Jack and bore is the Base standard.

PARKING AREAS

Develop functional lots with clear circulation and a positive appearance that complements the facility. Provide a pleasant transition from vehicle to facility. (Also see Landscape Section).

General

- Minimize the visual impact of parking by using small, well-screened parking lots.
- Combine parking areas for adjacent facilities.
- Limit reserved parking.
- Avoid parking automobiles directly in front of primary building entrances.

Setbacks

- Maintain a 20-foot setback from streets where possible.
- Provide a 10-foot minimum separation between building and parking area.

Medians and Islands

- Provide planting medians for every four rows of vehicles and planting islands for every 20 stalls.
- Provide designated areas for pedestrian cross traffic.
- Use coordinated lighting standard layout within island placement.
- Use the minimum number of light poles to provide required illumination.

Lot Layout

- Use the 90-degree parking configuration when possible. Adjustments are allowed if space is inadequate or if turnover is high.
- Coordinate entries with other adjacent drives to assure well-designed circulation patterns.
- Keep parking angles consistent within each parking area.
- More than 35 spaces require more than one access point.
- The standard stall size is 9 feet by 19 feet.

Reserved Parking

- Minimize designated parking spaces by name, rank, or title.
- Reserve consolidated parking sections instead of individual stalls.
- When required, use curb-mounted signs.
- Provide handicap parking and access.

Motorcycle Parking

- Incorporate designated motorcycle parking within each parking area.
- Provide covered motorcycle and bicycle parking in dorm areas.
- Use a concrete pad for all motorcycle parking areas.

Recreational Vehicle Parking

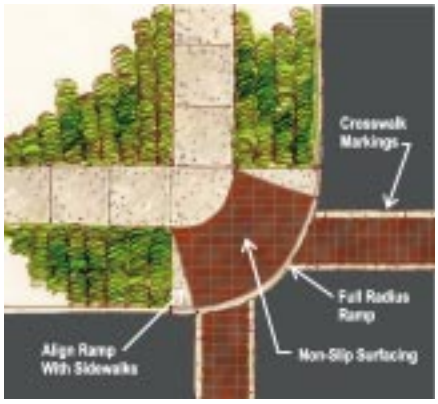
- Keep all recreational vehicles on combined lots located away from the heart of the installation.
- Visually screen storage areas from public spaces.

Painting and Striping

- Paint stall separation lines with a white, 4-inch wide single stripe.
- Use reflective traffic paint for crosswalk stripes and acrylic paint for parking stripes.

Paving, Curb, and Gutter

- Provide asphalt paving as the standard.
- Use concrete where required for heavy vehicles, motorcycle parking, and where fuel spills may occur.
- Use 6-inch integrated concrete curb and gutter for parking areas. Asphalt curbs, wood timbers, and pre-cast wheel stops are not allowed.



PEDESTRIAN CIRCULATION

Create convenient and pleasant pedestrian circulation pathways that will help promote walking as a real alternative to vehicular transportation.

Sidewalks

- Provide walkways in varying widths of no less than 5 feet parallel to all primary, secondary, and access roadways.
- Provide curvilinear / meandering walks for dormitory and housing areas.
- Maintain a minimum 3-foot wide landscaped parkway between curb and sidewalk at primary, secondary, and access roadways.
- Provide sidewalk access to all facilities for visual scale and proportion considerations as well as to accommodate traffic volume.
- Do not make any sidewalk smaller than 3 feet wide.
- Use natural colored concrete with a broom finish and troweled edges for all walkways in developed areas.
- Use terra cotta colored concrete pavers, joint patterns, or scoring in high-visibility areas.

Crosswalks and Ramps

- Ensure that all paths lead to the safest crossing point possible, and cross roadways at 90-degree angles.
- Incorporate ADA access curb ramps and crosswalk markings into all crosswalks.
- Construct crosswalks of terra cotta colored concrete pavers with natural gray concrete edging at high-visibility locations to improve safety.
- Construct all concrete curb ramps with a waffle stamp pattern and flared curb ramps.
- Provide for adequate drainage away from the ramp or by drainage grates.

Recreational Trails

- Provide a minimum, 6-foot paved width in a free form configuration that follows the contours or other natural features.
- Separate the trail system from vehicular traffic by a minimum of 10 feet when running parallel to roadways.
- Take advantage of natural environments such as the golf course, wetlands and wooded areas. Make the walk pleasant by incorporating activity generators, interpretive signs and recreation opportunities along the trail.

- Provide a 5-foot by 10-foot paved rest area approximately every mile along the trail system, including a bench and litter receptacle at each location.
- Use asphaltic concrete for trail systems except in highly natural settings such as wetlands and wooded areas; then cover the trails with compacted, crushed fines.

SIGNAGE

Signs are an important and positive element in the overall base appearance. Their purpose is to clearly communicate necessary or helpful information concerning directions or identification without adding visual clutter.

General

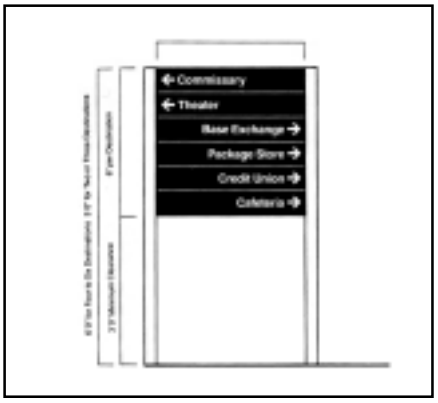
- Use concise clear signing in accordance with Pope AFB, AMC, and Air Force Sign Standards.
- Minimize the number of signs used for each facility.
- Signs must be consistent in style, color, language, and placement.

Color

- Use Park Service Brown backgrounds with reflective white lettering on metal placards for all identification and directional signs unless otherwise noted.
- Use square metal posts finished Park Service Brown.
- Finish back of sign and fastening devices Park Service Brown.

Typeface

- Use Helvetica Medium in upper and lower case, for primary information and Helvetica Light for secondary information.
- A serif typeface may be used for special identification signs associated with community facilities, key intersections, and special entrances.



Identification Signs

- Limit the use of monument signs to entry gates, headquarters buildings, housing neighborhoods, and special use areas / facilities with ACRB approval.
- Construct monument signs of red brick with beige brick accents. Use pin mounted Helvetica letters.
- Limit the use of mottoes, individual titles, or insignia.
- Incorporate landscaping, accent lighting, and / or paving into the design.
- Facility identification signs identify individual facilities and are generally free standing and not applied to facility facades.
- Street addresses are displayed near the formal, primary entry of the facility.
- Building numbers are displayed in one location, either the back or side corner of buildings, coordinated with architectural features.
- Building-mounted signs or individual letters with corporate logos are allowed for commercial facility signs only with ACRB approval.

Direction Signs

- Use to identify highly frequented or special interest destinations and street names.
- Display the Air Mobility Command logo decal on the left of all street name signs.

Regulatory Signs

- Use for traffic control, parking, and base warnings.
- Traffic control signs must follow the *Manual on Uniform Traffic Control Devices* administered by the Federal Highway Administration for color and display requirements.
- Handicapped parking signs must follow AMC Sign Standards for color and display requirements.
- Base warning signs must adhere to AFP 32-1097 for display requirements.

LIGHTING

Exterior lighting is a system that directly impacts the visual qualities of the base. By day, the fixtures and poles add visual character and rhythm to the streetscape. By night, these amenities become a dominant force in the perception of safety and comfort. The use of common components and the removal of overhead lines will help to improve and unify the base appearance.

General

- All classifications of roadways will use the same luminaries, poles, and mounting height.
- Bury all utilities serving lighting fixtures.

Lamp Types

- Use high-pressure sodium lamps for all applications.
- Photometrics are required for all applications.

Luminaires and Poles

- Use factory finished luminaires and poles for all roadways.
- Equally space poles on alternating sides of all roadways.
- Provide fixtures at all four corners of intersections.
- Provide pedestrian-scaled lighting fixtures throughout housing area and along recreation trails and sidewalks not adjacent to roadways.
- Equally space light fixtures for side walks on same side of walk.

Mounting Heights

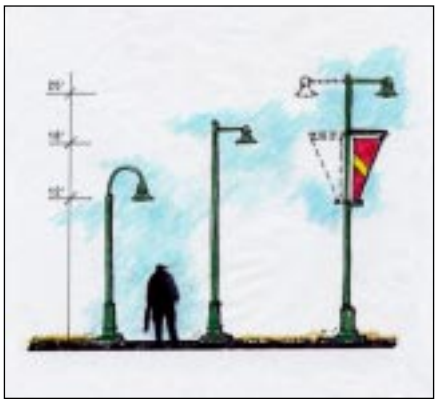
- Control spillover light near residential areas.
- Mount street luminaires at 20 to 30 feet high and pedestrian luminaries at 12 feet high.

Parking Areas

- Use arm mounted, square, shoebox-type luminaires in factory finished, dark bronze.
- Use multiple luminaires on dark bronze, square poles to reduce the number of poles needed.
- Coordinate pole placement with parking island locations.

Architectural and Accent

- Incorporate recessed, wall-mounted luminaires to wash light across plazas, paving, and stairs.
- Uplight landscaping and architectural features to emphasize importance and hierarchy.
- Minimize the use of building mounted fixtures for general illumination of service yards and outdoor spaces.



UTILITIES

Utilities are an unavoidable visual liability in the built environment. Reducing the negative impact of utilities reduces the visual clutter of the base thereby allowing the eye to focus more clearly on the other, more aesthetic elements of the landscape.

Removing or relocating utility lines and equipment from the most visible areas of the installation will improve the overall character.

Utility Lines

- Place all pole mounted utility lines and building feeds underground.
- Use every opportunity to bury utilities.
- Exposed conduits, cables, and wires are not permitted.

Utility Structures

- Avoid free standing utility structures where possible.
- Use underground vaults for equipment where possible.
- Locate pad mounted equipment in less visible areas and screen with landscaping or screen walls.

Fire Hydrants

- Locate fire hydrants at least 5 feet away from other structures. Maintain a 30-inch clear area around the hydrant.
- Paint hydrants Window Box Brown with color-coded cap-band to indicate pressure.

Mechanical Equipment / Components

- Carefully place and organize equipment and services.
- Locate mechanical equipment on the least public side of the building.
- Screen all mechanical equipment with landscaping materials or screen walls. (Refer to Screen Walls).
- If mechanical equipment is placed within 10 feet of a building, paint to match the wall color. If placed farther than 10 feet, paint dark bronze.
- Minimize the use of all externally attached meters and control devices and paint to match the wall color.
- Externally attached utility conduits, lines, or equipment (except meters and control devices) are not allowed.

Communications

- Collocate coaxial and telephone exterior components and entry points.
- Align all communications components with one another on the horizontal and vertical plane.

landscape

A properly designed and implemented landscape enhances all facilities and the community in general. It also provides a significant opportunity to unify a functionally and aesthetically diverse community by providing a visual constant throughout. Through careful selection of plant materials, the landscaping will reinforce and enhance the southern character of the area. Creating continuity and reducing the negative visual impact of unsightly features are some of the primary goals of landscaping. In the application of these goals, the designer should strive towards sustainability (low maintenance).

GENERAL

Develop the Southern Colonial look with regional plant materials in curvilinear layouts. Include landscaping with all new facilities and use it to enhance / unify existing non-conforming facilities.

Maintenance

- Use only approved planting materials as specified on the Plant Material List in Appendix D.
- Follow plant material provider's installation recommendations for planting depth, spacing, soil conditioning, staking, fertilizing, and watering.
- Use pine straw mulch in planting beds to reduce the need for weeding and to conserve water.
- Reduce maintenance costs by using proper plant materials in configurations that do not require pruning.
- Install sprinkler systems to reduce maintenance costs.
- Use timers and electronic water gauges to avoid over-watering.

Edging

- Provide metal edging at planting beds as the standard.
- Separate and define all planting areas with sod cut edging at a minimum.
- Use concrete paver edging in the most visible and important locations.
- Use spade cut edging for Self-Help projects.
- Do not use wood timber edging in any applications.

Landscape Screens

- Where possible use landscaping instead of walls for screening.
- Use a three-tiered landscape screen that combines ground covers, shrubs, and small trees with walls and fences.
- Use shrubs or vines on trellis structures to hide unsightly equipment or otherwise control the visual environment.

OPEN SPACE

Low lying areas between facilities, even though less visually important, still require careful consideration. Use the proper ground cover to visually tie the larger pieces of the landscape together and to help prevent soil degradation.

Ground Covers

- Use turf for all recreation areas, parade grounds, lawns, and open fields.
- Create undeveloped natural areas using native grasses and shrubs.
- Incorporate no-maintenance ground cover materials in areas of steep slope or areas that are difficult to maintain.

STREETSCAPING

Landscaping along streets plays many roles in enhancing the installation. It helps to establish the hierarchy of the roadway system, it embellishes the driving experience, and it creates a visual characteristic that carries throughout the base.

Roadways

- Primary roadways use same species, deciduous street trees equally spaced to coordinate with light standards.
- Secondary and access roadways use a more random spacing of mixed species in clusters and / or groupings at focal points.
- Plant deciduous street trees on the building side of sidewalks.
- Reduce the density of plantings in the Industrial / Flightline area.

Parking Areas

- Apply screening devices such as berms, walls, and landscaping to soften the impact of automobiles.
- Use deciduous street trees in medians and islands to create shade and interest.
- Fill in between trees with low shrubs, flowers, and ground covers. Allow areas for pedestrian cross circulation.

- Use shrubs in groupings around the perimeter of parking areas to soften views from the street.
- Avoid the use of hedges outlining parking areas.

Recreational Trails

- Incorporate formal plantings at high visibility areas along the trail system.
- Use informal groupings of trees, shrubs, and flowers at rest stops, play areas, and intersections.

FACILITY LANDSCAPING

The goals of facility landscaping are to provide a soft transition from the horizontal ground plane to the vertical building plane, to highlight building features like entries, and to hide unattractive building features like utility risers or service areas.

Community

- Emphasize the approach of high-visibility entryways by symmetrically lining the walkway with similar species at a regular spacing.
- Use landscaping elements that compliment building architectural features and proportions.
- Design randomly spaced plantings and tree massing to fill-out areas between facilities.
- Front facades are to have a consistent landscaping of a limited palette.
- Use ground covers within planting beds.

Industrial / Flightline

- Use landscaping to soften and reduce the scale of larger facilities.
- Minimize the use of deciduous trees and shrubs to prevent leaf buildup along the apron and runway.
- Reduce the density of landscaping by grouping landscape elements.

Residential

- Use mixed species in an informal planting style.
- Use randomly spaced plantings and tree massing.
- Reinforce pedestrian routes with landscaping to add user appeal.
- Provide accent plantings at neighborhood entries.

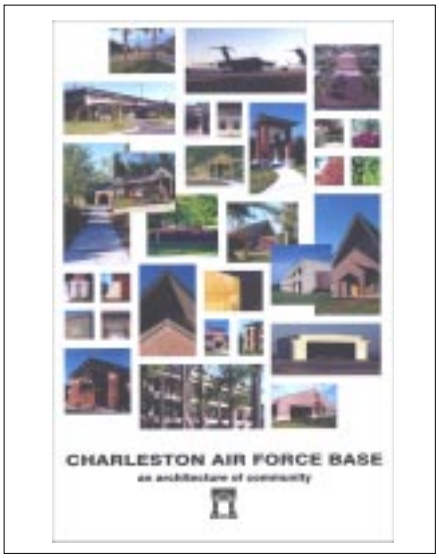
implementation

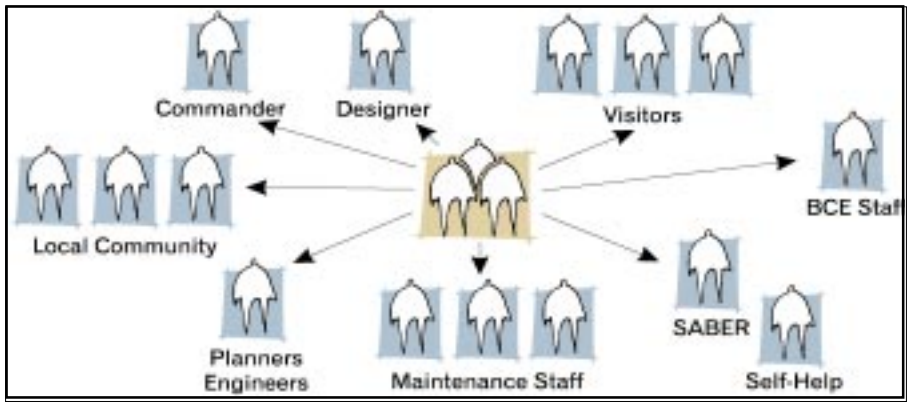
The ACP is a multipurpose tool that shall be used throughout the entire planning, programming, and design process, from inception to project completion for any project on base.

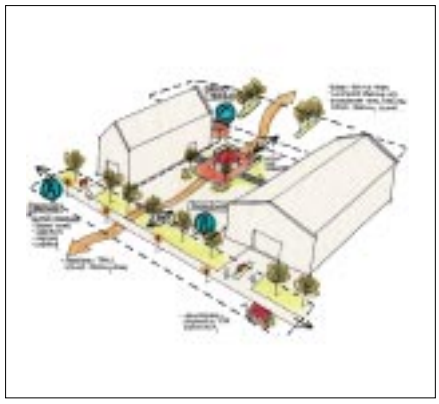
The ACP is implemented by the base civil engineer (BCE).

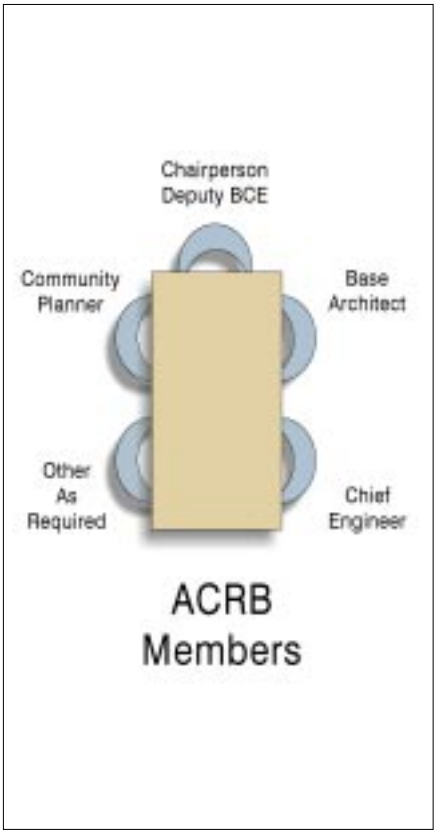
While architectural designers are the primary users of the plan, it must also be used by project managers, programmers, planners, engineers, maintenance and operations personnel, self-help personnel , SABER personnel, and the Architectural Compatibility Review Board (ACRB).

In the next three pages, key elements in the implementation process are highlighted.









Key Elements

Adhering to key elements of the implementation process leads to success in designing excellent facilities that will be compatible with and a part of the whole community.

- Distribute the ACP.
- Establish the Architectural Compatibility Review Board (ACRB).
- Hire good designers.
- Respect the General Plan.
- Process proper submittals.
- Cross-reference all planning and design documents to the ACP.

Distribute the ACP

Distribution of the plan should be as wide as possible. On base, provide copies to commanders of all major units and tenants, the civil engineering squadron commander, branch chiefs, base architect, and master planner. Provide copies to the major command and headquarters representatives. The Public Affairs Office maintains extra copies for general distribution, distinguished visitors, and other guests.

Establish the ACRB

The ACRB is the installation approval authority for all designs and visual features on the installation.

- The ACRB is organized by the Base Civil Engineer (BCE).
- Members include the base architect, landscape architect, community planner, chief engineer, and others as determined by the chairperson.
- The base architect, engineer disciplines, and project manager review designs regardless of ACRB involvement.
- The ACRB meets as required or as a subgroup of the installation Facilities Board (FB).
- Most projects, regardless of size, are approved by the ACRB (the chairperson makes the determination on review requirements).
- Design projects are submitted to the ACRB by the Base project manager (see project checklists in Appendix A3 for submittal requirements).
- Changes to the base standards are permitted in unique, special areas and require approval of the wing commander in coordination and concurrence with HQAMC-CE..

Hire Good Designers

Ensure the involvement of the design oriented personnel in the A-E selection process. Select A-E firms that are sensitive to, and understand architectural compatibility. A-Es must demonstrate ability to develop designs that meet architectural standards. The AF project manager provides copies of the ACP to the A-E before design starts.

Respect the General Plan

All new projects must agree with the goals and objectives outlined in the installation master plan to ensure compatibility with project siting and adjacent facilities.

Process Proper Submittals

All design projects are reviewed by the ACRB. This includes Requirements Documents, Concept Design, and Final Design submittals.

Submittals shall include the required information and data at the appropriate times, and the process shall allow adequate review time.

Requirements Document

In this initial submittal, the A-E defines, with the help of the AF, the requirements for the project. It may explore potential solutions, but more importantly, it includes "bubble diagrams", relationships of major functional elements, and site / facility development options. This submittal is reviewed by the ACRB.

Each submitted package will comprise the following.

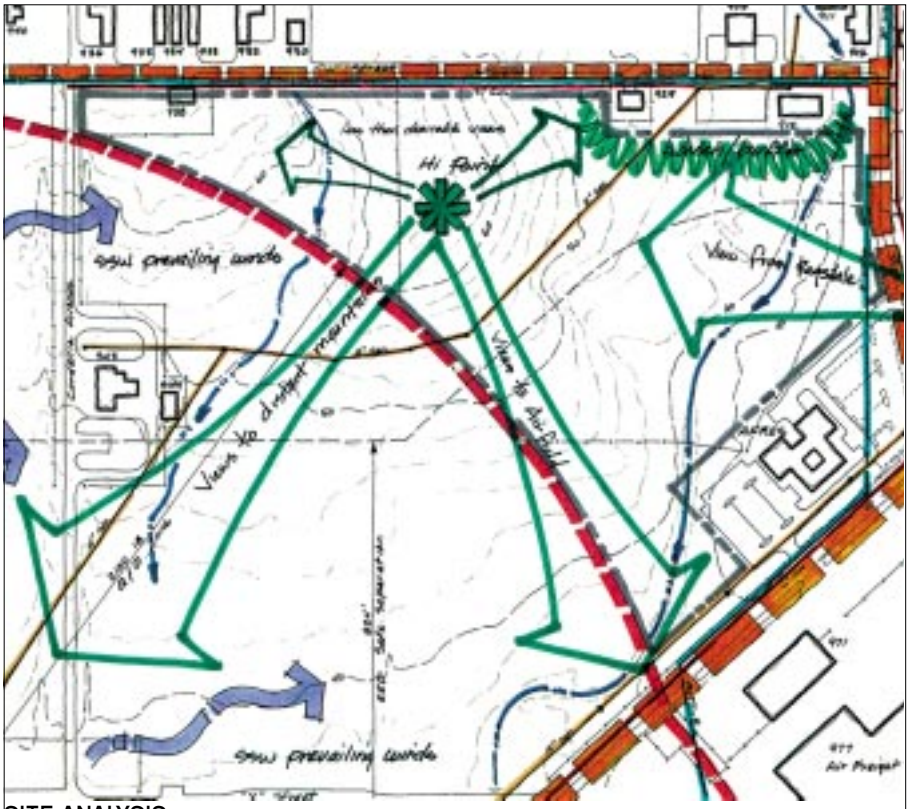
- Scope / Programming Requirements
- Project Description
- Goals and Objectives
- Subarea Development Plans
- Site Inventory / Site Analysis
- Spatial Relationship Analysis (i.e., relationship to site)
- Adjacent Facilities and Project Site Photos

Site Inventory / Site Analysis includes (but is not limited to): vehicular traffic patterns, view, climatic conditions, environmental, safety, utility constraints, and geographic conditions. Refer to adjacent sketch.

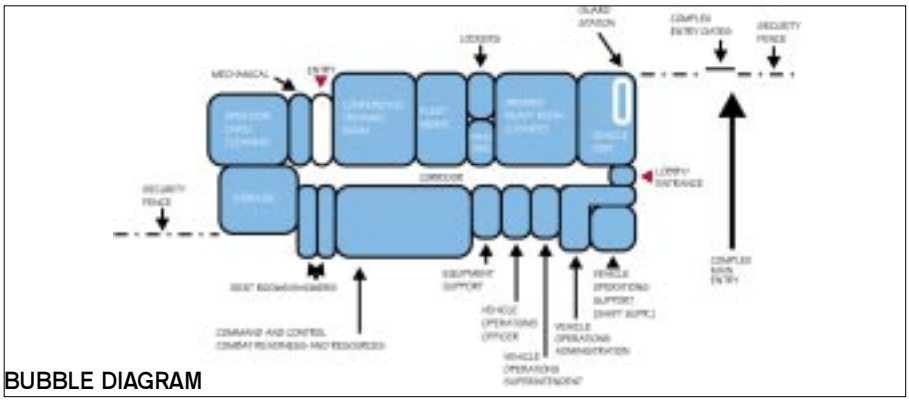
Concept Design

This submittal must include adequate information to fully describe the project design, allowing customers / clients to easily comprehend the proposed solution. The goal is to achieve AF customer understanding and approval early in this process. Multiple submittals may be required for large or complex projects. Generally, completion of concept design requires two submittals. The first is a more schematic approach to the solution, while the final concept presents a refined and more detailed design. These submittals shall be design presentation documents, not construction documents (CADD). Develop site plan, floor plans, roof plan, and building massing / elevations concurrently to ensure the proposed solution is a comprehensive design (not piecemealed). Do not develop a floor plan without consideration of site and building massing.

SUB AREA PLAN



SITE ANALYSIS



BUBBLE DIAGRAM

The ACRB reviews the packages as part of the concept development process. If the initial submittal is not approved, or if there are significant concerns or comments, a resubmittal is provided prior to proceeding to the next design stage.

Each submittal will be in color and comprised of a complete comprehensive package including:

- Concise Verbalized Design Concept
- Systems Description
- Adjacent Facilities and Project Site Photo
- Site Plans
- Floor Plans with furniture included
- Composite Elevations (with shadows)

- Mechanical / Electrical / Communication Entrances and Equipment Locations / Configuration.
- Building Sections
- Roof Plan
- Massing or Perspective Sketches
- Study Model (as required)
- Cost Estimate

Final Design

The final design shall demonstrate that the project is consistent with the approved concept design. It includes highly developed drawings that further refine and detail the visual and functional quality of the design.

Each submittal will be comprised of a complete comprehensive package that includes but is not limited to:

- Formal Colored Rendering (early in this phase)
- Material / Color Boards (interior and exterior)
- Catalog Cut (photos)
- Design Analysis
- Cost Estimate
- Construction Documents
- Formal Color Rendering or Presentation Perspective as appropriate

Contract documents must be in AutoCADD and include comprehensive drawings and specifications to ensure that a project can be constructed to meet all of the requirements and standards defined by the ACP.

All mechanical and electrical drawings must be consistent with the architectural drawings. All utility elements such as light fixtures, transformers, panels, grilles, vents, piping, etc., must be shown on the architectural drawings.

ACRB Checklists

Smaller projects and service contracts are reviewed by the BCE using the checklist, located in the Appendix, and are submitted to the ACRB as required. The Base project manager is responsible for providing the design checklist to the ACRB for completion.

The design checklist will assist the design review agencies in conducting consistent architectural reviews for ACP compliance. The project checklist is designed for use with major projects including military construction, nonappropriated funds, maintenance, and family housing projects requiring professional design services. Smaller projects include simplified acquisition contracts, in-house operations and maintenance projects, self-help, and housing projects that do not require contract design services.

appendices

A Exterior Paint

B Materials and Colors / Plans and Guides

C ACP Design Checklists

D Landscape Materials

E Index

A	B	C	D
SW - 2060 Casa Blanca	SW - 2378 Ocatillo	SW - 2045 Boulevard Beige	SW - 2035 Chicory

Paint Guidelines

- Use factory finished building products to reduce maintenance costs.
- Follow painting guidelines as described in the illustrations.
- Consider individual paint schemes in context to the community.
- Keep paint schemes simple and do not “over detail” accents.
- Do not paint over factory finishes unless the existing colors do not comply.
- Consistently apply paint colors to similar elements.
- Use a single color per field, trim, or accent element on a facade.
- Downplay service buildings by minimizing accent and trim painting.
- Do not use yellow hazard markings on buildings.
- Painting insignias or other super-graphics on buildings or tanks is discouraged.
- Do not paint curbing.
- Paint wall mounted equipment to match adjacent surface.
- Do not accent downspouts, vents, louvers, or gable ends.
- Do not paint concrete elements and remove existing paint.
- Typically paint wall surfaces and accents, such as trim, quoins, and fascias Seed Pearl.
- Paint tanks and supporting equipment Seed Pearl.
- Paint primary and accent doors.
- All secondary doors shall match the wall color to reduce visual clutter.
- Variations are subject to ACRB approval.

Original color samples are on file in the Base Civil Engineering office.

materials and colors

The following building materials and products are representative of the style, color, and material to be used at Scott Air Force Base. All construction projects are to use these items or a comparable product by another manufacturer. The manufacturers and styles are listed only to establish a baseline for the selection of construction materials. Original color samples are on file in Base Civil Engineering.

Community

Architectural Lettering – Building Mounted
Style: Helvetica
Color: Chicory (Beige Facade)
Color: Boulevard Beige (Red/Brown Façade)

Ash Receptacle
mfg: TimberForm or equal
Material: Colored Coated Steel
Model: 2812
Diameter: 1'-2"
Width: 1'-1"
Height: 2'-8"
Color: Green

Barbeque Grill
Mfg: GameTime or equal
Material: Heavy-Duty Galvanized Steel
Model: 60
Cooking Area: 270 sq."
Height: 36"
Three Position Chained Grate
360-degree Rotation
Color: Black

Bench with Armrests
Mfg: TimberForm or equal
Material: Color Coated Steel
Model: 2822-6
Length: 6'-2"
Width: 1'-11"
Height: 2'-1"
Seat Height: 1'-4"
Color: Green

Bench - Arched Back with Armrests
Mfg: TimberForm or equal
Material: Colored Coated Steel
Model: 2824-6
Length: 6'-2"
Width: 1'-11"
Height: 2'-11"
Seat Height: 1'-4"
Color: Green

Bike Bollards – CycLoops
Mfg: TimberForm or equal
Material: Schedule 40 Steel Pipe
Model: 2173
Length: 0'-11"
Width: 10"
Height: 3'-0"
Pipe Size: 4.5" x 1.315"" OD
Minimum Bikes: Three
Color: Green

Bollards
Style: 8-inch Steel Concrete Filled
Color: Chicory

Brick - Field Face
Mfg: US Brick, Richtex (Southern Brick)
Style: 1450 Modular
Color: Red Barktex

Mfg: Palmetto Brick Co.
Style: Modular
Color: Dark Red Ruffle

Brick - Accent: Beige
Mfg: US Brick, Richtex
Style: 761, Wire Cut
Color: Light Grey

Charcoal Grill
Mfg: GameTime or equal
Material: Heavy-Duty Galvinized Steel
Model: 60
Cooking Area: 270 sq."
Height: 36"
Three positioned Chained Grate
360-degree Rotation
Color: Black

Doors - Aluminum Storefront
Mfg: Kawneer Company, Inc
Color: Medium Bronze Anodized

Fence
Mfg: Rohn Fencing
Color: Brown

Fencing - Fabric (Chain Link)
Mfg: Acme Fencing Fabric
Color: Brown

Garden and Retaining Wall
Mfg: Keystone
Type: Garden Wall
Color: Tan

Glass
Style: Insulated
Color: Bronze

Lighting – Area
Mfg: Hubbell Lighting, Inc
Type: High Pressure Sodium
Fixture: MHK
Color: Bronze

Lighting – Parking and Street
Mfg: Hubbell Lighting, Inc
Type: High Pressure Sodium
Mounted: 4-feet Arm
Fixture: RLG
Color: Bronze

Lighting - Pedestrian
Mfg: U.S. Architectural Lighting
Material: Cast Aluminum Fixture
Mounted: Straight Arm
Pole Height: 12'-0"
Color: Green

Litter Container
Mfg: TimberForm or equal
Material: Colored Coated Steel
Model: 2811-DT
Diameter: 2'-2"
Height: 3'-3"
Color: Green

Paint – Beige
Mfg: Sherwin Williams
Color: SW-2045 Boulevard Beige
Surface: Walls (masonry and metal), Overhead Doors, and Downspouts (adjacent surface is beige).

Paint – Brown
Mfg: Sherwin Williams
Color: SW-2035 Chicory
Surface: Bollards, Hollow Metal, Doors and Doorframes, Exterior HVAC Equipment.

Paint – Green
Mfg: Sherwin Williams
Color: SW-2378 Ocatillo
Surface: Metal Poles.

Paint – Roof Industrial Coating
Mfg: Lilly Industries, Inc.
Formula Number: 626D4184
Color: T-Stratford Brown Satin Nubelar

Mfg: Morton Industrial Coatings
Formula Number: 836T62
Color: Stratford Brown

Mfg: Valspar Industrial Coating
Flurothane II L/S
Color: Stratford Brown

Pavilions
Mfg: Poligon Park Architecture
Shape: Ramanda Series (RAM) Rectangle,
Roof Slope: 4:12
Roof:Standing Seam Metal Roof
Roof Deck: 2"x 6" T&G Deck
Structural Framing: Painted SW-2035 – Chicory
Wood Deck: Natural Stain

Picnic Table
Mfg: GameTime
Material: Powder PVC Coated Galvanized Steel Frame
Model: P1836
Length: 6'-0"
Width: Top 30", Seat 10"
Color: Green

Planters
Mfg: TimberForm or equal
Material: Color Coated Steel
Model: 2836 (square) or 2837 (rectangular)
Length: 1'-7" (square) or 1'-11" (rectangular)
Width: 1'-7" (square) or 2'-11" (rectangular)
Height: 1'-4" (square or rectangular)
Color: Green

Roof
Mfg: Dimensional Metals, Inc.
Style: Hip
Type: Standing Seam Metal
Profile: 16" Wide Panel with 2" Raised Seam
Color: Stratford Brown (Matte)

Window
Style: Single Hung
Type: Aluminum
Frame: Thermal Break
Grade: DH-HC40 (minimum)
Color: Medium Bronze

Historic

Doors
Style: Historic
Material: Wood
Color: White

Roof
Mfg: Ludowici-Celadon Roof Tile
Type: Barrel - Terra Cotta Tile
Color: Old Mission Blend

Windows
Style: Double Hung
Material: Wood
Color: White

Flightline

Split-Face Block
Mfg: Adams Products
Model: A-807 (granite aggregate)
Color: Tiger Yellow

Accent Split-Face Block
Mfg: Adams Products
Model: A-417
Color: Tiger Stripe

plans and guides

Use the most recent version of the following documents.

General	Commander's Guide to Facility Excellence, Air Mobility Command Installation Design, AFM 88-43 General Plan - Pope Air Force Base
Family Housing	USAF Family Housing Community Guidelines for Environmental Improvement USAF Commander's Guide to Family Housing Excellence
Historical Buildings	Secretary of the Interior's Standards for Historic Preservation Projects (36 CFR 68) Archaeological and Historic Resources Management, DoD Directive 4710.1 Cultural Resources Management, AFI 32-7065
Signs	Sign Standards, AFP 32-1097 AMC Sign Standards (ETL 93-02) Manual on Uniform Traffic Control Devices, Federal Highway Administration
Individual Facility Design Guidance	AMC Design Guides
Interior Design	Interior Design Guide, Air Mobility Command
Force Protection	AF Force Protection Guide Interim Anti-Terrorism / Force Protection (ATFP) - Tri-Services

architectural compatibility review board project checklist

This checklist applies to all projects large and small including self-help projects. Before building, purchasing, or installing items, the project manager will submit the following documentation for review and approval by the Architectural Compatibility Review Board (ACRB). Large projects requiring professional design services must submit this form along with the design package at each phase of the project. The list of items below the phase title is representative of what must be submitted at each phase. Project continuation is contingent on phase approval. Smaller projects not requiring full design services must submit project documentation as designated by the ACRB chairperson. All projects must comply with the ACP standards as verified by this checklist and the ACRB, unless a specific exception is approved by the chairperson.

Project Title: _____

Project Number: _____ **Project Address:** _____

Submitted By: _____

Type of Project ❑ SABER ❑ MILCON ❑ O&M ❑ Self-Help ❑ Housing ❑ Other: ___

Full ACRB Review Required? ❑ Yes ❑ No **ACP Provided to Designer?** ❑ Yes ❑ No

Programming Documents Reviewed by ACRB? ❑ Yes ❑ No

REQUIREMENTS DOCUMENT / PROGRAMMING PHASE

❑ Scope ❑ Project Description ❑ Adjacent Facilities Photos
❑ Goals ❑ Objectives ❑ Future Project Considerations
❑ Site Inventory / Site Analysis ❑ Other: _____
❑ Coordinated with Subarea Development Plans
❑ Coordinated with Other Planning Documents and Policies
❑ Preliminary Solutions Allow for Full Compliance of ACP (design not finalized until concept design is complete)
❑ Budget ❑ Materials ❑ Furnishings
❑ Colors ❑ Equipment

Date Submitted: _____

Date Resubmitted: _____

❑ Design Complies with ACP Standards
❑ Resubmittal Requested
❑ Comments Attached

By: _____ **Date:** _____

User Approval:

By: _____ **Date:** _____

CONCEPT DESIGN

Building

❑ Style / Form ❑ Scale ❑ Massing
❑ Proportions ❑ Materials ❑ Colors
❑ Wall Systems ❑ Details ❑ Ancillary Structures
❑ Lighting ❑ Signs ❑ Roof Systems
❑ Entrances ❑ Windows / Doors

Site Development

❑ Site Selection ❑ Setbacks ❑ Utilities
❑ Lighting ❑ Signs ❑ Screens / Enclosures
❑ Furnishings ❑ Landscape ❑ Future Expansion Considered

Circulation

❑ Roads / Service Drives ❑ Parking ❑ Signs ❑ Other: _____
❑ Lighting ❑ Paths / Walks ❑ Landscape ❑ Other: _____

Date Submitted: _____

Date Resubmitted: _____

❑ Design Complies with ACP Standards
❑ Resubmittal Requested
❑ Comments Attached

By: _____ **Date:** _____

User Approval:

By: _____ **Date:** _____

FINAL DESIGN

❑ Final design remains consistent with approved concept design and elements listed above
❑ Materials / Color Board (interior and exterior) ❑ Rendering
❑ Catalog Cuts ❑ Landscape Development
❑ Construction Documents ❑ Fascia / Gutters / Downspouts
❑ Architectural Details
❑ Cost Reduction Proposal (if necessary) Comply with ACP
❑ Coordinated with Other Planning Documents and Policies
❑ Coordination / Organization of Mechanical and Electrical Elements
❑ Other: _____

Date Submitted: _____

Date Resubmitted: _____

❑ Design Complies with ACP Standards
❑ Resubmittal Requested
❑ Comments Attached

By: _____ **Date:** _____

User Approval:

By: _____ **Date:** _____

JUSTIFICATION FOR NONCOMPLIANCE

Design Does Not Comply with ACP Standards

Explain: _____

_____

By: _____ **Date:** _____

landscape materials

	BOTANICAL NAME	COMMON PLANT NAME	USE
Trees	*Acer rubrum "dromondii"*	Swamp Red Maple	Street Tree, Buffer, Open Space,
	Amelanchier x Grandiflora	Serviceberry	Feature, Foundation
	Betula Nigra "heritage"	Heritage River Birch	Feature, Foundation
	Cercis canadensis	Redbud	Feature, Understory
	Cornus florida	Dogwood	Feature, Understory
	Cornus kousa	Chinese Dogwood	Feature, Foundation
	Lagerstromia indica	Crape Myrtle	Feature, Foundation
	Magnolia grandiflora	Southern Magnolia	Street Tree, Buffer, Open Space
	Nyssa sylvantica	Black Tupelo	Street Tree, Buffer, Open Space
	Prunus cerasifera atropurpurea	Purple Leaf Plum	Feature, Foundation
	Pinus taeda	Loblolly Pine	Buffer, Open Space
	Quercus phellos	Willow Oak	Street Tree, Buffer, Open Space
	Qurecus shumardii	Shumard Oak	Street Tree, Buffer, Open Space
	Quercus virginiana	Southern Live Oak	Street Tree, Buffer, Open Space
	Taxodium distichum	Bald Cypress	Street Tree, Buffer, Open Space
	Vitex agnus-castas	Chaste Tree	Feature, Foundation
Shrubs	*Abelia grandiflora*	Glossy Abelia	Hedge, Buffer, Open Space
	Azalea Indica "George Tabor"	George Tabor Azalea	Hedge, Buffer, Understory
	Azalea Satsuki "Pink Gumpo"	Pink Gumpo Azalea	Foundation, Understory
	Berberis thungergii atropurperea	Dwarf Barberry	Feature, Foundation, Mass
	"Crimson Pygmy"		Feature, Foundation, Mass
	Camellia sasanqua	Sasanqua Camellia	Feature, Foundation, Mass
	Deutzia x magnifica	Deutzia	Foundation, Mass
	Ilex crenata "Helleri"	Heller Japanese Holly	Foundation, Mass
	Ilex crenata "Stokes"	Stokes Japanese Holly	Foundation, Mass
	Ilex vomitoria	Yaupon Holly	Hedge, Buffer, Open Space
	Ilex vomitoria nana	Dwarf Yaupon Holly	Foundation, Mass
	Ligustrum lucidum	Wax Ligustrum	Hedge, Buffer, Open Space
	Ligustrum vicaryi	Golden Previet	Hedge, Buffer, Open Space
	Myrica cerifera	Wax Myrtle	Hedge, Buffer, Open Space
	Osmanthus frangrance	Sweet Olive	Hedge, Buffer, Open Space
	Pittosporium tobria "Wheeler's Dwarf"	Dwarf Pittosporum	Foundation, Mass
	Prunus lauroceraus	Dwarf English Laurel	Foundation, Mass
	Rahiolepis indica	Indian Hawthorn	Foundation, Mass
	Viburnum burkwoodii	Sweet Viburnum	Hedge, Buffer, Open Space
	Viburnum pilicatum tomentosum	Doublefile Viburnum	Hedge, Buffer, Open Space
Groundcovers	*Ficus primula*	Creeping Fig	Accent, Climbing
	Hemoracallis Hybrida "Stella De Oro"	Stella de Oro Daylily	Border, Understory, Mass
	Hosta Varieties	Hosta	Understory, Mass
	Liriope muscari "Majestic"	Majesctic Lily Turf	Border, Understory, Mass
	Liriope muscari "Variegated"	Variegated Lily Turf	Border, Understory, Mass
	Ophipojon juburan vittata	Varigated	Border, Understory, Mass
	Phlox subulata	Creeping Phlox	Border, Understory, Mass
	Trachelosperum asiaticum	Asian Jasmine	Understory, Mass

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SECTION 01012

DESIGN AFTER AWARD
(DESIGN/BUILD)
01/2003

1. GENERAL

The Contractor shall furnish and be responsible for a complete set of design documents as called for in Section 01010, GENERAL DESIGN AND CONSTRUCTION REQUIREMENTS–STATEMENT OF WORK and as called for hereinafter.

1.1 Within 30 days after Notice to Proceed (NTP), the Contractor shall submit, for approval, a complete design schedule with all submittals and review times indicated in calendar dates. The Contractor shall update this schedule monthly. No design submittals will be reviewed or evaluated until after receipt and acceptance of the proposed design/review schedule. Design submittals are required at the preliminary (60%), final (100%), and at the design complete (Corrected final) stage. The requirements of each design stage are listed hereinafter. The Contractor shall reflect the number and schedules for the design submittals phases in the progress charts. As a maximum, the 60%, 100%, and design complete submittals shall be made in one consolidated package which includes each of the major categories listed in paragraph “Contents of Design Submittals”.

1.2 To facilitate fast-track design-construction activities the Contractor may submit a 100% Site/Utility Design as the first design submittal. Following review, resolution, and incorporation of all Government comments, and submittal of a satisfactory set of site/utility design documents, the Contracting Officer shall issue a limited NTP which shall allow the Contractor to proceed with site development activities within the parameters set forth in the accepted design submittal. Submittal review, comment, and resolution times from this specification apply to this initial 100% Site/Utility Design Submittal. No onsite construction activities shall begin prior to receipt of a construction NTP by the Contractor.

2. DESIGNER OF RECORD

The Contractor shall identify, for approval, the Designer of Record for each area of work. One Designer of Record may be responsible for more than one area. All areas of design disciplines shall be accounted for by a listed, registered Designer of Record. The Designer(s) of Record shall stamp, sign, and date all design drawings under their responsible discipline at each design submittal stage (see SCR - "Registration of Designers").

3. DEFINITION OF DESIGN SUBMITTALS

3.1 Corrected Proposal Submittal. The Contractor shall submit 10 copies of corrected drawings and technical proposal notebooks which incorporate any corrections on clarification items or deficiencies noted during negotiations for distribution to the Users and Government agencies. Submit the drawings in half size to the project manager within 30 days after contract award. The complete submittal will be submitted on a CD-ROM and must be clearly labeled by solicitation number, project name, base, and offeror’s name. This item only applies to the successful proposer after contract award, and only if there were requests for clarification or deficiencies noted.

3.2 Site/Utility Design Submittal (100%). This submittal is provided to allow the Contractor to concentrate initial efforts for the site/utility portions of the project. By allowing this work to be separated, the Contractor is given the opportunity to fast track and begin construction on the site/utility work prior to completion of the building designs. More specific submittal requirements by stage and discipline are identified in the Savannah District Design Manual. This is available on the Internet (under “Engineering Criteria”) at:

http://en.sas.usace.army.mil

This submittal shall consist of the following:

3.2.1 Design analysis, developed to 100%, site work and utility work only.

3.2.2 100% complete site/utility drawings.

3.2.3 Final site/utility specifications.

3.2.4 Environmental permits, as required. When environmental permits are not required, the Contractor shall provide a statement with justification to that effect.

3.3 Preliminary Conformance Review Submittal (60%). This submittal is intended to insure that the Contractor's design is proceeding in accordance with the terms of the solicitation and the Contractor's original proposal as well as in a timely manner. This submittal shall consist of the following:

3.3.1 Design analysis, developed to 60%.

3.3.2 60% complete drawings.

3.3.3 Draft specifications.

3.3.4 Site utility design information need not be included in this submittal package except where interface to the interior building systems is required.

3.4 Final Design Submittal (100%). The review of this submittal is to insure that the design is in accordance with directions provided the Contractor during the design process as well as the original solicitation and the Contractor's proposal. The Contractor shall submit the following documents for Final Design Review:

3.4.1 60% review comments and responses annotated.

3.4.2 The Design Analysis submitted for Final Design Review shall be in its final form. The Design Analysis shall include all backup material previously submitted and revised as necessary. All design calculations shall be included. The Design Analysis shall contain all explanatory material giving the design rationale for any design decisions which would not be obvious to an engineer reviewing the final drawings and specifications.

3.4.3 The contract drawings submitted for Final Design Review shall include the drawings previously submitted which have been revised and completed as necessary. The Contractor is expected to have completed all of his coordination checks and have the drawings in a design complete condition. The drawings shall be complete at this time including the incorporation of any design review comments generated by the previous design reviews. The drawings shall contain all the details necessary to assure a clear understanding of the work throughout construction. Shop drawings will not be considered as design drawings. All design shall be shown on design drawings prior to submittal of shop drawings. Each discipline has unique Final Design submittal requirements. Respective chapters of the Savannah District Design Manual should be reviewed to determine the exact nature of these requirements.

Example for HVAC Controls: HVAC Controls System Drawings (MC-Plates) shall be submitted at the final design stage and shall include the following.

HVAC Controls System Legend
Control System Schematic
Equipment Schedule
Valve Schedule
Damper Schedule

Sequence of Operations
I/O Summery Table and Data Terminal Strip Diagram
Wiring Diagram
Communications Network and Block Diagram
Metering of Utilities (gas, electrical and water)
DDC Panel locations

The control drawings shall use the Corps of Engineers standard control drawings. These drawings are available at the following website: http://www.sas.usace.army.mil/eng/hvac/ or on the SAS_STD CD available from the project manager.

3.4.4 The draft specifications on all items of work submitted for Final Design Review shall consist of legible marked up guide specification sections.

3.4.5 Site utility design information need not be included in this submittal package except where interface to the interior building systems is required.

3.4.6 Design Quality Control Checklist as required in SECTION 01451.

3.5 Design Complete Submittal (Corrected Final). After the Final Design Review, the Contractor shall revise the contract documents by incorporating any comments generated during the Final Design Review and shall prepare final hard copy contract specifications. The Contractor shall submit the following documents for the design complete submittal:

3.5.1 Design analysis in final 100% complete form.

3.5.2 100% complete drawings.

3.5.3 Final specifications

3.5.4 Final review comments and responses annotated.
*5
3.5.5 Electronic Submission. All CADD files in native AutoCAD and native MicroStation format, as well as all prepared technical specifications shall be provided on CD-ROM. Six copies (three AutoCadd and 3 Microstation) are required.

3.6 Structural Interior Design (SID).

3.6.1 Definition. The Structural Interior Design (SID) shall involve the selection and sampling of all applied finishes including material, color, texture and patterns necessary to complete the building's interior architectural features. The SID shall also include all prewired workstation finishes and required drawings for prewired workstations. This information shall be submitted in 3" D-ring binders, 8-1/2" x 11" format.
*5
3.6.2 Present architectural finish samples in an orderly arrangement according to like rooms/areas receiving like finishes. Each like room receiving like finishes will be noted as a Color Scheme. Each Color Scheme shall have a written description of material used. This written description shall use the same material abbreviations and notes that appear on the Room Finish Schedule and Legend in the contract drawings. Present prewired workstation finishes on a color board separate from the architectural finishes. ~~Submit the SID binders concurrently with the architectural design submittals.~~
*5
3.6.3 Preliminary Submittals 60 Percent. Not required at this submittal. ~~The Contractor shall submit three (3) complete sets of the initial SID package. The design philosophy shall use a warm neutral background color with appropriate accent colors. All SID proposals shall be reviewed and approved by the Government. The Interior Designer shall revise the SID binders after each review and update the SID to satisfy review comments. Each submittal will follow this method of review until the Government approves the completed SID package.~~

*5
3.6.4 Corrected Final Submittal. ~~After approval of the Preliminary Submittal, t~~The Contractor shall submit ~~three (3)~~ four (4) complete sets of the ~~approved and final~~ Structural Interior Design packages. Once the Contractor has submitted the SID and the Government has approved the submittal, all materials, finishes, colors, textures and pattern submitted and approved for this project are then considered as part of the contract and the Contractor shall furnish all approved SID finishes. No deviations will be considered.

3.6.5 Format. Submit all SID information and samples on 8-1/2" x 11" modules with only one foldout. The maximum foldout width shall be approximately 25 inches. No foldouts on the top or bottom of the pages. Place the project title, base, architectural firm, page number and date on the bottom of each page or module.

3.6.5.1 The module shall support and anchor all samples. Anchor large or heavy samples with mechanical fasteners, velcro or double sided foam tape. Rubber cement or glue will not be acceptable.

3.6.5.2 Assemble the 8-1/2" x 11" pages and modules in a 3" D-ring binder. Holes for placement of the modules in the binder shall be 3/8" in diameter. Each binder shall be identified on the outside spine and front cover by title, project number, percentage phase and date.

3.6.5.3 Material and finish samples shall indicate true pattern, color and texture. Carpet samples shall be large enough to indicate a complete pattern or design.

3.6.5.4 Where paint manufacturers' color names and numbers are used indicate the finish of the paint such as gloss, semi-gloss, flat and so on.

3.6.5.5 Signage may include emblems, striping, letters, numbers and logos. The interior designer shall consider visual appearance, organization, location, structural supports (if required) and relation to other base graphics. Indicate on a separate signage sheet the location and message for all signage. Submit a sample of the signage material finish and color with the structural finishes.

3.6.5.6 No photographs or colored photocopies of materials will be accepted or approved.

3.6.6 The SID binder shall include the following information at each design submittal in this order:

==========
SEQUENCE OF SID SUBMITTAL

1. Title page

2. Table of contents

3. Design objectives - A statement of design objectives explaining the interior design philosophy of the facility shall be provided in the SID. Design objectives and the proposed method of accomplishing the objectives. Shall cover, when applicable, energy efficiency, safety, health, maintenance, image, personal performance of occupants and functional flexibility.

4. Interior floor plan

5. Interior sample finish boards

Scheme A
Scheme B
Scheme C

Example: All restrooms could be noted as color scheme "A", all general open office finishes could be noted as color scheme "B" and the main lobby could be noted as color scheme "C".

6. Room finish schedule

7. Signage

8. Signage plan

9. Prewired workstation typicals - elevations and component inventory.

10. Prewired workstation panel identification plan with electrical outlet placement including base feed.

11. Integration and layout of ACSIM specific furniture. Plan must show suitability of proposed space to suit the furniture to be provided.

==========

4. GOVERNMENT APPROVED DESIGN SUBMITTALS

The approval of submittals by the Contracting Officer shall not be construed as a complete check, but will indicate only that the design is in conformance with the contract requirements. Approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor is responsible for the design and construction of all work.

5. MAILING OF SUBMITTALS

All submittals to the Government during design shall be mailed using overnight mailing service. Each copy of the submittals shall be mailed to the addresses listed below. Each submittal shall have a transmittal letter accompanying it which indicates the date, design percentage, type of submittal, list of items submitted, contract number, transmittal number and point of contact with telephone number.

Addresses and submittal distribution:

1. U.S. Army Engineer District, Savannah
ATTN: CESAS-PM-MS/Mr. Stephen Welch
100 W. Oglethorpe Avenue
P.O. Box 889
Savannah, GA 31402-0889

2. U.S. Army Corps of Engineers,
Pope AFB Resident Office
ATTN: CESAS-CD-PSP/Mr. Dan Davis
527 Interceptor Road
Pope AFB, NC 28306-2314

3. Commander, 43d Civil Engineer Squadron
ATTN: LT Justin Youngbluth
560 Interceptor Road, Building 280
Pope AFB, NC 28308-2314

4. HQ AMC/CECE
ATTN: Capt Jeffrey J. White
507 Symington Drive

Scott AFB, IL 62225

5. Eastern Paralyzed Veterans Association
Architecture & Facilities Management
75-20 Astoria Boulevard
Queens, NY 11370-1178

The following table lists the number of copies of design submittal requirements for this project:

(1) Corrected Proposal/CD with all electronic files
COE 10 1/2 Size drawings
SAS 10 Revised Proposal Notebooks

	# Item Preliminary 60%	# Item Final 100% Includes Site/ Utility Design Submittal 100%	# Item Corrected Final
*5 (1) COE SAS	8 Design Anal. 8 Drawings 8 Spec. 2 Permit Appl. ~~1 SID~~ 1 CD w/all electronic files (AutoCadd)	8 Design Anal. 8 Drawings 8 Spec. 8 Ann. Comments 2 Permit Docum. ~~1 SID~~ 1 CD w/all electronic files (AutoCadd)	3 Design Anal. 3 Drawings 3 Spec. 3 Ann. Comments 2 CD's w/all electronic files (1 AutoCadd and 1 Microstation) 1 SID 1 Architectural Rendering
*5 (2) CD-PSP	2 Design Anal. 2 Drawings 2 Spec. 2 Permit Appl. ~~1 SID~~	2 Design Anal. 2 Drawings 2 Spec. 2 Ann. Comments 2 Permit Docum. ~~1 SID~~	1 Design Anal. 5 Drawings 5 Spec.1 5 Ann. Comments 2 Drawings, full size 2 CD's w/all electronic files (1 AutoCadd and 1 Microstation) 1 SID
*5 (3) 43d Civ Engr	~~15~~ 10 Design Anal. ~~15~~ 10 Drawings (~~10~~ 5 1/2 size – 5 full size) ~~15~~ 10 Spec. 2 Permit Appl. ~~1 SID~~	~~15~~ 10 Design Anal. ~~15~~ 10 Drawings (5 1/2 size - ~~10~~ 5 full size) ~~15~~10 Spec. 12 Ann. Comments ~~1~~2 Permit Docum. ~~1 SID~~	2 Design Anal. 2 Drawings 2 Architectural Renderings (1 orginal/1copy) 2 Spec. 2 Ann. Comments 2 Permit Docum. 2 CD's w/all electronic files (1 AutoCadd and 1 Microstation) 1 SID
*5 (4) HQ AMC	1 Design Anal. 2 Drawings 2 Spec. ~~1 SID~~	1 Design Anal. 2 Drawings 2 Spec. 2 Ann. Comments ~~1 SID~~	1 Design Anal. 1 Drawings 1 Spec. 1 Ann. Comments 1 SID

		1 Architectural Rendering
(5)	1 Design Anal.	1 Design Anal.
EPVA	1 Drawings	1 Drawings
	1 Spec.	1 Spec.
		1 Ann. Comments

6. GOVERNMENT REVIEWS
*2 *3
The Government will take ~~21~~30 calendar days to review and comment on each design submittal. For each design review submittal, the Contracting Officer's Representative (COR) will furnish, to the Contractor, a single consolidated listing of all comments from the various design sections and from other concerned agencies involved in the review process. The review will be for conformance with the technical requirements of the solicitation and the successful offeror's (Contractor's) RFP proposal. If the Contractor disagrees technically with any comment or comments and does not intend to comply with the comment, he must clearly outline, with ample justification, the reasons for noncompliance within 5 days after receipt of these comments in order that the comment can be resolved. The Contractor shall furnish disposition of all comments, in writing, with the next scheduled submittal. The Contractor is cautioned in that if he believes the action required by any comment exceeds the requirements of this contract, that he should take no action and notify the COR in writing immediately. Review conferences will be held for each design submittal at the Base. The Contractor shall bring the appropriate design staff to the review conference. These conferences will take place ~~the week~~within 14 calendar days after the receipt of the comments by the Contractor.

ProjNet/DrChecks is the required method for preparing and annotating comments. This is an Internet based database available on the Internet at:

http://65.204.17.188/projnet/home/version1/

User ID and password will be granted at the submittal stage.

6.1 If a design submittal is late by the approved schedule, the review will slip accordingly. The review process will not be shortened. Submittals date revisions must be made in writing at least 1 week prior to the effect submittal.

6.2 Post Review Conference Action. Copies of comments, annotated with comment action agreed on, will be made available to all parties before the conference adjourns. Unresolved problems will be resolved by immediate follow-on action at the end of conferences. Valid comments will be incorporated. After receipt of final corrected design documents upon incorporation of backcheck comments the Project Manager will recommend issuance of a Construction Notice to Proceed (NTP). The Government, however, reserves the right to disapprove design document submittals if comments are significant.

7. COORDINATION

7.1 Written Records. The Contractor shall prepare a written record of each design site visit, meeting, or conference, either telephonic or personal, and furnish within 5 working days copies to the Contracting Officer and all parties involved. The written record shall include subject, contract number, names of participants, outline of discussion, and recommendation or conclusions. Number each written record for the particular project under design in consecutive order.

7.2 Design Needs List. Throughout the life of his/her contract the Contractor shall furnish the COR a monthly "needs" list for design related items. This list shall itemize in an orderly fashion design data required by the Contractor to advance the design in a timely manner. Each list shall include a sequence number, description of action item, name of the individual or agency responsible for satisfying the action item and remarks. The list will be maintained on a continuous basis with satisfied action items checked off and new action items added as required. Once a request for information is initiated, that item shall remain

on the list until the requested information has been furnished or otherwise resolved. Copies of the list will be mailed to both the Administrative Contracting Officer and the agencies tasked with supplying the information. It is highly recommended that the Corps' RFI system be utilized during the design phase for this purpose. Originally developed for the construction phase but it works well for both. The system has report capability. User access and passwords will be furnished at the time needed with over the phone instructions.

8. DESIGN ANALYSIS

8.1 Media and Format. Present the design analysis on 8-1/2 inch by 11-inch paper except that larger sheets may be used when required for graphs or other special calculation forms. All sheets shall be in reproducible form. The material may be typewritten, hand lettered, handwritten, or a combination thereof, provided it is legible. Side margins shall be 1 inch minimum to permit side binding and head to head printing. Bottom margins shall be 1-1/4 inches, with page numbers centered 1 inch from the bottom.

8.2 Organization. Assign the several parts and sheets of the design analysis a sequential binding number and bind them under a cover indicating the name of the facility and project number, if applicable. The title page shall carry the designation of the submittal being made. The complete design analysis presented for final review with the final drawings and specifications shall carry the designation "FINAL DESIGN ANALYSIS" on the title page.

8.3 Design Calculations. Design calculations are a part of the design analysis. When they are voluminous, bind them separately from the narrative part of the design analysis. Present the design calculations in a clean and legible form incorporating a title page and index for each volume. Furnish a table of contents, which shall be an index of the indices, when there is more than one volume. Identify the source of loading conditions, supplementary sketches, graphs, formulae, and references. Explain all assumptions and conclusions. Calculation sheets shall carry the names or initials of the author and the checker and the dates of calculations and checking. No portion of the calculations shall be computed and checked by the same person.

8.4 Automatic Data Processing Systems (ADPS). When ADPS are used to perform design calculations, the design analysis shall include descriptions of the computer programs used and copies of the ADPS input data and output summaries. When the computer output is large, it may be divided into volumes at logical division points. Precede each set of computer printouts by an index and by a description of the computation performed. If several sets of computations are submitted, they shall be accompanied by a general table of contents in addition to the individual indices. Preparation of the description which must accompany each set of ADPS printouts shall include the following:

a. Explain the design method, including assumptions, theories, and formulae.
b. Include applicable diagrams, adequately identified.
c. State exactly the computation performed by the computer.
d. Provide all necessary explanations of the computer printout format, symbols, and abbreviations.
e. Use adequate and consistent notation.
f. Provide sufficient information to permit manual checks of the results.

9. DRAWINGS

9.1 Prepare all drawings on Computer-Aided Design and Drafting (CADD) so that they are well-arranged and placed for ready reference and so that they present complete information. The Contractor shall prepare the drawings with the expectation that the Corps of Engineers, in the role of supervision, will be able to construct the facility without any additional assistance from the Contractor. Drawings shall be complete; unnecessary work such as duplicate views, notes and lettering, and repetition of details shall not be permitted. Do not show standard details not applicable to the project, and minimize unnecessary wasted space. Do not include details of standard products or items which are adequately covered by specifications on the drawings. Detail the drawings such that conformance with the RFP can be checked and to the extent that shop drawings can be checked. Do not use shop drawings as design drawings.

The Contractor shall use standard Corps of Engineers title blocks and borders on all drawings. Submit an index of drawings with each submittal. The COR will furnish the Contractor file number, drawing name prefix, and specifics for inclusion in the title blocks of the drawings.
*3
9.2 Create all drawings using CADD methods in AutoCad and MicroStation format. Save all Design Complete CADD files as AutoCad and MicroStation ~~5.0 or~~ latest version. The Contractor shall use A/E/C/CADD Standard Release 2.0 (http://tsc.wes.army.mil) ~~and EM 1110-1-1807 Standards Manual for U.S. Army Corps of Engineers Computer-Aided Design and Drafting (CADD) Systems~~ as guidance for standard details, cell libraries, title blocks, and layer/level assignments. Drawing features not addressed in the standard~~EM 1110-1-1807~~ shall conform to drafting standards.

9.3 Only standard fonts provided by AutoCad or MicroStation are allowed to be used in the creation of CADD files. No fonts created by third parties or the designer are permitted.

9.4 The uses of reference files and model files during the design stage is up to the discretion of the designers. All CADD files at Design Complete submittal shall be in separate folders by discipline or building, free standing, independent files by folder. All reference files shall be in the same folder as the design files. Example of folders, Civil, Building 1, Building 2, etc.

9.5 Submit all Design Complete CADD files on read/write CD-ROM disk.

10. SPECIFICATIONS

10.1 The project specifications shall be prepared using UFGS and Pope AFB specific guide specifications as specified in Section 01010, GENERAL DESIGN AND CONSTRUCTION REQUIREMENTS – STATEMENT OF WORK. If a UFGS guide specification cannot be found, contact Savannah District to see if a guide specification exists. If a guide specification does not exist the Design/Build Contractor will prepare a job-specific specification. The UFGS shall be edited and adapted by the designer for this project, incorporating UFGS instructions and recommendations in the notes to specifier contained in the guide specs. The designer is to delete inapplicable portions of the guide specification and revise and/or supplement, as required, the applicable portions to provide a complete project specification. Editing of specifications shall be for bracketed options and project requirements as stated in the RFP only. Deviations will not be allowed without prior approval from the Contracting Officer. Specifications shall be submitted at final design submittal in hard copy form that shows the text added and deleted with additions highlighted and deletions lined through but still readable. This feature is available in SPECSINTACT. UFGS sections and Pope AFB specific guide specifications shall be submitted by the Design/Build Contractor as specified in Section 01010, GENERAL DESIGN AND CONSTRUCTION REQUIREMENTS – STATEMENT OF WORK and as needed to address all portions of the work in the accepted proposal. The Division 1 GENERAL specifications provided in the RFP shall be used. No changes will be allowed to these sections.

Unified Federal Guide Specifications (UFGS) and Pope AFB specific Guide Specifications are available on the Internet at:

http://www.hnd.usace.army.mil and http://en.sas.usace.army.mil/

Many of these specifications are in Specsintact format (*.sec). Specsintact software is available free of charge at:

http://si.ksc.nasa.gov/specsintact

10.2 Submittal Register. Develop the construction submittal requirements during the design phase of the contract. List the submittal requirements in paragraph SUBMITTALS of each specification section. The SPECSINTACT program generates a submittal register from these paragraphs. Include this register at the end of Section 01330 SUBMITTAL PROCEDURES (DESIGN BUILD). The Contractor shall be responsible for listing all required submittals necessary to insure the project requirements are complied

with. The submittals paragraph shall identify submittal items such as shop drawings, manufacturer's literature, certificates of compliance, material samples, guarantees, test results, etc. that the Contractor shall submit for review and/or approval action during the life of the construction contract.

11. CONTENTS OF DESIGN SUBMITTALS

11.1 100% SITE/UTILITY DESIGN SUBMITTAL. The 100% site/utility design submittal shall contain, as a minimum, the following.

11.1.1 General Narratives:

11.1.1.1 Site/Layout. Explanation of objectives and factors influencing siting decisions. General overview of major site features planned, such as building orientation, drainage patterns, parking provisions, traffic circulation, provisions for the handicapped, security requirements, etc. Rationale for locating major site elements. Set back requirements or specific clearance requirements. Locations of borrow and spoil areas.

11.1.1.2 Utility Systems. Design narrative for the natural gas, water supply, storm drainage, and wastewater systems relating to this project. Include an analysis of the existing distribution systems capability to supply sufficient quantity at adequate levels. If the existing distribution systems are inadequate, provide the design solution to augment the systems to provide the requirements for the new facilities.

11.1.2 All drawings included in the required technical data for the proposal submission (see Contract Clauses, TECHNICAL SUBMISSION REQUIREMENTS AND INSTRUCTIONS) shall be developed to 100 percent completion. In addition to the individual utility plans, submit a combined utility plan drawn to the same scale as the individual utility plans.

11.1.2.1 General Site Layout. Scale shall be included.

11.1.2.2 Site Grading and Drainage Plans. Show locations of all sediment basins, diversion ditches, and other erosion control structures. Indicate the approximate drainage areas each will service. Indicate the materials, construction and capacity of each structure. Include limits of landscaping and seeded areas. General site grading and drainage shall be indicated by contour lines with an interval of not more than approximately 1 foot [800mm].

11.1.2.3 Road Alignment Plans. Scale shall be no greater than 1"=30' and profiles showing pavement and shoulder widths, azimuths and curve data, limits of grading, and erosion control. The materials to be used shall be indicated.

11.1.2.4 Traffic Control Plan. Traffic routing and signage shall be in accordance with The Manual on Uniform Traffic Control Devices for Streets and Highways, U.S. Department of Transportation, Federal Highways Administration.

11.1.2.5 Parking Lots. Show the actual dimensions of parking lots and measurements from a known reference point rather than coordinates at corners. Show the number of parking spaces.

11.1.2.6 Sanitary Sewer Plan. Scale shall be 1"=30' and profiles showing location and elevation of pipe, thrust blocks, manholes, etc. Materials and construction of main and appurtenances shall be indicated. Specifications shall be provided.

11.1.2.7 Water Supply Line Plans. Scale shall be 1"=30' and profiles showing locations of valves, thrust blocks, connections, etc. Materials shall be indicated and specifications shall be provided for valves, pipes, etc.

11.1.2.8 Electrical Plan Requirements.

11.1.2.8.1 Required diagrams and details on Site Electrical Drawings.

a. Off-Site Electrical Distribution Plans.
b. Off-Site Primary Circuit Routing Plans.
c. Off-Site One Line Diagrams.
d. Off-Site Woodruff Street Substation Expansion Plan.
e. Off-Site Details. (Dip Pole Line Construction, etc.)
f. On-Site Electrical Distribution Plan:
g. On-Site One Line Diagram.
h. On-Site Distribution Transformer Schedule: Provide with the following headings:
Transformer Designation.
Transformer Size (KVA).
Building(s) Served.
Primary Phase(s) and Circuit to which connected.
i. On-Site Details (Site Lighting, Trenching, Pad-Mounted Transformer, Pad-Mounted Switch, Pad-Mounted Cable Termination Cabinet, Traffic Signal Controller, Traffic Signal Lights, etc.).

11.1.9 Specifications. Provide final specifications which include all sections which apply to site/utility work.

11.1.10 Design Analysis. The design analysis shall include design calculations fully developed to support the design of the site and utility systems included in this submittal.

11.1.10.1 The design analysis shall include a Field Trip Report demonstrating coordination with the Pope AFB Information Technology Business Center (ITBC), Pope AFB 43d Civil Engineer Squadron, Exterior Electric Shop, the local cable TV service provider and the local telephone service provider. Instructions received shall be included.

11.1.10.2 The design analysis shall include all requirements included in chapter A-5 of the Savannah District Design Manual for Military Construction.

11.1.11 Geotechnical. Soils analysis and geotechnical report will be furnished by the Government with the RFP. Any additional data necessary for the design will be obtained by the Contractor. Geotechnical information must be provided to support all assumptions and design parameters utilized in the presented site/utility design as applicable.

11.2 Preliminary Conformance Review (60%) Design Submittal. The Preliminary Conformance Review (60%) design submittal shall contain, as a minimum, the following.

11.2.1 Landscape, Planting and Turfing.

11.2.1.1 The landscape planting design narrative shall describe the analysis of existing site conditions, including an indication of existing plant materials that are to remain on the site. The statement of concept shall indicate specific site problems related to proposed development and the rationale for proposed plant locations. The narrative shall also include a list of suggested types and sizes of plant materials which are to be used, based upon the designated functional and visual criteria.

11.2.1.2 The drawings shall be prepared at a scale which corresponds with the site layout and grading plans and, likewise, shall include reference coordinates, north arrows, graphic scales and appropriate legends. An overall planting layout shall be developed and shall include enlarged detail plans of specific areas, as needed, to clarify requirements. The proposed planting layout shall indicate shade trees, evergreen trees, flowering trees, shrub masses, etc., according to designated functional and visual locations of planting. A legend which also indicates sizes of plants recommended and quantity for each of the above categories shall be included. The drawings and all subsequent plans shall indicate existing

plants, existing and proposed buildings, paved areas, signs, light standards, transformers, dumpster areas, storm drainage system, and other structures and utilities.

11.2.1.3 Landscape, Planting and Turfing. Final design drawing(s) shall include a complete schedule of plant materials which indicates their botanical and common names, plan symbols, quantities, sizes, condition furnished, and pertinent remarks. Scale of drawing shall be prepared at 1" = 30'. Drawing shall correspond with the site layout and grading plans and reference coordinates, north arrows, graphic scales and appropriate legends. An overall planting layout shall be developed and shall include enlarged detail plans of specific areas as needed, to clarify requirements. Final design drawings, indicating proposed plants by a (+) mark for the plant location and a circle which is scaled at approximately 2/3 the ultimate growth spread (diameter) of plants, shall also include a complete schedule of plant materials which indicates botanical and common names, plan symbols, quantities, sizes, condition furnished, and pertinent remarks. Final drawings shall also include the basic details for installation of tree, shrub, and ground cover planting, as well as any other applicable details for clarification of specific project requirements.
*5
11.2.1.4 Irrigation. Final irrigation drawings shall be included as covered by Section 01010 GENERAL DESIGN AND CONSTRUCTION REQUIREMENTS, paragraph 15, IRRIGATION SYSTEM.

11.2.2 Architectural.

11.2.2.1 Design narrative shall update the original architectural narrative provided with the awarded proposal as needed for design development. Changes from the original narrative and drawings shall be clearly stated and include background information and explanation for the change. In addition, the narrative shall include gutter and downspout sizing calculations. There shall also be a general statement for the rationale behind the major design decisions.

11.2.2.2 Architectural floor plans shall indicate dimensions, structural members, column lines, door numbers, room names, room numbers, floor slopes, floor drains, and detail references. Enlarged plans for toilets, stairs and other specialized areas shall be drawn to 1/4" scale and shall show any needed interior features. Rated walls shall be indicated.

11.2.2.3 Building elevations shall be updated for design development and shall show louvers, gutters and downspouts.

11.2.2.4 Building sections shall be provided showing coordination with structural system and room volumes.

11.2.2.5 Wall sections shall be provided showing typical exterior wall conditions including porches and other special conditions.

11.2.2.6 Roof plan shall be provided showing downspout locations and any architectural features.

11.2.2.7 Door schedule shall be provided indicating size, door and frame materials, door types (elevations), and door assembly fire ratings.

11.2.2.8 Finish schedule shall be provided indicating floor, wall and ceiling finish materials.

11.2.2.9 Fire Protection/Life Safety Plan and Analysis. Provide a preliminary plans and analysis indicating the fire protection and life safety features of the building.

11.2.3 Interior Design

11.2.3.1 Generic Furniture/Furnishings Plan. Submit generic furniture/furnishing plans for each floor showing the location and type of all furniture and furnishings. Indicate by schedule which items shall be furnished and/or installed by the Contractor and which shall be furnished and/or installed by the Government.

11.2.3.2 Signage. Provide interior signage plans and message schedule. Note any special features such as changeable components. Note exterior signage locations and types on drawings. All exterior signage shall be in accordance with the Pope AFB Architectural Compatibility Plan.
*5
11.2.3.3 Structural Interior Design. ~~Provide 60 percent submittal in accordance with applicable "Interior Design Presentation Format" publication.~~Not required at 60 percent submittal.

11.2.4 Structural Systems.

11.2.4.1 State the live loads to be used for design. Include roof and floor loads; wind loads, lateral earth pressure loads, seismic loads, etc., as applicable.

11.2.4.2 Describe the method of providing lateral stability for the structural system to meet seismic and wind load requirements. Include sufficient calculations to verify the adequacy of the method.

11.2.4.3 Furnish calculations for all principal roof, floor, and foundation members.

11.2.4.4 This submittal shall include drawings showing roof and floor framing plans as applicable. Principal members will be shown on the plans. A foundation plan shall also be furnished showing main footings and grade beams where applicable. Where beam, column, and footing schedules are used, show schedules and fill in sufficient items to indicate method to be used. Show typical bar bending diagram if applicable. Typical sections shall be furnished for roof, floor, and foundation conditions. Structural drawings for proposals and submittals shall be separate from architectural drawings.

11.2.4.5 Provide any computer analyses used. The software shall be widely accepted, commercially available programs and complete documentation of the input and output of the program must be provided.

11.2.4.6 Provide complete seismic analyses for all building structural components. Seismic calculations shall clearly demonstrate compliance with all requirements set forth in the Statement of Work.

11.2.5 Plumbing Systems.

11.2.5.1 List all references used in the design including Government design documents and industry standards.

11.2.5.2 Provide justification and brief description of the types of plumbing fixtures, piping materials and equipment proposed for use.

11.2.5.3 Prepare detail calculations for systems such as sizing of domestic hot water heater and piping and natural gas piping.

11.2.5.4 Indicate locations and general arrangement of plumbing fixtures and major equipment.

11.2.5.5 Include plan and isometric riser diagrams of all areas including hot water, cold water, waste and vent piping. Piping layouts and risers should also include natural gas and meter as required, and other specialty systems as applicable.

11.2.5.6 Include equipment and fixture connection schedules with descriptions, capacities, locations, connection sizes and other information as required.

11.2.6 Fire Protection/Suppression.

11.2.6.1 Preliminary (60%) Design Submittal Requirements.

11.2.6.1.1 Design Analysis. As a minimum, RFP shall require that submittal requirements be in accordance with the DMMC, Chapters A-4, 5, and 6 for preliminary (60%) design submittals. Project fire protection design shall be complete and detailed as required for critical projects per the DMMC, Chapters A-4 and A-6. Design analysis shall include analysis for fire protection/life safety, fire suppression systems and alarm and detection systems.

11.2.6.1.2 Drawings. As a minimum, RFP shall require that submittal requirements be in accordance with the DMMC, Chapters A-4, 5, and 6 for preliminary (60%) design submittals. Project fire protection design shall be complete and detailed as required for critical projects per the DMMC, Chapters A-4 and A-6. Drawings shall include fire protection/life safety plans, fire suppression system plans and alarm and detection system plans.

11.2.6.1.3 Specifications. As a minimum, RFP shall require that submittal requirements be in accordance with the DMMC, Chapters A-4, 5, and 6 for preliminary (60%) design submittals. Specifications submitted shall be “marked up” versions such that reviewer can visually see the revisions. The proposer’s optional items shall be limited to bracketed items only.

11.2.6.2 Final (100%) Design Submittal Requirements.

11.2.6.2.1 Design Analysis. As a minimum, RFP shall require that submittal requirements be in accordance with the DMMC, Chapters A-4, 5, and 6 for final (100%) design submittals. Project fire protection design shall be complete and detailed as required for critical projects per the DMMC, Chapters A-4 and A-6. Design analysis shall include analysis for fire protection/life safety, fire suppression systems and alarm and detection systems.

11.2.6.2.2 Drawings. As a minimum, RFP shall require that submittal requirements be in accordance with the DMMC, Chapters A-4, 5, and 6 for final (100%) design submittals. Project fire protection design shall be complete and detailed as required for critical projects per the DMMC, Chapters A-4 and A-6. Drawings shall include fire protection/life safety plans, fire suppression system plans and alarm and detection system plans.

11.2.6.2.3 Specifications. As a minimum, RFP shall require that submittal requirements be in accordance with the DMMC, Chapters A-4, 5, and 6 for final (100%) design submittals.

11.2.6.2.4 List all references used in the design including Government design documents and industry standards used to generate the fire protection analysis.

11.2.6.2.5 Classify each building in accordance with fire zone, building floor areas and height and number of stories. This information shall be contained in the fire protection analysis.

11.2.6.2.6 Discuss and provide description of required fire protection requirements including extinguishing equipment, detection equipment, alarm equipment [and water supply]. Alarm and detection equipment shall interface to requirements of electronic systems. This information shall be contained in the fire protection design analysis.

11.2.6.2.7 Prepare a plan for each floor of each building that presents a compendium of the total fire protection features being incorporated into the design. Provide the following types of information:

The location and rating of any fire-resistive construction such as occupancy separations, area separations, exterior walls, shaft enclosures, corridors, stair enclosures, exit passageways, etc.

The location and coverage of any fire detection systems.

The location and coverage of any fire suppression systems (sprinkler risers, standpipes, etc.).

The location of any other major fire protection equipment.

Indicate any hazardous areas and their classification.

11.2.6.2.8 Prepare a schedule describing the internal systems with the following information: fire hazard and occupancy classifications, building construction type, GPM/square foot sprinkler density, area of operation and other as required.

11.2.6.2.9 Hydraulic calculations based on water flow test shall be prepared for each sprinkler system to insure that flow and pressure requirements can be met with current water supply. Include copies of contractor water flow testing done to certify the available water source.

11.2.7 Electronic Systems. Electronic Systems responsibilities include the following:

Fire Detection and Alarm System
Fire Suppression System Control
Telephone System
Cable Television System
Special Grounding Systems
Cathodic Protection

11.2.7.1 The design analysis shall include all calculations required to support design decisions and estimates at this stage of design. The analysis shall include specific criteria furnished, conference minutes and cost analyses of all systems considered.

11.2.7.2 Design of the fire alarm and detection system shall include layout drawings for all devices and a riser diagram showing the control panel, annunciator panel, all zones, radio transmitter and interfaces to other systems (HVAC, sprinkler, etc.).

11.2.7.3 Specify all components of the Fire Suppression (FS) System in the FS section of the specifications. Provide a clear description of how the system will operate and interact with other systems such as the fire alarm system. Include a riser diagram on the drawings showing principal components and interconnections with other systems. Include FS system components on drawing legend. All components shown of floor plans shall be designated as FS system components (as opposed to Fire Alarm components). Show the location of FS control panels, HVAC control devices, sensors, and 120V power panel connections on the floor plans. Indicate zoning of areas by numbers (1, 2, 3) and detectors subzoned for cross zoning by letter designations (A and B). Differentiate between ceiling mounted and underfloor detectors with distinct symbols and indicate subzone of each.

11.2.7.4 Show location of telephone outlets (including pay phones) on the plans. Include legend and symbol definition to indicate height above finished floor. Show Telephone Conduit System Riser Diagram. Size conduit on Riser Diagram. Do not show conduit runs between backboard and outlets on the floor plans. Underground telephone distribution conduit shall be shown on either the electrical or electronic site plan.

11.2.7.5 Grounding System. The specifications and drawings shall completely reflect all of the design requirements. The specifications shall require field tests (in the construction phase), witnessed by the Contracting Officer, to determine the effectiveness of the grounding system. The design shall include drawings showing existing construction. Verification of the validity of any existing drawings and/or any other data furnished by the Government shall be the responsibility of the engineering services firm.

11.2.7.6 Provide a statement describing the extent of any exterior work such as telephone lines, cable television (TV) distribution cables, duct banks, etc., outside of 5 feet from the building line.

11.2.7.7 Provide the name of the licensed corrosion engineer or NACE specialist. Provide the following for cathodic protection systems:

Clearly define areas of structures or components in soil or water to be protected.
Type system recommended, comparison of systems, cost estimates showing all equipment alternatives.

Calculations on all systems that are considered showing all information and descriptions.

11.2.8 Design of Cathodic Protection. The design shall clearly provide a thorough and comprehensive specification and drawing. The design plans and specifications shall show extent of the facilities to be protected, location and type of anodes, location of test points, details for sectionalizing an underground piping system. This design shall be complete enough to purchase equipment and build without design changes to meet criteria of protection.

11.2.8.1 Exterior work to be shown on electrical site plan.

Existing and new communications service lines, both overhead and underground, shall be properly identified.

Show removals and relocations, if any.

11.2.8.2 Provide a descriptive narrative of all electronic systems that are required for project. Define any hazardous areas (as defined in the National Electric Code) and indicate the type of equipment proposed for use in such areas. Show the location of all electronic system panels, etc., on the floor plans. Show the proposed riser diagrams for all systems. Sizes of all conduit, wires, cables, panels, etc. Provide a complete symbol legend for all devices or equipment shown on the plans. For work requiring removals or demolition, the designer shall show by use of drawings or narrative, how demolition work is to be done.

11.2.9 Electrical and Mechanical Systems. Provide all information as required on the 100% design submittal developed to 60% completion.

11.2.10 Specifications. Draft of specifications for housing units, including index and trade sections.

11.3 100% DESIGN SUBMITTAL. The 100% design submittal shall contain, as a minimum, the following items for all submittals.

11.3.1 General. A complete set of construction documents plans and specifications at the same level of detail as if the project were to be bid including a complete list of equipment, fixtures and materials to be used. The final drawings are an extension of the reviewed 60% drawings and are to include the 60% comments and responses. All details shall be shown on the drawings.

11.3.2 The design analysis is an extension of the reviewed 60% design analysis and supports and verifies that the design complies with the requirements of the project.

11.3.3 Submit marked up specifications. The specifications shall be coordinated with the drawings and describe in detail all items shown on the drawings.

11.3.4 Architectural.

11.3.4.1 Final drawings shall show all plans, elevations, sections, details, schedules and notes, cross-referenced, to present a complete description of the construction required. All architectural drawings shall be coordinated with the other engineering disciplines and with the specifications. Ensure that the plans are in compliance with the applicable codes. It will be the Contractor's responsibility to implement the comments generated from any design review and to verify the consistency between plans and specifications.

11.3.4.2 Floor plans shall indicate brick expansion joint and CMU control joint locations. Fire extinguisher cabinets and brackets shall be shown on floor plan. Floor tile expansion joints shall be coordinated with slab joints and shown on floor plan or floor pattern plan if used.

11.3.4.3 Enlarged plans, interior elevations and details with dimensions shall be provided as needed to demonstrate compliance with ADAAG and UFAS.

11.3.4.4 Reflected ceiling plan shall show light fixtures and mechanical supply and return air units.

11.3.4.5 Roof plan shall show all roof penetrations and roof-mounted items. Roof plan shall indicate gutter expansion joint and downspout locations. Roof details shall be at a scale large enough to clearly show flashing laps, which shall be dimensioned (3”=1’-0” scale is recommended). All roof transition conditions shall be detailed.

11.3.4.7 Fire Protection/Life Safety Plan and Analysis. Provide updated plans and analysis indicating the fire protection and life safety features of the building.

11.3.4.8 Specifications for door hardware shall be prepared using BHMA designations.

11.3.5 Interior Design.

11.3.5.1 Implement Concept and Preliminary review comments.
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11.3.5.2 Structural Interior Design~~. Provide 100 percent submittal in accordance with applicable "Interior Design Presentation Format" publication.~~Not required at 100% design submittal.

11.3.6 Structural Design.

11.3.6.1 Furnish complete checked calculations for all structural members. Incorporate any changes required by comments on 60% Design Submittal.

11.3.6.2 Prior to this submittal, structural drawings shall be coordinated with all other design disciplines.

11.3.6.3 The final structural drawings shall contain the following information as a set of general notes:

The allowable soil bearing value.
The design stresses of structural materials used.
The design live loads used in the design of various portions of the structures.
The design wind speed.
The seismic zone and the "K", "C", "I" and "Z" values used in design.

11.3.6.4 All structural drawings and calculations shall be checked and stamped by the designer of record (a registered Professional Engineer).

11.3.7 Fire Suppression System. Provide a file of the input data used in the computer program to design the fire suppression system as well as the output data.

11.3.8 Specific Mechanical and Plumbing Requirements.

11.3.8.1 Required Plans, Diagrams, Schedules and Details on Unit Mechanical Drawings.

11.3.8.1.1 Mechanical Floor Plan. The floor plans shall show all principle architectural features of the building which will affect the mechanical design. The floor plans shall also show the following:

Room designations.
Mechanical legend and applicable notes.

Location of all ductwork or piping (double line ductwork required).
Location and capacity of all terminal units (i.e., registers, diffusers, grilles, hydronic baseboards). Exhaust fan and range hood location.
Size of all ductwork and piping.
Thermostat location.
Location of heating/cooling plant (i.e., boiler, chiller, cooling tower, etc).
Location of all air handling equipment.
Return air paths (i.e., undercut doors, transfer grilles).
Flue piping size and location.
Piping diagram for forced hot water system (if used).
Fuel supply and return piping

11.3.8.1.2 Equipment Schedule. Complete equipment Schedules shall be provided. Schedule shall also include:

Capacity
Electrical characteristics
Efficiency (if applicable)
Manufacturer's name
Optional features to be provided
Physical size

11.3.8.1.3 Details. Construction details, sections, elevations, etc., shall be provided where required for clarification of methods and materials of design. Roof and exterior wall penetrations shall be detailed on the drawings.

11.3.8.2 Plumbing Floor Plan. The floor plan shall show all principal architectural features of the building which will affect the plumbing design. Separate plumbing plans will not be required if sufficient information can be shown on the mechanical plans to meet the requirements shown above. The floor plan shall also show the following:

Room designations.
Fixture Schedule.
Location of utility entrances.
Waste and water pipe location and size.
Fixture designations.

11.3.8.3 Design Analysis. Complete design calculations for mechanical systems. Include computations for sizing PM&E equipment, air duct design, and U-factors for ceilings, roofs and exterior walls and floors. Contractor shall employ commercially available energy analysis techniques to determine the energy performance of all passive systems and features. Use of hourly energy load computer simulation (e.g., TRNSYS, DOE 2.1 Blast, etc.) is required. These calculations can be used to size the mechanical systems. Based on the results of calculations, provide a complete list of the materials and equipment proposed for heating and plumbing, with the manufacturer's published cataloged product installation specifications and roughing-in data. The heating and cooling equipment data shall include the manufacturer's wiring diagrams, installation specifications, ARI certification, and the standard warranty for the equipment.

11.3.9 Specific Electrical Requirements:

11.3.9.1 Required Plans, Diagrams, Schedules, and Details on Unit Electrical Drawings.

11.3.9.1.1 Electrical Floor Plan. The floor plans shall show all principle architectural features of the building which will affect the electrical design. The floor plan shall also show the following:

Room designations.

Electrical legend and applicable notes.
Lighting fixtures, properly identified.
Location of smoke and CO detectors.
Location of telephone and cable TV outlets.
Switches/sensors for control of lighting.
Receptacles.
Location and designation of panelboards. Plans should clearly indicate type of mounting required (flush or surface) and be reflected accordingly in specifications. Service entrance (conduit and main disconnect).
Location, designation and rating of motors and/or equipment which requires electrical service. Show method of termination and/or connection to motors and/or equipment. Show necessary junction boxes, disconnects, controllers (approximate only), conduit stubs, and receptacles required to serve the motor and/or equipment.

11.3.9.1.2 Building Riser Diagram (From Pad-Mounted Transformer To Unit Load Center Panelboard). Indicate the types and sizes of electrical equipment and wiring. Include grounding and metering requirements.

11.3.9.1.3 Load Center Panelboard Schedule(s). Schedule shall indicate the following information:
Panelboard Characteristics (Panel Designation, Voltage, Phase, Wires, Main Breaker Rating and Mounting.
Branch Circuit Designations.
Load Designations.
Circuit Breaker Characteristics. (Number of Poles, Trip Rating, AIC Rating)
Branch Circuit Connected Loads (AMPS).
Special Features.

11.3.9.1.4 Lighting Fixture Schedule. (Schedule shall indicate the following information:)

Fixture Designation.
General Fixture Description.
Number and Type of Lamp(s).
Type of Ballast.
Type of Mounting.
Special Features.

11.3.9.1.5 Details. Construction details, sections, elevations, etc., shall be provided where required for clarification of methods and materials of design.

11.3.9.2 Required Electrical Design Analysis. Design analysis and calculations for the electrical systems shall be prepared by a licensed professional engineer, and shall be stamped as such. The design analysis shall be separately bound, in one or more volumes. Show functional and engineering criteria, design information, and calculations applicable to the project. The analysis shall be organized in a format appropriate for review, approval, and record purposes. The design calculations shall indicate methods and references identified, and shall explain assumptions and conclusions.

11.3.9.2.1 The design analysis shall include a Field Trip Report demonstrating coordination with the Pope AFB Information Technology Business Center (ITBC) and the Pope 43d Civil Engineer Squadron. Instructions received shall be included.

11.3.9.2.2 The design analysis shall include all requirements included in chapter A-5 of the Savannah District Design Manual for Military Construction.

11.3.9.2.3 All interior and exterior lighting calculations shall be computer generated and shall be based on the point-by-point method. All program inputs shall be included (e.g., lamp lumens, lumen maintenance factors and ballast factors).

11.3.9.2.4 A fault analysis and protective coordination study shall be provided for the facilities and shall extend to the supply substation. All assumptions shall be clearly stated.

11.3.10 Specifications: Provide final specifications. The Contractor shall make final identification of all materials and finishes at this stage.

11.4 Design Complete Submittal (Corrected Final).

11.4.1 Design Drawings. Drawings shall be 100% complete, signed and sealed by the designer of record. All previous review comments shall be incorporated.

11.4.2 Design Analysis. Complete design analysis for all design disciplines. The final Fire Protection and Life Safety Analysis shall be included in the Design Analysis.

11.4.3 Comment Response Package. Complete package showing all comments from all previous reviews and the respective response and disposition.

11.4.4 This submittal shall include all drawings and design information from the 100% site/utility submittal to form a complete design package.
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11.4.5 Structural Interior Design. Provide 100 percent submittal in accordance with applicable “Interior Design Presentation Format” publications.

12. DESIGN RELATED PRODUCTS

12.1 Architectural Renderings. Contractor shall provide the original and three copies (original and one copy to the Base, one copy to HQ AMC/CECE, one copy to COE) of each ground level perspective artist's renderings of completed typical facilities with walks, parking, and landscaping. Renderings shall be no smaller than 14" x 18" or larger than 28" x 36", multi-colored, and shall be suitably titled, matted, and framed and mailed to appropriate offices. AE will propose angle of view and AMC/CECE will approve.

12.2 DD Form 1354. Three sets of DD Form 1354, Transfer and Acceptance of Military Real Property shall be prepared in accordance with DA Pamphlet 415-28 available at http://www.usapa.army.mil/gils/ and submitted to the Contracting Officer. The DD Form 1354 will require input from both the design agent and the Contractor. The form must be completed in English units.

12.3 Submittal Register, ENG FORM 4288. The Contractor shall complete and submit three (03) copies of a "preliminary" Eng Form 4288, Submittal Register to Contracting Officer. The "preliminary" Eng Form 4288, Submittal Register shall have the column "Submittal Identification", "Specification Paragraph Number", "Description of Submittal" "Type of Submittal", and "Remarks" completed; the Contractor shall identify whether the submittal is for "Government Approval" or for "Government Information" under the column "Remarks."

12.4 Reproduction. Upon Government approval of 100% design documents, the original will be returned to the Contractor for reproduction purposes. The Contractor will be responsible for his own reproduction as well as reproduction for Government use. The Government will require twice the number of copies of the plans and specifications as were required for the review stages, no color boards will be required. The originals will be retained by the Contractor for recording of as-built conditions. Upon completion of the project, the original design documents corrected to reflect as-built conditions will be supplied to the Government in both hard copy and electronic format, AutoCAD and MicroStation format.

13. PAYMENT DURING DESIGN

Payments, as authorized by the Authorized Representative Contracting Officer (COR), will be made monthly for the amount and value of the work and services performed by the Contractor. This estimate

will be verified by the Contracting Officer utilizing the progress charts or the CONTRACTOR-PREPARED NETWORK ANALYSIS SYSTEM submitted by the Contractor and independent analyses of progress. See contract clause entitled PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS for additional information.

*2 UFGS-01312A (August 2002)

SECTION 01312A

QUALITY CONTROL SYSTEM (QCS)
08/01

1.1 GENERAL

The Government will use the Resident Management System for Windows (RMS) to assist in its monitoring and administration of this contract. The Contractor shall use the Government-furnished Construction Contractor Module of RMS, referred to as QCS, to record, maintain, and submit various information throughout the contract period. This joint Government-Contractor use of RMS and QCS will facilitate electronic exchange of information and overall management of the contract. QCS provides the means for the Contractor to input, track, and electronically share information with the Government in the following areas:

Administration
Finances
Quality Control
Submittal Monitoring
Scheduling
Import/Export of Data

1.1.1 Correspondence and Electronic Communications

For ease and speed of communications, both Government and Contractor will, to the maximum extent feasible, exchange correspondence and other documents in electronic format. Correspondence, pay requests and other documents comprising the official contract record shall also be provided in paper format, with signatures and dates where necessary. Paper documents will govern, in the event of discrepancy with the electronic version.

1.1.2 Other Factors

Particular attention is directed to Contract Clause, "Schedules for Construction Contracts", Contract Clause, "Payments", Contractor Prepared Network Analysis System in Attachment 1 to Section 00800, Section 01330, SUBMITTAL PROCEDURES, and Section 01451A, CONTRACTOR QUALITY CONTROL, which have a direct relationship to the reporting to be accomplished through QCS. Also, there is no separate payment for establishing and maintaining the QCS database; all costs associated therewith shall be included in the contract pricing for the work.

1.2 QCS SOFTWARE

QCS is a Windows-based program that can be run on a stand-alone personal computer or on a network. The Government will make available the QCS software to the Contractor after award of the construction contract. Prior to the Pre-Construction Conference, the Contractor shall be responsible to download, install and use the latest version of the QCS software from the Government's RMS Internet Website. Upon specific justification and request by the Contractor, the Government can provide QCS on 3-1/2 inch high-density diskettes or CD-ROM. Any program updates of QCS will be made available to the Contractor via the Government RMS Website as they become available.

1.3 SYSTEM REQUIREMENTS

The following listed hardware and software is the minimum system configuration that the Contractor shall have to run QCS:

Hardware

IBM-compatible PC with 500 MHz Pentium or higher processor

128+ MB RAM for workstation / 256+ MB RAM for server

1 GB hard drive disk space for sole use by the QCS system

3 1/2 inch high-density floppy drive

Compact disk (CD) Reader, 8x speed or higher

SVGA or higher resolution monitor (1024 x 768, 256 colors)

Mouse or other pointing devise

Windows compatible printer (Laser printer must have 4+ MB of RAM)

Connection to the Internet, minimum 56 BPS

Software

MS Windows 98, ME, NT, or 2000

Word Processing software compatible with MS Word 97 or newer

Latest version of : Netscape Navigator, Microsoft Internet Explorer, or other browser that supports HTML 4.0 or higher

Electronic mail (E-mail), MAPI compatible

Virus protection software that is regularly upgraded with all issued manufacturer's updates

1.4 RELATED INFORMATION

1.4.1 QCS User Guide

After contract award, the Contractor shall download instructions for the installation and use of QCS from the Government RMS Internet Website; the Contractor can obtain the current address from the Government. In case of justifiable difficulties, the Government will provide the Contractor with a CD-ROM containing these instructions.

1.4.2 Contractor Quality Control(CQC) Training

The use of QCS will be discussed with the Contractor's QC System Manager during the mandatory CQC Training class.

1.5 CONTRACT DATABASE

Prior to the pre-construction conference, the Government shall provide the Contractor with basic contract award data to use for QCS. The Government will provide data updates to the Contractor as needed, generally by files attached to E-mail. These updates will generally consist of submittal reviews, correspondence status, QA comments, and other administrative and QA data.

1.6 DATABASE MAINTENANCE

The Contractor shall establish, maintain, and update data for the contract in the QCS database throughout the duration of the contract. The Contractor shall establish and maintain the QCS database at the Contractor's site office. Data updates to the Government shall be submitted by E-mail with file attachments, e.g., daily reports, schedule updates, payment requests. If permitted by the Contracting Officer, a data diskette or CD-ROM may be used instead of E-mail (see Paragraph DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM). The QCS database typically shall include current data on the following items:

1.6.1 Administration

1.6.1.1 Contractor Information

The database shall contain the Contractor's name, address, telephone numbers, management staff, and other required items. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver Contractor administrative data in electronic format via E-mail.

1.6.1.2 Subcontractor Information

The database shall contain the name, trade, address, phone numbers, and other required information for all subcontractors. A subcontractor must be listed separately for each trade to be performed. Each subcontractor/trade shall be assigned a unique Responsibility Code, provided in QCS. Within 14 calendar days of receipt of QCS software from the Government, the Contractor shall deliver subcontractor administrative data in electronic format via E-mail.

1.6.1.3 Correspondence

All Contractor correspondence to the Government shall be identified with a serial number. Correspondence initiated by the Contractor's site office shall be prefixed with "S". Letters initiated by the Contractor's home (main) office shall be prefixed with "H". Letters shall be numbered starting from 0001. (e.g., H-0001 or S-0001). The Government's letters to the Contractor will be prefixed with "C".

1.6.1.5 Equipment

The Contractor's QCS database shall contain a current list of equipment planned for use or being used on the jobsite, including the most recent and planned equipment inspection dates.

1.6.1.7 Management Reporting

QCS includes a number of reports that Contractor management can use to track the status of the project. The value of these reports is reflective of the

quality of the data input, and is maintained in the various sections of QCS. Among these reports are: Progress Payment Request worksheet, QA/QC comments, Submittal Register Status, Three-Phase Inspection checklists.

1.6.2 Finances

1.6.2.1 Pay Activity Data

The QCS database shall include a list of pay activities that the Contractor shall develop in conjunction with the construction schedule. The sum of all pay activities shall be equal to the total contract amount, including modifications. Pay activities shall be grouped by Contract Line Item Number (CLIN), and the sum of the activities shall equal the amount of each CLIN. The total of all CLINs equals the Contract Amount.

1.6.2.2 Payment Requests

All progress payment requests shall be prepared using QCS. The Contractor shall complete the payment request worksheet and include it with the payment request. The work completed under the contract, measured as percent or as specific quantities, shall be updated at least monthly. After the update, the Contractor shall generate a payment request report using QCS. The Contractor shall submit the payment requests with supporting data by E-mail with file attachment(s). If permitted by the Contracting Officer, a data diskette may be used instead of E-mail. A signed paper copy of the approved payment request is also required, which shall govern in the event of discrepancy with the electronic version.

1.6.3 Quality Control (QC)

QCS provides a means to track implementation of the 3-phase QC Control System, prepare daily reports, identify and track deficiencies, document progress of work, and support other contractor QC requirements. The Contractor shall maintain this data on a daily basis. Entered data will automatically output to the QCS generated daily report. The Contractor shall provide the Government a Contractor Quality Control (CQC) Plan within the time required in Section 01451A, CONTRACTOR QUALITY CONTROL. Within seven calendar days of Government acceptance, the Contractor shall submit a data diskette or CD-ROM reflecting the information contained in the accepted CQC Plan: schedule, pay activities, features of work, submittal register, QC requirements, and equipment list.

1.6.3.1 Daily Contractor Quality Control (CQC) Reports.

QCS includes the means to produce the Daily CQC Report. The Contractor may use other formats to record basic QC data. However, the Daily CQC Report generated by QCS shall be the Contractor's official report. Data from any supplemental reports by the Contractor shall be summarized and consolidated onto the QCS-generated Daily CQC Report. Daily CQC Reports shall be submitted as required by Section 01451A, CONTRACTOR QUALITY CONTROL. Reports shall be submitted electronically to the Government using E-mail or diskette within 24 hours after the date covered by the report. Use of either mode of submittal shall be coordinated with the Government representative. The Contractor shall also provide the Government a signed, printed copy of the daily CQC report.

1.6.3.2 Deficiency Tracking.

The Contractor shall use QCS to track deficiencies. Deficiencies identified by the Contractor will be numerically tracked using QC punch list items. The Contractor shall maintain a current log of its QC punch list items in the QCS database. The Government will log the deficiencies it has identified using its QA punch list items. The Government's QA punch list items will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of both QC and QA punch list items.

1.6.3.3 Three-Phase Control Meetings

The Contractor shall maintain scheduled and actual dates and times of preparatory and initial control meetings in QCS.

1.6.3.4 Accident/Safety Tracking.

The Government will issue safety comments, directions, or guidance whenever safety deficiencies are observed. The Government's safety comments will be included in its export file to the Contractor. The Contractor shall regularly update the correction status of the safety comments. In addition, the Contractor shall utilize QCS to advise the Government of any accidents occurring on the jobsite. This brief supplemental entry is not to be considered as a substitute for completion of mandatory reports, e.g., ENG Form 3394 and OSHA Form 200.

1.6.3.5 Features of Work

The Contractor shall include a complete list of the features of work in the QCS database. A feature of work may be associated with multiple pay activities. However, each pay activity (see subparagraph "Pay Activity Data" of paragraph "Finances") will only be linked to a single feature of work.

1.6.3.6 QC Requirements

The Contractor shall develop and maintain a complete list of QC testing, transferred and installed property, and user training requirements in QCS. The Contractor shall update all data on these QC requirements as work progresses, and shall promptly provide this information to the Government via QCS.

1.6.4 Submittal Management

The Government will provide the initial submittal register, ENG Form 4288, SUBMITTAL REGISTER, in electronic format. Thereafter, the Contractor shall maintain a complete list of all submittals, including completion of all data columns. Dates on which submittals are received and returned by the Government will be included in its export file to the Contractor. The Contractor shall use QCS to track and transmit all submittals. ENG Form 4025, submittal transmittal form, and the submittal register update, ENG Form 4288, shall be produced using QCS. RMS will be used to update, store and exchange submittal registers and transmittals, but will not be used for storage of actual submittals.

1.6.5 Schedule

The Contractor shall develop a construction schedule consisting of pay activities, in accordance with Contract Clause "Schedules for Construction Contracts", or Contractor Prepared Network Analysis System in Attachment 1 to Section 00800, as applicable. This schedule shall be input and maintained in the QCS database either manually or by using the Standard Data Exchange Format (SDEF) (see Section 01320A PROJECT SCHEDULE). The updated schedule data shall be included with each pay request submitted by the Contractor.

1.6.6 Import/Export of Data

QCS includes the ability to export Contractor data to the Government and to import submittal register and other Government-provided data, and schedule data using SDEF.

1.7 IMPLEMENTATION

Contractor use of QCS as described in the preceding paragraphs is mandatory. The Contractor shall ensure that sufficient resources are available to maintain its QCS database, and to provide the Government with regular database updates. QCS shall be an integral part of the Contractor's management of quality control.

1.8 DATA SUBMISSION VIA COMPUTER DISKETTE OR CD-ROM

The Government-preferred method for Contractor's submission of updates, payment requests, correspondence and other data is by E-mail with file attachment(s). For locations where this is not feasible, the Contracting Officer may permit use of computer diskettes or CD-ROM for data transfer. Data on the disks or CDs shall be exported using the QCS built-in export function. If used, diskettes and CD-ROMs will be submitted in accordance with the following:

1.8.1 File Medium

The Contractor shall submit required data on 3-1/2 inch double-sided high-density diskettes formatted to hold 1.44 MB of data, capable of running under Microsoft Windows 95 or newer. Alternatively, CD-ROMs may be used. They shall conform to industry standards used in the United States. All data shall be provided in English.

1.8.2 Disk or CD-ROM Labels

The Contractor shall affix a permanent exterior label to each diskette and CD-ROM submitted. The label shall indicate in English, the QCS file name, full contract number, contract name, project location, data date, name and telephone number of person responsible for the data.

1.8.3 File Names

The Government will provide the file names to be used by the Contractor with the QCS software.

1.9 MONTHLY COORDINATION MEETING

The Contractor shall update the QCS database each workday. At least monthly, the Contractor shall generate and submit an export file to the Government with schedule update and progress payment request. As required in Contract Clause "Payments", at least one week prior to submittal, the Contractor shall meet with the Government representative to review the planned progress payment data submission for errors and omissions. The Contractor shall make all required corrections prior to Government acceptance of the export file and progress payment request. Payment requests accompanied by incomplete or incorrect data submittals will be returned. The Government will not process progress payments until an acceptable QCS export file is received.

1.10 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the requirements of this specification. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for the purpose of notification.

-- End of Section --

SECTION 01330/S
SUBMITTAL PROCEDURES
(DESIGN/BUILD)
10/2000

PART 1 GENERAL

1.1 SUBMITTAL IDENTIFICATION

Submittals required are identified by SD numbers and titles as follows:

SD-01 Preconstruction Submittals

SD-02 Shop Drawings

SD-03 Product Data

SD-04 Samples

SD-05 Design Data

SD-06 Test Reports

SD-07 Certificates

SD-08 Manufacturer's Instructions

SD-09 Manufacturer's Field Reports

SD-10 Operation and Maintenance Data

SD-11 Closeout Submittals

1.2 SUBMITTAL CLASSIFICATION

Submittals are classified as follows:

1.2.1 Designer of Record Approved.

Designer of Record approval is required for extensions of design, critical materials, any deviations from the solicitation, the accepted proposal, or the completed design, equipment whose compatibility with the entire system must be checked, and other items as designated by the Contracting Officer's Representative. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction", they are considered to be "shop drawings". The Contractor shall provide the Government the number of copies designated hereinafter of all Designer of Record approved submittals. The Government may review any or all Designer of Record approved submittals for conformance to the Solicitation and Accepted Proposal. The Government will review all submittals designated as deviating from the Solicitation or Accepted Proposal, as described below.

1.2.2 Government Approved Construction Submittals.

Administrative Contracting Officer approval is required for any deviations from the Solicitation or Accepted Proposal and other items as designated by the Contracting Officer' Representative. Within the terms of the Contract Clause entitled "Specifications and Drawings for Construction", they are considered to be "shop drawings".

1.2.3 Government Reviewed Extension of Design.

Government review is required for extension of design construction submittals, used to define contract conformity, and for deviation from the completed design. Review will be only for conformance with the contract requirements. Included are only those construction submittals for which the Designer of Record design documents do not include enough detail to ascertain contract compliance. Government review is not required for extensions of design such as structural steel or reinforcement shop drawings.

1.2.4 Information Only.

All submittals not requiring Designer of Record or Government approval will be for information only. They are not considered to be "shop drawings" within the terms of the Contract Clause referred to above.

1.2.5 GOVERNMENT REVIEWED OR "APPROVED" SUBMITTALS

The Contracting Officer's Representative conformance review or approval of submittals shall not be construed as a complete check, but will indicate only that the design, general method of construction, materials, detailing and other information appear to meet the Solicitation and Accepted Proposal. Government Review or approval will not relieve the Contractor of the responsibility for any error which may exist, as the Contractor, under the Design and CQC requirements of this contract, is responsible for design, dimensions, all design extensions, such as the design of adequate connections and details, etc., and the satisfactory construction of all work. After submittals have been reviewed for conformance or approved, as applicable, by the Contracting Officer' Representative, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.3 DISAPPROVED SUBMITTALS

The Contractor shall make all corrections required by the Contracting Officer's Representative, obtain the Designer of Record's approval, when applicable, and promptly furnish a corrected submittal in the form an number of copies specified for the initial submittal. Any "information only" submittal found to contain errors or unapproved deviations from the Solicitation or Accepted Proposal shall be resubmitted as one requiring "approval" action, requiring both Design of Record and Government approval. If the Contractor considers any correction indicated by the Government on the submittals to constitute a change to the contract, it shall promptly provide a notice in accordance with the Contract Clause "Changes" to the Contracting Officer's Representative.

1.4 WITHHOLDING OF PAYMENT

No payment for materials incorporated in the work will be made if all required Designer of Record or required Government approvals have not been obtained. No payment will be made for any materials incorporated into the work for any conformance review submittals or information only submittals found to contain errors or deviations from the Solicitation or Accepted Proposal.

PART 2 PRODUCTS (Not used)

PART 3 EXECUTION

3.1 GENERAL

The Contractor shall make submittals as required by the specifications. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Units of weights and measures used on all submittals shall be the same as those used in the contract drawings. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) System Manager and each item shall be stamped, signed, and dated by the CQC System Manager indicating action taken. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby. Samples remaining upon completion of the work shall be picked up and disposed of in accordance with manufacturer's Material Safety Data Sheets (MSDS) and in compliance with existing laws and regulations.

3.1.1 Design Submittals

The Contractor shall provide design submittals in accordance with Section 01012 entitled “DESIGN AFTER AWARD”.

3.2 SUBMITTAL REGISTER

The Contractor's Designer(s) of Record shall develop a complete list of submittals during design. The Designer of Record shall identify required submittals in the specifications. Use the list to prepare ENG Form 4288 Submittal Register or a computerized equivalent. The list may not be all inclusive and additional submittals may be required by other parts of the contract. The Contractor is required to complete ENG Form 4288 (including columns "a" through "r") and submit to the Contracting Officer for approval within 30 calendar days after Notice to Proceed. The approved submittal register will serve as a scheduling document for submittals and will be used to control submittal actions throughout the contract period. The submit dates and need dates used in the submittal register shall be coordinated with dates in the Contractor prepared progress schedule. Updates to the submittal register showing the Contractor action codes and actual dates with Government action codes and actual dates shall be submitted monthly or until all submittals have been

satisfactorily completed. When the progress schedule is revised, the submittal register shall also be revised and both submitted for approval. The Contractor shall maintain a submittal register for the project in accordance with Section 01312 RESIDENT MANAGEMENT SYSTEM (RMS).

3.3 SCHEDULING

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 30 calendar days exclusive of mailing time) shall be allowed and shown on the register for review and approval. No delay damages or time extensions will be allowed for time lost in late submittals. An additional 10 calendar days shall be allowed and shown on the register for review and approval of submittals for food service equipment and refrigeration and HVAC control systems.

3.4 TRANSMITTAL FORM (ENG FORM 4025)

The sample transmittal form (ENG Form 4025) attached to this section shall be used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. These forms are included in the RMS-QC software that the Contractor is required to use for this contract. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care shall be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

3.5 SUBMITTAL PROCEDURE

Submittals shall be made as follows:

3.5.1 Procedures

The Contractor shall be responsible for the scheduling and control of all submittals. The Contractor is responsible for confirming that the submittal register includes all submittals required by the contract documents.

In addition to those items listed on ENG Form 4288, the Contractor will furnish submittals for any deviation from the plans or specifications. The scheduled need dates must be recorded on the document for each item for control purposes and critical items must be tied to the Contractor's approved schedule where applicable.

The Contractor will submit to the Contracting Officer for approval a minimum of five copies of all G/RE (Resident/Area Office Review), G/ED (Engineering Division Review) or G/AE (Architect-Engineer Review) level submittals. Three copies of all FIO level submittals will be provided. The number of copies of submittals specified in this portion of the contract shall be complied with in lieu of four copies as specified by FAR 52.236-21.

For those contracts requiring Network Analysis System (NAS), the Contractor will schedule on the NAS critical items of equipment

submittals and procurement activities which will, or have the potential to, significantly impact project completion. The inclusion or exclusion of critical items shall be subject to the approval of the Contracting Officer. Where ENG Form 4025 must be submitted prior to approval of the Construction Progress Schedule, the Contractor shall submit an initial annotated ENG Form 4288 upon which dates for submittal, approval and delivery of procurement items shall be included for the first 60 days of the work. Upon approval of the Construction Progress Schedule, or no later than 60 days after Notice to Proceed, the Contractor shall submit final annotated copies of ENG Form 4288. Dates shall be coordinated with the approved Construction Progress Schedule to logically interface with the sequence of construction. Critical item numbers will be shown on the listing if NAS is required.

Furnishing the schedule shall not be interpreted as relieving the Contractor of his obligation to comply with all the specification requirements for the items on the schedule. Contractor's Quality Control representative shall review the listing at least every 30 days and take appropriate action to maintain an effective system. The Contractor shall furnish a list each 30 days of all submittals on which either Government's or Contractor's action is past due. He shall also furnish revised due dates in those cases when the original submittal schedule is no longer realistic. This monthly list of delayed items shall also be annotated by the Contractor to show what corrective action he is taking with regard to slippages in submittal schedule which are attributable to actions by him, his subcontractors, or suppliers.

The Contractor shall provide a complete updated submittal register indicating the current status of all submittals when requested by the Contracting Officer in order to assure himself the schedule is being maintained.

The Contractor shall certify that each submittal is correct and in strict conformance with the contract drawings and specifications. All submittals not subject to the approval of the Contracting Officer will be submitted for information purposes only.

No Corps of Engineers action will be required prior to incorporating these items into the work, but the submittal shall be furnished to the Area/Resident Engineer not less than 2 weeks prior to procurement of Contractor certified material, equipment, etc.

These Contractor approved submittals will be used to verify that material received and used in the job is the same as that described and approved and will be used as record copies. All samples of materials submitted as required by these specifications shall be properly identified and labeled for ready identification, and upon being certified by the Contractor and reviewed by the Contracting Officer, shall be stored at the site of the work for job site use until all work has been completed and accepted by the Contracting Officer. Delegation of this approval authority to Contractor Quality Control does not relieve the Contractor from the obligation to conform to any contract requirement and will not prevent the Contracting Officer from requiring removal and replacement of construction not in contract conformance; nor does it relieve the Contractor from the requirement to furnish "samples" for testing by the Government Laboratory or check testing by the Government in those instances where the technical specifications so prescribe.

Contractor certified drawings will be subject to quality assurance review by the Government at any time during the duration of the contract. No adjustment for time or money will be allowed for corrections required as a result of noncompliance with plans and specifications.

Submittals Requiring Government Approval (G/ED Level, G/RE Level or G/AE level). Where the review authority is designated to the Government, the Contractor is required to sign the certification on ENG Form 4025 in the box beside the remarks block in Section I. The Government will code the items in block h and sign the approval action block in Section II as the approving authority.

Operating and Maintenance Instructions. Six complete sets of instructions containing the manufacturer's operating and maintenance instructions for each piece of equipment shall be furnished. Each set shall be permanently bound and shall have a hard cover. One complete set shall be furnished at the time test procedures are submitted. Remaining sets shall be furnished before the contract is completed. The following identification shall be inscribed on the covers: The words "OPERATING AND MAINTENANCE INSTRUCTIONS," name and location of the facility, name of the Contractor, and contract number. Fly sheets shall be placed before instructions covering each subject. Instruction sheets shall be approximately 8-1/2 by 11 inches, with large sheets of drawings folded in. Instructions shall include but are not limited to:

(1) System layout showing piping, valves and controls;

(2) Approved wiring and control diagrams;

(3) A control sequence describing startup, operation and shutdown;

(4) Operating and maintenance instructions for each piece of equipment, including lubrication instructions and troubleshooting guide; and

(5) Manufacturer's bulletins, cuts and descriptive data; parts lists and recommended parts.

The Government will further discuss and detail the required submittal procedures at the Pre-Construction Conference.

3.5.2 Deviations

For submittals which include proposed deviations requested by the Contractor, the column "variation" of ENG Form 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. As stated above, the Contractor’s Designer of Record approval is required for any proposed deviations. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

3.6 CONTROL OF SUBMITTALS

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

3.7 GOVERNMENT CONFORMANCE REVIEW AND APPROVED SUBMITTALS

Upon completion of review of submittals requiring Government approval, the submittals will be identified as having received approval by being so stamped and dated. Four copies of the submittal will be retained by the Contracting Officer and one copy of the submittal will be returned to the Contractor. If the Government performs a conformance review of other Designer of Record approved submittals, the submittals will be so identified and returned, as described above.

3.8 INFORMATION ONLY SUBMITTALS

Normally submittals for information only will not be returned. Approval of the Contracting Officer is not required on information only submittals. The Government reserves the right to require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

3.9 STAMPS

Stamps used by the Contractor on the submittal data to certify that the submittal meets contract requirements shall be similar to the following:

CONTRACTOR

(Firm Name)

____ Approved

____ Approved with corrections as noted on the submittal data and/or attached sheets.

SIGNATURE:_____

TITLE: (DESIGNER OF RECORD)

SECTION 01420

SOURCES FOR REFERENCE PUBLICATIONS
08/02

PART 1 GENERAL

1.1 REFERENCES

Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number, date and title. The document number used in the citation is the number assigned by the standards producing organization, (e.g. ASTM B 564 Nickel Alloy Forgings). However, when the standards producing organization has not assigned a number to a document, an identifying number has been assigned for reference purposes.

1.2 ORDERING INFORMATION

The addresses of the standards publishing organizations whose documents are referenced in other sections of these specifications are listed below, and if the source of the publications is different from the address of the sponsoring organization, that information is also provided. Documents listed in the specifications with numbers which were not assigned by the standards producing organization should be ordered from the source by title rather than by number.

ACI INTERNATIONAL (ACI)
P.O. Box 9094
Farmington Hills, MI 48333-9094
Ph: 248-848-3700
Fax: 248-848-3701
Internet: http://www.aci-int.org

AIR CONDITIONING AND REFRIGERATION INSTITUTE (ARI)
4301 North Fairfax Dr., Suite 425
ATTN: Pubs Dept.
Arlington, VA 22203
Ph: 703-524-8800
Fax: 703-528-3816
E-mail: ari@ari.org
Internet: http://www.ari.org

AIR CONDITIONING CONTRACTORS OF AMERICA (ACCA)
2800 Shirlington Road, Suite 300
Arlington, VA 22206
Ph: 703-575-4477
FAX: 703-575-4449
Internet: http://www.acca.org

AIR DIFFUSION COUNCIL (ADC)
1000 East Woodfield Road, Suite 102
Shaumburg, IL 60173-5921
Ph: 847-706-6750
Fax: 847-706-6751

Internet: http://www.flexibleduct.org

AIR MOVEMENT AND CONTROL ASSOCIATION (AMCA)
30 W. University Dr.
Arlington Heights, IL 60004-1893
Ph: 847-394-0150
Fax: 847-253-0088
Internet: http://www.amca.org

ALUMINUM ASSOCIATION (AA)
900 19th Street N.W.
Washington, DC 20006
Ph: 202-862-5100
Fax: 202-862-5164
Internet: http://www.aluminum.org

AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)
1827 Walden Ofc. Sq.
Suite 104
Schaumburg, IL 60173-4268
Ph: 847-303-5664
Fax: 847-303-5774
Internet: http://www.aamanet.org

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)
444 N. Capital St., NW, Suite 249
Washington, DC 20001
Ph: 800-231-3475 202-624-5800
Fax: 800-525-5562 202-624-5806
Internet: http://www.aashto.org

AMERICAN ASSOCIATION OF TEXTILE CHEMISTS AND COLORISTS (AATCC)
P.O. Box 12215
Research Triangle Park, NC 27709-2215
Ph: 919-549-8141
Fax: 919-549-8933
Internet: http://www.aatcc.org

AMERICAN BEARING MANUFACTURERS ASSOCIATION (ABMA)
2025 M Street, NW, Suite 800
Washington, DC 20036
Ph: 202-367-1155
Fax: 202-367-2155
Internet: http://www.abma-dc.org

AMERICAN BOILER MANUFACTURERS ASSOCIATION (ABMA)
4001 North 9th Street, Suite 226
Arlington, VA 22203-1900
Ph: 703-522-7350
Fax: 703-522-2665
Internet: http://www.abma.com

AMERICAN CONCRETE PIPE ASSOCIATION (ACPA)
222 West Las Colinas Blvd., Suite 641
Irving, TX 75039-5423
Ph: 972-506-7216 or 800-290-2272

Fax: 972-506-7682
Internet: http://www.concrete-pipe.org
e-mail: info@concrete-pipe.org

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH)
1330 Kemper Meadow Dr.
Suite 600
Cincinnati, OH 45240
Ph: 513-742-2020
Fax: 513-742-3355
Internet: http://www.acgih.org
E-mail: pubs@acgih.org

AMERICAN FOREST & PAPER ASSOCIATION (AF&PA)
American Wood Council
ATTN: Publications Dept.
1111 Nineteenth St. NW, Suite 800
Washington, DC 20036
Ph: 800-294-2372 or 202-463-2700
Fax: 202-463-2471
Internet: http://www.afandpa.org/awc/

AMERICAN GAS ASSOCIATION (AGA)
400 N. Capitol St. N.W.Suite 450
Washington, D.C. 20001
Ph: 202-824-7000
Fax: 202-824-7115
Internet: http://www.aga.org

AMERICAN GAS ASSOCIATION LABORATORIES (AGAL)
400 N. Capitol St. N.W.Suite 450
Washington, D.C. 20001
Ph: 202-824-7000
Fax: 202-824-7115
Internet: http://www.aga.org

AMERICAN GEAR MANUFACTURERS ASSOCIATION (AGMA)
1500 King St., Suite 201
Alexandria, VA 22314-2730
Ph: 703-684-0211
Fax: 703-684-0242
Internet: http://www.agma.org

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
One East Wacker Dr., Suite 3100
Chicago, IL 60601-2001
Ph: 312-670-2400
Publications: 800-644-2400
Fax: 312-670-5403
Internet: http://www.aisc.org

AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC)
7012 So. Revere Parkway, Suite 140
Englewood, CO 80112
Ph: 303-792-9559
Fax: 303-792-0669
Internet: http://www.aitc-glulam.org

AMERICAN IRON AND STEEL INSTITUTE (AISI)
1101 17th St., NW Suite 1300
Washington, DC 20036
Ph: 202-452-7100
Internet: http://www.steel.org

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
1819 L Street, NW, 6th Floor
Washington, DC 20036
Ph: 202-293-8020
Fax: 202-293-9287
Internet: http://www.ansi.org/
Note --- Documents beginning with the letter "S" can be ordered from:
Acoustical Society of America
Standards and Publications Fulfillment Center
P. O. Box 1020
Sewickley, PA 15143-9998
Ph: 412-741-1979
Fax: 412-741-0609
Internet: http://asa.aip.org
General e-mail: asa@aip.org
Publications e-mail: asapubs@abdintl.com

AMERICAN NURSERY AND LANDSCAPE ASSOCIATION (ANLA)
1250 I St., NW, Suite 500
Washington, DC 20005-3922
Ph: 202-789-2900
FAX: 202-789-1893
Internet: http://www.anla.org

AMERICAN PETROLEUM INSTITUTE (API)
1220 L St., NW
Washington, DC 20005-4070
Ph: 202-682-8000
Fax: 202-682-8223
Internet: http://www.api.org

AMERICAN PUBLIC HEALTH ASSOCIATION (APHA)
800 I Street, NW
Washington, DC 20001
PH: 202-777-2742
FAX: 202-777-2534
Internet: http://www.apha.org

AMERICAN RAILWAY ENGINEERING & MAINTENANCE-OF-WAY ASSOCIATION (AREMA)
8201 Corporate Dr., Suite 1125
Landover, MD 20785-2230
Ph: 301-459-3200
Fax: 301-459-8077
Internet: http://www.arema.org

AMERICAN SOCIETY FOR NONDESTRUCTIVE TESTING (ASNT)
1711 Arlingate Lane
P.O. Box 28518
Columbus, OH 43228-0518
Ph: 800-222-2768

Fax: 614-274-6899
Internet: http://www.asnt.org

AMERICAN SOCIETY FOR QUALITY (ASQ)
600 North Plankinton Avenue
Milwaukee, WI 53202-3005
Ph: 800-248-1946
Fax: 414-272-1734
Internet: http://www.asq.org

ASTM INTERNATIONAL (ASTM)

100 Barr Harbor Drive
West Conshohocken, PA 19428-2959
Ph: 610-832-9585
Fax: 610-832-9555
Internet: http://www.astm.org

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)
1801 Alexander Bell Drive
Reston, VA 20191-4400
Ph: 703-295-6300 - 800-548-2723
Fax: 703-295-6222
Internet: http://www.asce.org
e-mail: marketing@asce.org

AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)
1791 Tullie Circle, NE
Atlanta, GA 30329
Ph: 800-527-4723 or 404-636-8400
Fax: 404-321-5478
Internet: http://www.ashrae.org

AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE)
901 Canterbury, Suite A
Westlake, OH 44145
Ph: 440-835-3040
Fax: 440-835-3488
E-mail: asse@ix.netcom.com
Internet: http://www.asse-plumbing.org

AMERICAN WATER WORKS ASSOCIATION(AWWA)
6666 West Quincy
Denver, CO 80235
Ph: 800-926-7337 - 303-794-7711
Fax: 303-794-7310
Internet: http://www.awwa.org

AMERICAN WELDING SOCIETY (AWS)
550 N.W. LeJeune Road
Miami, FL 33126
Ph: 800-443-9353 - 305-443-9353
Fax: 305-443-7559
Internet: http://www.amweld.org

AMERICAN WOOD-PRESERVERS' ASSOCIATION (AWPA)

P.O. Box 5690
Grandbury, TX 76049-0690
Ph: 817-326-6300
Fax: 817-326-6306
Internet: http://www.awpa.com

APA - THE ENGINEERED WOOD ASSOCIATION (APA)
P.O.Box 11700
Tacoma, WA 98411-0700
Ph: 253-565-6600
Fax: 253-565-7265
Internet: http://www.apawood.org

ARCHITECTURAL & TRANSPORTATION BARRIERS COMPLIANCE BOARD (ATBCB)
The Access Board
1331 F Street, NW, Suite 1000
Washington, DC 20004-1111
PH: 202-272-5434
FAX: 202-272-5447
Internet: http://www.access-board.gov

ARCHITECTURAL WOODWORK INSTITUTE (AWI)
1952 Isaac Newton Square West
Reston, VA 20190
Ph: 703-733-0600
Fax: 703-733-0584
Internet: http://www.awinet.org

ASBESTOS CEMENT PIPE PRODUCERS ASSOCIATION (ACPPA)
PMB114-1745 Jefferson Davis Highway
Arlington, VA 22202
Ph: 514-861-1153
Fax: 514-861-1152
Internet: None

ASM INTERNATIONAL (ASM)
9639 Kinsman Road
Materials Park, OH 44073-0002
Ph: 440-338-5151
Fax: 440-338-4634
Internet: http://www.asm-intl.org
Order Publications From:
ASM International
ATTN: MSC/Book Order
P.O. Box 473
Novelty, OH 44072-9901

ASME INTERNATIONAL (ASME)
Three Park Avenue
New York, NY 10016-5990
Ph: 212-591-7722
Fax: 212-591-7674
Internet: http://www.asme.org

ASPHALT INSTITUTE (AI)
Research Park Dr.
P.O. Box 14052

Lexington, KY 40512-4052
Ph: 859-288-4960
Fax: 859-288-4999
Internet: http://www.asphaltinstitute.org

ASSOCIATED AIR BALANCE COUNCIL (AABC)
1518 K St., NW, Suite 503
Washington, DC 20005
Ph: 202-737-0202
Fax: 202-638-4833
Internet: http://www.aabchq.com
E-mail: aabchq@aol.com

ASSOCIATION FOR THE ADVANCEMENT OF MEDICAL INSTRUMENTATION (AAMI)
1110 N. Glebe Rd., Suite 220
Arlington, VA 22201-5762
Ph: 1-800l-332-2264 or 703-525-4890
Fax: 703-276-0793
Internet: http://www.aami.org

ASSOCIATION OF EDISON ILLUMINATING COMPANIES (AEIC)
600 No. 18th St.
P.O. Box 2641
Birmingham, AL 35291
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Washington, DC 20401
Ph: 866-512-1800 or 202-512-1800
Fax: 202-512-2250
Internet: http://www.gpo.gov
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National Technical Information Services (NTIS)
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Springfield, VA 22161
Ph: 703-605-6000
Fax: 703-605-6900
Internet: http://www.ntis.gov

NATIONAL LIME ASSOCIATION (NLA)
200 North Glebe Road, Suite 800
Arlington, VA 22203
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FAX: 703-243-5489
Internet: http://www.lime.org

NATIONAL OAK FLOORING MANUFACTURERS ASSOCIATION (NOFMA)
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Ph: 901-526-5016
Fax: 901-526-7022
Internet: http://www.nofma.org

NATIONAL READY-MIXED CONCRETE ASSOCIATION (NRMCA)
900 Spring St.
Silver Spring, MD 20910
Ph: 301-587-1400
Fax: 301-585-4219
Internet: http://www.nrmca.org

NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)
10255 W. higgins Rd., Suite 600
Rosemont, IL 60018
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Fax: 847-299-1183
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NATIONAL TERRAZZO & MOSAIC ASSOCIATION (NTMA)
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Ph: 703-779-1022 or 800-323-9736
Fax: 703-779-1026
Internet: http://www.ntma.com

e-mail: info@ntma.com

NATURAL RESOURCE, AGRICULTURAL AND ENGINEERING SERVICE (NRAES)
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152 Riley-Robb Hall
Ithaca, NY 14853-5701
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Fax: 607-254-8770
Internet: http://www.nraes.org
E-mail: nraes@cornell.edu

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e-mail: pfi@pfi-institute.org

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Fax: 630-790-3095
Internet: http://www.ppfahome.org

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Fax: 202-462-9779
Internet: http://www.plasticpipe.org

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Fax: 508-230-3529
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E-Mail: info@pdionline.org

PLUMBING AND MECHANICAL CONTRACTORS ASSOCIATION (PMCA)
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Wilsonville, OR 97070-9626
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Fax: 503-682-6241
Internet: http://www.pmcaoregon.com/

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Ph: 800-533-7694
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Internet: http://www.phccweb.org

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Norcross, GA 30092
Ph: 770-242-2632
Fax: 770-446-1452
Internet: http://www.porcelainenamel.com
e-mail: penamel@aol.com

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Phoenix, AZ 85021
Ph: 602-870-7540
Fax: 602-870-7541
Internet: http://www.post-tensioning.org/

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Chicago, IL 60606-6938
Ph: 312-786-0300
Fax: 312-786-0353
Internet: http://www.pci.org
e-mail: info@pci.org

REDWOOD INSPECTION SERVICE (RIS)
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Novato, CA 94949
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Fax: 415-382-8531
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Fax: 330-725-0576

SCIENTIFIC CERTIFICATION SYSTEMS (SCS)
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Oakland, CA 94612
Ph: 510-832-1415
FAX: 510-832-0359
Internet: http://www.scs1.com

SCREEN MANUFACTURERS ASSOCIATION (SMA)
2850 South Ocean Boulevard, Suite 114
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Fax: 561-533-7466
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Internet: http://www.smacentral.org

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San Jose, CA 95134
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Fax: 1.408.428.9600
Internet: http://www.semi.org
E-mail: semihq@semi.org

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Chantilly, VA 20151-1209
Ph: 703-803-2980
Fax: 703-803-3732
Internet: http://www.smacna.org
e-mail: info@smacna.org

SPRI (SPRI)
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Needham, MA 02494
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STATE OF NORTH CAROLINA ADMINISTRATIVE CODE
Internet: http://ncrules.state/nc.us

STATE OF VIRGINIA ADMINISTRATIVE CODE (VAC)
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Fax: 804-692-0625
Internet:
http://legis.state.va.us/statutesandregulations/admincode.htm

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Plant Health and Pest Prevention Services
Pest Exclusion Branch/Nursery, Seed and Cotton Program
1220 N Street, Room A-372
Sacramento CA 95814
PH: 916-653-0435
Internet: http://www.cdfa.ca.gov/phpps/nipm.htm

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Ph: 847-462-1930
Fax: 847-462-1940
Internet: http://www.sdi.org
e-mail: Steve@sdi.org

STEEL DOOR INSTITUTE (SDOI)
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Cleveland, OH 44145-1967
Ph: 440-899-0010
Fax: 440-892-1404
Internet: http://www.steeldoor.org

STEEL JOIST INSTITUTE (SJI)
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Fax: 843-626-5565
Internet: http://www.steeljoist.org

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Fax: 847-438-8766
Internet: http://www.steeltank.com

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Cleveland, OH 44115-2851
Ph: 216-241-7333
Fax: 216-241-0105
Internet: http://www.steelwindows.com

TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY (TAPPI)
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Atlanta, GA 30348-5113
PH: 800-322-8686
FAX: 770-446-6947
Internet: http://www.tappi.org

ASSOCIATION OF THE WALL AND CEILING INDUSTRIES - INTERNATIONAL (AWCI)
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PH: 703-534-8300
FAX: 703-534-8307
Internet: http://www.awci.org

INSULATING GLASS MANUFACTURERS ALLIANCE (IGMA)
27 ave Goulburn Avenue
Ottawa, Ontario. CANADA
K1N 8C7
Phone: 613-233-1510
Fax: 613-233-1929
e-mail: info@igmaonline.org
Internet: http://www.igmaonline.org

THE SOCIETY FOR PROTECTIVE COATINGS (SSPC)
40 24th Street, 6th Floor
Pittsburgh, PA 15222-4656
Ph: 412-281-2331
Fax: 412-281-9992
Internet: http://www.sspc.org

TILE COUNCIL OF AMERICA (TCA)
100 Clemson Research Blvd
Anderson, SC 29625
Ph: 864-646-8453
FAX: 864-646-2821
Internet: http://www.tileusa.com
e-mail: literature@tileusa.com

TRUSS PLATE INSTITUTE (TPI)
583 D'Onofrio Dr., Suite 200
Madison, WI 53719
Ph: 608-833-5900
Fax: 608-833-4360
Internet: http://www.tpinst.org

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Fax: 914-332-1541
Internet: http://www.tema.org

TURFGRASS PRODUCERS INTERNATIONAL (TPI)
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PH: 800-405-8873

FAX: 847-705-8347
Internet: http://www.turfgrasssod.org

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Northbrook, IL 60062-2096
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Fax: 847-272-8129
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e-mail: northbrook@us.ul.com

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Fax: 214-243-3907
Internet: http://www.uni-bell.org
e-mail: info@uni-bell.org

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U.S. ARMY CORPS OF ENGINEERS (USACE)
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or http://www.hnd.usace.army.mil/techinfo/index.htm

U. S. ARMY EDGEWOOD RESEARCH, DEVELOPMENT, AND ENGINEERING CENTER (EA)
Aberdeen Proving Ground, MD
Internet: Unknown

U.S. ARMY ENVIRONMENTAL CENTER (AEC)
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Internet: http://aec.army.mil
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U. S. ARMY ENVIRONMENTAL HYGIENE AGENCY (USAEHA)
Now: U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM)
5158 Blackhawk Road
Aberdeen Proving Ground
MD 21010-5403
PH: 800-222-9698; website
Internet: http://chppm-www.apgea.army.mil

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FAX:
Internet: Not found

U.S. DEFENSE INTELLIGENCE AGENCY (DIA)
Defense Intelligence Analysis Center (DIAC)
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Bolling AFB, MD
Internet: http://www.dia.mil

U.S. DEFENSE LOGISTICS AGENCY (DLA)
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Washington, DC 20590
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Internet: http://www.fema.gov

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Internet: http://www.gpo.gov
E-mail: gpoaccess@gpo.gov

U.S. NAVAL FACILITIES ENGINEERING COMMAND (NAVFAC)
1510 Gilbert St.
Norfolk, VA 23511-2699

Ph: 757-322-4200
Fax: 757-322-4416
Internet: http://www.efdlant.navfac.navy.mil/LANTOPS_15

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601 Wythe St.
Alexandria, VA 22314-1994
Ph: 703-684-2452
Fax: 703-684-2492
Internet: http://www.wef.org

WATER QUALITY ASSOCIATION (WQA)
4151 Naperville Rd.
Lisle, IL 60532
Ph: 630-505-0160
Fax: 630-505-9637
Internet: http://www.wqa.org
e-mail: info@mail.wqa.org

WEST COAST LUMBER INSPECTION BUREAU (WCLIB)
P.O. Box 23145
Portland, OR 97281
Ph: 503-639-0651
Fax: 503-684-8928
Internet: http://www.wclib.org
e-mail: info@wclib.org

WESTERN WOOD PRESERVERS INSTITUTE (WWPI)
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Vancover, WA 98665
Ph: 360-693-9958
Fax: 360-693-9967
Internet: http://www.wwpinstitute.org
e-mail: info@wwpinstitute.org

WESTERN WOOD PRODUCTS ASSOCIATION (WWPA)
Yeon Bldg.
522 SW 5th Ave.
Suite 500
Portland, OR 97204-2122
Ph: 503-224-3930
Fax: 503-224-3934
Internet: http://www.wwpa.org
e-mail: info@wwpa.org

WINDOW AND DOOR MANUFACTURERS ASSOCIATION (WDMA)
1400 East Touhy Ave., Suite 470
Des Plaines, IL 60018
Ph: 847-299-5200 or 800-223-2301
Fax: 708-299-1286
Internet: http://www.wdma.com

e-mail: admin@wdma.com

WOOD MOULDING AND MILLWORK PRODUCERS ASSOCIATION (WMMPA)
507 First Street
Woodland, CA 95695
Ph: 530-661-9591 or 800-550-7889
Fax: 530-661-9586
Internet: http://www.wmmpa.com

-- End of Section --

UFGS-01451A (May 2002)

SECTION 01451A

CONTRACTOR QUALITY CONTROL
05/02

PART 1 GENERAL

1.1 REFERENCES

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

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 3740	(2001) Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
ASTM E 329	(2000b) Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction

1.2 PAYMENT

Separate payment will not be made for providing and maintaining an effective Quality Control program, and all costs associated therewith shall be included in the applicable unit prices or lump-sum prices contained in the Bidding Schedule.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

The Contractor is responsible for quality control and shall establish and maintain an effective quality control system in compliance with the Contract Clause titled "Inspection of Construction." The quality control system shall consist of plans, procedures, and organization necessary to produce an end product which complies with the contract requirements. The system shall cover all design and construction operations, both onsite and offsite, and shall be keyed to the proposed construction sequence. The site project superintendent will be held responsible for the quality of work on the job and is subject to removal by the Contracting Officer for non-compliance with the quality requirements specified in the contract. The site project superintendent in this context shall be the highest level manager responsible for the overall construction activities at the site, including quality and production. The site project superintendent shall maintain a physical presence at the site at all times, except as otherwise acceptable to the Contracting Officer, and shall be responsible for all construction and construction related activities at the site.

3.2 QUALITY CONTROL PLAN

The Contractor shall furnish for review by the Government, not later than 5 days after receipt of notice to proceed, the Contractor Quality Control (CQC) Plan proposed to implement the requirements of the Contract Clause titled "Inspection of Construction." The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. The Government will consider an interim plan for the first 30 days of operation. Design and construction will be permitted to begin only after acceptance of the CQC Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of a CQC Plan or another interim plan containing the additional features of work to be started.

3.2.1 Content of the CQC Plan

The CQC Plan shall include, as a minimum, the following to cover all design and construction operations, both onsite and offsite, including work by subcontractors, designers of record, consultants, architect/engineers (AE), fabricators, suppliers, and purchasing agents:

a. A description of the quality control organization, including a chart showing lines of authority and acknowledgment that the CQC staff shall implement the three phase control system for all aspects of the work specified. The staff shall include a CQC System Manager who shall report to the project superintendent.

b. The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a CQC function.

c. A copy of the letter to the CQC System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the CQC System Manager, including authority to stop work which is not in compliance with the contract. The CQC System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities, and responsibilities. Copies of these letters shall also be furnished to the Government.

d. Procedures for scheduling, reviewing, certifying, and managing submittals, including those of subcontractors, designers of record, consultants, architect engineers (AE), offsite fabricators, suppliers, and purchasing agents. These procedures shall be in accordance with Section 01330 SUBMITTAL PROCEDURES.

e. Control, verification, and acceptance testing procedures for each specific test to include the test name, specification paragraph requiring test, feature of work to be tested, test frequency, and person responsible for each test. (Laboratory facilities must be approved by the Contracting Officer.)

f. Procedures for tracking preparatory, initial, and follow-up control phases and control, verification, and acceptance tests including documentation.

g. Procedures for tracking design and construction deficiencies from identification through acceptable corrective action. These procedures shall establish verification that identified deficiencies have been corrected.

h. Reporting procedures, including proposed reporting formats.

i. A list of the definable features of work. A definable feature of work is a task which is separate and distinct from other tasks, has separate control requirements, and may be identified by different trades or disciplines, or it may be work by the same trade in a different environment. Although each section of the specifications may generally be considered as a definable feature of work, there are frequently more than one definable features under a particular section. This list will be agreed upon during the coordination meeting.

3.2.2 Additional Requirements for Design Quality Control (DQC) Plan

The followng additional requirements apply to the Design Quality Control (DQC) plan:

(1) The Contractor's QCP Plan shall provide and maintain a Design Quality Control (DQC) Plan as an effective quality control program which will assure that all services required by this design-build contract are performed and provided in a manner that meets professional architectural and engineering quality standards. As a minimum, all documents shall be technically reviewed by competent, independent reviewers identified in the DQC Plan. The same element that produced the product shall not perform the independent technical review (ITR). In addition, the DQC Plan shall incorporate the Lessons Learned Databases provided by the Government. The Contractor shall correct errors and deficiencies in the design documents prior to submitting them to the Government.

(2) The Contractor shall include the design schedule in the master project schedule, showing the sequence of events involved in carrying out the project design tasks within the specific contract period. This should be at a detailed level of scheduling sufficient to identify all major design tasks, including those that control the flow of work. The schedule shall include review and correction periods associated with each item. This should be a forward planning as well as a project monitoring tool. The schedule reflects calendar days and not dates for each activity. If the schedule is changed, the Contractor shall submit a revised schedule reflecting the change within 7 calendar days. The Contractor shall include in the DQC Plan the discipline-specific checklists to be used during the design and quality control of each submittal. These completed checklists shall be submitted at each design phase as part of the project documentation. Example checklists can be found in ER 1110-1-12.

(3) The DQC Plan shall be implemented by an Design Quality Control Manager who has the responsibility of being cognizant of and

assuring that all documents on the project have been coordinated. This individual shall be a person who has verifiable engineering or architectural design experience and is a registered professional engineer or architect. The Contractor shall notify the Contracting Officer, in writing, of the name of the individual, and the name of an alternate person assigned to the position.

The Contracting Officer will notify the Contractor in writing of the acceptance of the DQC Plan. After acceptance, any changes proposed by the Contractor are subject to the acceptance of the Contracting Officer.

3.2.3 Acceptance of Plan

Acceptance of the Contractor's plan is required prior to the start of design and construction. Acceptance is conditional and will be predicated on satisfactory performance during the design and construction. The Government reserves the right to require the Contractor to make changes in his CQC Plan and operations including removal of personnel, as necessary, to obtain the quality specified.

3.2.4 Notification of Changes

After acceptance of the CQC Plan, the Contractor shall notify the Contracting Officer in writing of any proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

3.3 COORDINATION MEETING

After the Postaward Conference, before start of design or construction, and prior to acceptance by the Government of the CQC Plan, the Contractor shall meet with the Contracting Officer or Authorized Representative and discuss the Contractor's quality control system. The CQC Plan shall be submitted for review a minimum of 7 calendar days prior to the Coordination Meeting. During the meeting, a mutual understanding of the system details shall be developed, including the forms for recording the CQC operations, design activities, control activities, testing, administration of the system for both onsite and offsite work, and the interrelationship of Contractor's Management and control with the Government's Quality Assurance. Minutes of the meeting shall be prepared by the Government and signed by both the Contractor and the Contracting Officer. The minutes shall become a part of the contract file. There may be occasions when subsequent conferences will be called by either party to reconfirm mutual understandings and/or address deficiencies in the CQC system or procedures which may require corrective action by the Contractor.

3.4 QUALITY CONTROL ORGANIZATION

3.4.1 Personnel Requirements

The requirements for the CQC organization are a CQC System Manager, a Design Quality Manager, and sufficient number of additional qualified personnel to ensure safety and contract compliance. The Safety and Health Manager shall receive direction and authority from the CQC System Manager and shall serve as a member of the CQC staff. Personnel identified in the technical provisions as requiring specialized skills to assure the required work is being performed properly will also be included as part of the CQC

organization.The Contractor's CQC staff shall maintain a presence at the site at all times during progress of the work and have complete authority and responsibility to take any action necessary to ensure contract compliance. The CQC staff shall be subject to acceptance by the Contracting Officer. The Contractor shall provide adequate office space, filing systems and other resources as necessary to maintain an effective and fully functional CQC organization. Complete records of all letters, material submittals, show drawing submittals, schedules and all other project documentation shall be promptly furnished to the CQC organization by the Contractor. The CQC organization shall be responsible to maintain these documents and records at the site at all times, except as otherwise acceptable to the Contracting Officer.

3.4.2 CQC System Manager

The Contractor shall identify as CQC System Manager an individual within the onsite work organization who shall be responsible for overall management of CQC and have the authority to act in all CQC matters for the Contractor. The CQC System Manager shall be a construction person with a minimum of 10 years' experience in related work. This CQC System Manager shall be on the site at all times during construction and shall be employed by the prime Contractor. The CQC System Manager shall be assigned no other duties. An alternate for the CQC System Manager shall be identified in the plan to serve in the event of the System Manager's absence. The requirements for the alternate shall be the same as for the designated CQC System Manager.

3.4.3 CQC Personnel

In addition to CQC personnel specified elsewhere in the contract, the Contractor shall provide as part of the CQC organization specialized personnel to assist the CQC System Manager for the following areas: electrical, mechanical, civil, structural. These individuals may be employees of the prime or subcontractor; be responsible to the CQC System Manager; be physically present at the construction site during work on their areas of responsibility; have the necessary education and/or experience in accordance with the experience matrix listed herein. These individuals may perform other duties but must be allowed sufficient time to perform their assigned quality control duties as described in the Quality Control Plan.

Experience Matrix

	Area	Qualifications
a.	Civil	A technician with 10 years' related experience
b.	Mechanical	A person with 10 years' related experience
c.	Electrical	A person with 10 years' related experience
d.	Structural	A person with 5 years' related experience
e.	Design Quality Control Manager	Registered Architect

or Professional Engineer

3.4.4 Additional Requirement

In addition to the above experience and education requirements the CQC System Manager shall have completed the course entitled "Construction Quality Management For Contractors". This course is offered on a quarterly basis within the Savannah District boundaries. CQC System Managers who have not successfully completed this course must attend the next available training session. Failure to successfully complete this training within the next available training date will be grounds for removal as CQC System Manager. There is currently a nominal fee to cover the cost of the training materials for Contractors who have current contracts with the Savannah District.

3.4.5 Organizational Changes

The Contractor shall maintain the CQC staff at full strength at all times. When it is necessary to make changes to the CQC staff, the Contractor shall revise the CQC Plan to reflect the changes and submit the changes to the Contracting Officer for acceptance.

3.5 SUBMITTALS AND DELIVERABLES

Submittals, if needed, shall be made as specified in Section 01330 SUBMITTAL PROCEDURES. The CQC organization shall be responsible for certifying that all submittals and deliverables are in compliance with the contract requirements. When Section 15950A HEATING, VENTILATING AND AIR CONDITIONING (HVAC) CONTROL SYSTEMS; 15951A DIRECT DIGITAL CONTROL FOR HVAC; 15990A TESTING, ADJUSTING, AND BALANCING OF HVAC SYSTEMS; or 15995A COMMISSIONING OF HVAC SYSTEMS are included in the contract, the submittals required by those sections shall be coordinated with Section 01330 SUBMITTAL PROCEDURES to ensure adequate time is allowed for each type of submittal required.

3.6 CONTROL

Contractor Quality Control is the means by which the Contractor ensures that the construction, to include that of subcontractors and suppliers, complies with the requirements of the contract. At least three phases of control shall be conducted by the CQC System Manager for each definable feature of the construction work as follows:

3.6.1 Preparatory Phase

This phase shall be performed prior to beginning work on each definable feature of work, after all required plans/documents/materials are approved/accepted, and after copies are at the work site. This phase shall include:

a. A review of each paragraph of applicable specifications, reference codes, and standards. A copy of those sections of referenced codes and standards applicable to that portion of the work to be accomplished in the field shall be made available by the Contractor at the preparatory inspection. These copies shall be maintained in the field and available for use by Government personnel until final acceptance of the work.

b. A review of the contract drawings.

c. A check to assure that all materials and/or equipment have been tested, submitted, and approved.

d. Review of provisions that have been made to provide required control inspection and testing.

e. Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the contract.

f. A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawings or submitted data, and are properly stored.

g. A review of the appropriate activity hazard analysis to assure safety requirements are met.

h. Discussion of procedures for controlling quality of the work including repetitive deficiencies. Document construction tolerances and workmanship standards for that feature of work.

i. A check to ensure that the portion of the plan for the work to be performed has been accepted by the Contracting Officer.

j. Discussion of the initial control phase.

k. The Government shall be notified at least 48 hours in advance of beginning the preparatory control phase. This phase shall include a meeting conducted by the CQC System Manager and attended by the superintendent, other CQC personnel (as applicable), and the foreman responsible for the definable feature. The results of the preparatory phase actions shall be documented by separate minutes prepared by the CQC System Manager and attached to the daily CQC report. The Contractor shall instruct applicable workers as to the acceptable level of workmanship required in order to meet contract specifications.

3.6.2 Initial Phase

This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:

a. A check of work to ensure that it is in full compliance with contract requirements. Review minutes of the preparatory meeting.

b. Verify adequacy of controls to ensure full contract compliance. Verify required control inspection and testing.

c. Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with required sample panels as appropriate.

d. Resolve all differences.

e. Check safety to include compliance with and upgrading of the safety plan and activity hazard analysis. Review the activity analysis with each worker.

f. The Government shall be notified at least 24 hours in advance of beginning the initial phase. Separate minutes of this phase shall be prepared by the CQC System Manager and attached to the daily CQC report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.

g. The initial phase should be repeated for each new crew to work onsite, or any time acceptable specified quality standards are not being met.

3.6.3 Follow-up Phase

Daily checks shall be performed to assure control activities, including control testing, are providing continued compliance with contract requirements, until completion of the particular feature of work. The checks shall be made a matter of record in the CQC documentation. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work which may be affected by the deficient work. The Contractor shall not build upon nor conceal non-conforming work.

3.6.4 Additional Preparatory and Initial Phases

Additional preparatory and initial phases shall be conducted on the same definable features of work if: the quality of on-going work is unacceptable; if there are changes in the applicable CQC staff, onsite production supervision or work crew; if work on a definable feature is resumed after a substantial period of inactivity; or if other problems develop.

3.7 TESTS

3.7.1 Testing Procedure

The Contractor shall perform specified or required tests to verify that control measures are adequate to provide a product which conforms to contract requirements. Upon request, the Contractor shall furnish to the Government duplicate samples of test specimens for possible testing by the Government. Testing includes operation and/or acceptance tests when specified. The Contractor shall procure the services of a Corps of Engineers approved testing laboratory or establish an approved testing laboratory at the project site. The Contractor shall perform the following activities and record and provide the following data:

a. Verify that testing procedures comply with contract requirements.

b. Verify that facilities and testing equipment are available and comply with testing standards.

c. Check test instrument calibration data against certified standards.

d. Verify that recording forms and test identification control number system, including all of the test documentation requirements, have been prepared.

e. Results of all tests taken, both passing and failing tests, shall be recorded on the CQC report for the date taken. Specification paragraph reference, location where tests were taken, and the sequential control number identifying the test shall be given. If approved by the Contracting Officer, actual test reports may be submitted later with a reference to the test number and date taken. An information copy of tests performed by an offsite or commercial test facility shall be provided directly to the Contracting Officer. Failure to submit timely test reports as stated may result in nonpayment for related work performed and disapproval of the test facility for this contract.

3.7.2 Testing Laboratories

3.7.2.1 Capability Check

The Government reserves the right to check laboratory equipment in the proposed laboratory for compliance with the standards set forth in the contract specifications and to check the laboratory technician's testing procedures and techniques. Laboratories utilized for testing soils, concrete, asphalt, and steel shall meet criteria detailed in ASTM D 3740 and ASTM E 329.

3.7.2.2 Capability Recheck

If the selected laboratory fails the capability check, the Contractor will be assessed a charge to reimburse the Government for each succeeding recheck of the laboratory or the checking of a subsequently selected laboratory. Such costs will be deducted from the contract amount due the Contractor.

3.7.3 Onsite Laboratory

The Government reserves the right to utilize the Contractor's control testing laboratory and equipment to make assurance tests, and to check the Contractor's testing procedures, techniques, and test results at no additional cost to the Government.

3.7.4 Furnishing or Transportation of Samples for Testing

Costs incidental to the transportation of samples or materials shall be borne by the Contractor. Samples of materials for test verification and acceptance testing by the Government shall be delivered to the following address:

US Army Engineer District, Savannah
Environmental & Materials Unit
200 North Cobb Parkway
Building 400, Suite 404
Marietta, GA 30062

Coordination for each specific test will be made through the Area Office.

3.8 COMPLETION INSPECTION

3.8.1 Punch-Out Inspection

Near the end of the work, or any increment of the work established by a time stated in the Special Clause, "Commencement, Prosecution, and Completion of Work", or by the specifications, the CQC Manager shall conduct an inspection of the work. A punch list of items which do not conform to the approved drawings and specifications shall be prepared and included in the CQC documentation, as required by paragraph DOCUMENTATION. The list of deficiencies shall include the estimated date by which the deficiencies will be corrected. The CQC System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected. Once this is accomplished, the Contractor shall notify the Government that the facility is ready for the Government Pre-Final inspection.

3.8.2 Pre-Final Inspection

The Government will perform the pre-final inspection to verify that the facility is complete and ready to be occupied. A Government Pre-Final Punch List may be developed as a result of this inspection. The Contractor's CQC System Manager shall ensure that all items on this list have been corrected before notifying the Government, so that a Final inspection with the customer can be scheduled. Any items noted on the Pre-Final inspection shall be corrected in a timely manner. These inspections and any deficiency corrections required by this paragraph shall be accomplished within the time slated for completion of the entire work or any particular increment of the work if the project is divided into increments by separate completion dates.

3.8.3 Final Acceptance Inspection

The Contractor's Quality Control Inspection personnel, plus the superintendent or other primary management person, and the Contracting Officer's Representative shall be in attendance at the final acceptance inspection. Additional Government personnel including, but not limited to, those from Base/Post Civil Facility Engineer user groups, and major commands may also be in attendance. The final acceptance inspection will be formally scheduled by the Contracting Officer based upon results of the Pre-Final inspection. Notice shall be given to the Contracting Officer at least 14 days prior to the final acceptance inspection and shall include the Contractor's assurance that all specific items previously identified to the Contractor as being unacceptable, along with all remaining work performed under the contract, will be complete and acceptable by the date scheduled for the final acceptance inspection. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance with the contract clause titled "Inspection of Construction".

3.9 DOCUMENTATION

The Contractor shall maintain current records providing factual evidence that required quality control activities and/or tests have been performed. These records shall include the work of subcontractors and suppliers and shall be on an acceptable form that includes, as a minimum, the following information:

a. Contractor/subcontractor and their area of responsibility.

b. Operating plant/equipment with hours worked, idle, or down for repair.

c. Work performed each day, giving location, description, and by whom. When Network Analysis (NAS) is used, identify each phase of work performed each day by NAS activity number.

d. Test and/or control activities performed with results and references to specifications/drawings requirements. The control phase shall be identified (Preparatory, Initial, Follow-up). List of deficiencies noted, along with corrective action.

e. Quantity of materials received at the site with statement as to acceptability, storage, and reference to specifications/drawings requirements.

f. Submittals and deliverables reviewed, with contract reference, by whom, and action taken.

g. Offsite surveillance activities, including actions taken.

h. Job safety evaluations stating what was checked, results, and instructions or corrective actions.

i. Instructions given/received and conflicts in plans and/or specifications.

j. Contractor's verification statement.

These records shall indicate a description of trades working on the project; the number of personnel working; weather conditions encountered; and any delays encountered. These records shall cover both conforming and deficient features and shall include a statement that equipment and materials incorporated in the work and workmanship comply with the contract. The original and one copy of these records in report form shall be furnished to the Government daily within 24 hours after the date covered by the report, except that reports need not be submitted for days on which no work is performed. As a minimum, one report shall be prepared and submitted for every 7 days of no work and on the last day of a no work period. All calendar days shall be accounted for throughout the life of the contract. The first report following a day of no work shall be for that day only. Reports shall be signed and dated by the CQC System Manager. The report from the CQC System Manager shall include copies of test reports and copies of reports prepared by all subordinate quality control personnel.

3.10 SAMPLE FORMS

Sample forms are included in Attachment 1 to Section 00800.

3.11 NOTIFICATION OF NONCOMPLIANCE

The Contracting Officer will notify the Contractor of any detected noncompliance with the foregoing requirements. The Contractor shall take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, shall be deemed sufficient for

the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders shall be made the subject of claim for extension of time or for excess costs or damages by the Contractor.

-- End of Section --

CEGS-01500/S (February 1997)

SECTION 01500

TEMPORARY CONSTRUCTION FACILITIES
02/97

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

1.1.1 Site Plan

The Contractor shall prepare a site plan indicating the proposed location and dimensions of any area to be fenced and used by the Contractor, the number of trailers to be used, avenues of ingress/egress to the fenced area and details of the fence installation. Any areas which may have to be graveled to prevent the tracking of mud shall also be identified. The Contractor shall also indicate if the use of a supplemental or other staging area is desired.

1.1.2 Identification of Employees

The Contractor shall be responsible for furnishing to each employee, and for requiring each employee engaged on the work to display, identification as approved and directed by the Contracting Officer. Prescribed identification shall immediately be delivered to the Contracting Officer for cancellation upon release of any employee. When required, the Contractor shall obtain and provide fingerprints of persons employed on the project. Contractor and subcontractor personnel shall wear identifying markings on hard hats clearly identifying the company for whom the employee works.

1.1.3 Employee Parking

Contractor employees shall park privately owned vehicles in an area designated by the Contracting Officer. This area will be within reasonable walking distance of the construction site. Contractor employee parking shall not interfere with existing and established parking requirements of the military installation.

1.2 AVAILABILITY AND USE OF UTILITY SERVICES

1.2.1 Payment for Utility Services

The Government will make all reasonably required utilities available to the Contractor from existing outlets and supplies, as specified in the contract. Unless otherwise provided in the contract, the amount of each utility service consumed shall be charged to or paid for by the Contractor at prevailing rates charged to the Government or, where the utility is produced by the Government, at reasonable rates determined by the Contracting Officer. The Contractor shall carefully conserve any utilities furnished without charge.

1.2.2 ~~Meters and Temporary Connections~~Deleted

~~The Contractor, at its expense and in a manner satisfactory to the Contracting Officer, shall provide and maintain necessary temporary~~

~~connections, distribution lines, and meter bases (Government will provide meters) required to measure the amount of each utility used for the purpose of determining charges. The Contractor shall notify the Contracting Officer, in writing, 5 working days before final electrical connection is desired so that a utilities contract can be established. The Government will provide a meter and make the final hot connection after inspection and approval of the Contractor's temporary wiring installation. The Contractor shall not make the final electrical connection.~~

1.2.3 ~~Advance Deposit~~Deleted

~~An advance deposit for utilities consisting of an estimated month's usage or a minimum of $50.00 will be required. The last monthly bills for the fiscal year will normally be offset by the deposit and adjustments will be billed or returned as appropriate. Services to be rendered for the next fiscal year, beginning 1 October, will require a new deposit. Notification of the due date for this deposit will be mailed to the Contractor prior to the end of the current fiscal year.~~

1.2.4 ~~Final Meter Reading~~Deleted

~~Before completion of the work and final acceptance of the work by the Government, the Contractor shall notify the Contracting Officer, in writing, 5 working days before termination is desired. The Government will take a final meter reading, disconnect service, and remove the meters. The Contractor shall then remove all the temporary distribution lines, meter bases, and associated paraphernalia. The Contractor shall pay all outstanding utility bills before final acceptance of the work by the Government.~~

1.2.5 Sanitation

The Contractor shall provide and maintain within the construction area minimum field-type sanitary facilities approved by the Contracting Officer. Government toilet facilities will not be available to Contractor's personnel.

1.2.6 Telephone

The Contractor shall make arrangements and pay all costs for telephone facilities desired.

1.2.7 Utility Rates
*5
The Contractor will not be required to pay these utilities:

Water ~~$1.125 per 1000 gallons~~
Electricity ~~$0.0551 per kwh~~
Sewer ~~$1.297 per 1000 gallons~~
Natural Gas ~~$0.475 per therm~~

1.3 BULLETIN BOARD, PROJECT SIGN, AND PROJECT SAFETY SIGN

1.3.1 Bulletin Board

Immediately upon beginning of work, the Contractor shall provide a weatherproof glass-covered bulletin board not less than 36 by 48 inches in

size for displaying the Equal Employment Opportunity poster, a copy of the wage decision contained in the contract, Wage Rate Information poster, and other information approved by the Contracting Officer. The bulletin board shall be located at the project site in a conspicuous place easily accessible to all employees, as approved by the Contracting Officer. Legible copies of the aforementioned data shall be displayed until work is completed. Upon completion of work the bulletin board shall be removed by and remain the property of the Contractor.

1.3.2 Project Signs

The Contractor shall furnish and erect a project sign in the location as selected by the Contracting Officer. Details of construction shall be as shown on sketches included in Attachment 1 to Section 00800. The sign shall be constructed of 1/2 inch thick (or metric equivalent), grade A-C, exterior type plywood. The sign shall receive one coat primer paint followed by two coats brown color paint in accordance with Fed. Std. 595a, Color No. 20100 semigloss exterior type enamel. Lettering must be white gloss exterior type enamel (Fed. Std. 595a, Color No. 37875). Windows and door of the Castle and logo background shall be painted white (Fed. Std. 595a, Color No. 37875). The Castle and inner border line shall be brown (Fed. Std. 595a, Color No. 20100). Upon completion of work under this contract, the project sign shall be removed from the job site and shall remain the property of the Contractor.

The Engineering and Services Directorate emblem (AFVA 85-3) may be acquired by sending a letter; a completed DD Form 1149, Requisition and Invoice/Shipping Document; or a DA Form 17, Requisition for Publications (Army customers) to:

The Air Force Publishing Distribution Center
2800 Eastern Boulevard
Baltimore, MD 21220-2898

1.4 PROTECTION AND MAINTENANCE OF TRAFFIC

During construction the Contractor shall provide access and temporary relocated roads as necessary to maintain traffic. The Contractor shall maintain and protect traffic on all affected roads during the construction period except as otherwise specifically directed by the Contracting Officer. Measures for the protection and diversion of traffic, including the provision of watchmen and flagmen, erection of barricades, placing of lights around and in front of equipment and the work, and the erection and maintenance of adequate warning, danger, and direction signs, shall be as required by the State and local authorities having jurisdiction. The traveling public shall be protected from damage to person and property. The Contractor's traffic on roads selected for hauling material to and from the site shall interfere as little as possible with public traffic. The Contractor shall investigate the adequacy of existing roads and the allowable load limit on these roads. The Contractor shall be responsible for the repair of any damage to roads caused by construction operations.

All commercial vehicles larger than a pickup, to include panel vans with no side or rear windows, are to enter Pope AFB, NC, through one of two locations (Knox Street or Longstreet Road) on Fort Bragg, NC, where the vehicles will be "scanned." Entry gates on Pope AFB will be Armistead and Reilly Road.

1.4.1 Haul Roads

The Contractor will be required to use the haul routes shown on the plans unless otherwise permitted in writing by the Contracting Officer. When haul routes are not designated on the plans, the Contractor must obtain approval of the Contracting Officer of haul routes he intends to use. The Contractor shall maintain the haul routes and shall keep the dust problem under control by wetting the surface as needed. Sweeping and cleaning of pavements will be done as necessary to remove spillage resulting from the hauling operations. After all hauling has been completed, the Contractor shall restore the earth areas used for the haul routes to original condition by final grading, shaping, compacting, and grassing, and shall clean and sweep all paved areas as required. Any pavement damaged as a result of hauling operations under this contract for both the earth and other materials shall be promptly repaired by the Contractor, as approved by the Contracting Officer. The cost of maintenance and repair of the haul routes, as mentioned above, shall be considered as a subsidiary obligation of the Contractor. The axle load of earth hauling equipment operating on paved streets shall not exceed 18,000 pounds.

1.4.2 Barricades

The Contractor shall erect and maintain temporary barricades to limit public access to hazardous areas. Such barricades shall be required whenever safe public access to paved areas such as roads, parking areas or sidewalks is prevented by construction activities or as otherwise necessary to ensure the safety of both pedestrian and vehicular traffic. Barricades shall be securely placed, clearly visible with adequate illumination to provide sufficient visual warning of the hazard during both day and night.

1.5 CONTRACTOR'S TEMPORARY FACILITIES

1.5.1 Administrative Field Offices

The Contractor shall provide and maintain administrative field office facilities within the construction area at the designated site. Government office and warehouse facilities will not be available to the Contractor's personnel.

1.5.2 Supplemental Storage Area

Upon Contractor's request, the Contracting Officer will designate another or supplemental area for the Contractor's use and storage of trailers, equipment, and materials. This area may not be in close proximity of the construction site but shall be within the military boundaries. Fencing of materials or equipment will not be required at this site; however, the Contractor shall be responsible for cleanliness and orderliness of the area used and for the security of any material or equipment stored in this area. Utilities will not be provided to this area by the Government.

1.5.3 Appearance of Trailers

Trailers utilized by the Contractor for administrative or material storage purposes shall present a clean and neat exterior appearance and shall be in a state of good repair. Trailers which, in the opinion of the Contracting

Officer, require exterior painting or maintenance will not be allowed on the military property.

1.5.4 Maintenance of Storage Area

Fencing shall be kept in a state of good repair and proper alignment. Should the Contractor elect to traverse, with construction equipment or other vehicles, grassed or unpaved areas which are not established roadways, such areas shall be covered with a layer of gravel as necessary to prevent rutting and the tracking of mud onto paved or established roadways; gravel gradation shall be at the Contractor's discretion. Grass located within the boundaries of the construction site shall be mowed for the duration of the project. Grass and vegetation along fences, buildings, under trailers, and in areas not accessible to mowers shall be edged or trimmed neatly.

1.5.5 New Building

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In the event a new building is constructed for the temporary project field office, it shall be a minimum 12 feet in width, 16 feet in length and have a minimum of 7 feet headroom. It shall be equipped with approved electrical wiring, at least one double convenience outlet and the required switches and fuses to provide 110-120 volt power. It shall be provided with a work table with stool, desk with chair, two additional chairs, and one legal size file cabinet that can be locked. The building shall be waterproof, shall be supplied with heater, shall have a minimum of two doors, electric lights, a telephone, a battery operated smoke detector alarm, a sufficient number of adjustable windows for adequate light and ventilation, and a supply of approved drinking water. Approved sanitary facilities shall be furnished. The windows and doors shall be screened and the doors provided with dead bolt type locking devices or a padlock and heavy duty hasp bolted to the door. Door hinge pins shall be non-removable. The windows shall be arranged to open and to be securely fastened from the inside. Glass panels in windows shall be protected by bars or heavy mesh screens to prevent easy access to the building through these panels. In warm weather, air conditioning capable of maintaining the office at 50 percent relative humidity and a room temperature 20 degrees F below the outside temperature when the outside temperature is 95 degrees F, shall be furnished. Any new building erected for a temporary field office shall be maintained by the Contractor during the life of the contract and upon completion and acceptance of the work shall become the property of the Contractor and shall be removed from the site. All charges for telephone service for the temporary field office shall be borne by the Contractor~~, including long distance charges up to a maximum of $75.00 per month~~.

1.5.6 Security Provisions

Adequate outside security lighting shall be provided at the Contractor's temporary facilities. The Contractor shall be responsible for the security of its own equipment; in addition, the Contractor shall notify the appropriate law enforcement agency requesting periodic security checks of the temporary project field office.

1.6 PLANT COMMUNICATION

Whenever the Contractor has the individual elements of its plant so located that operation by normal voice between these elements is not satisfactory, the Contractor shall install a satisfactory means of communication, such as

telephone or other suitable devices. The devices shall be made available for use by Government personnel.

1.7 TEMPORARY PROJECT SAFETY FENCING

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As soon as practicable, but not later than 15 days after the date established for commencement of work, the Contractor shall furnish and erect temporary project safety fencing at the work site. The safety fencing shall be ~~a high visibility orange colored, high density polyethylene grid or approved equal~~brown chain link fence, a minimum of 42 inches high, supported and tightly secured to steel posts located on maximum 10 foot centers, constructed at the approved location. The safety fencing shall be maintained by the Contractor during the life of the contract and, upon completion and acceptance of the work, shall become the property of the Contractor and shall be removed from the work site.

1.8 INSTALLATION REGULATIONS

The employees of the Contractor will be required to abide by all installation regulations as published by the Commanding Officer. A copy of these regulations can be obtained from the Area/Resident Engineer at the installation. All costs in connection therewith shall be included in the contract price for the work.

1.9 TESTING LABORATORIES

Testing is required to be performed by the Contractor as part of his Quality Control Program to verify contract compliance. This Quality Control Testing is to be conducted by a project or commercial laboratory which has been found adequate and qualified by a Corps of Engineers Division Laboratory Inspection Team.

1.9.1 Approved Testing Laboratories

A composite listing of approved testing laboratories within the Savannah District is available upon request. The Contractor should engage the services of a laboratory contained in the composite list. Contractors may obtain the list by calling (678) 354-0310. Fax requests can be made to number (678) 354-0330.

1.9.2 Other Laboratory Services

The Contractor may engage the services of a laboratory other than those approved by Corps of Engineers District Laboratory Inspection Team if they comply with the following:

a. The Contractor identifies and proposes the unapproved laboratory a minimum of 90 days prior to the start of testing. This time is necessary to allow for scheduling an inspection by a Corps of Engineers District Laboratory team. The time for Government inspection will not be the basis for an increase in the contract performance period.

b. All costs of Government inspection shall be the responsibility of the Contractor.

c. The Contractor may request Government inspection and approval prior to award by forwarding a written request to:

US Army Engineer District, Savannah
Environmental and Materials Unit
200 North Cobb Parkway
Building 400, Suite 404
Marietta, GA 30062

1.10 ENVIRONMENTAL EVALUATION FOR SITE CONTAMINATION - CATEGORY I

1.10.1 Site Evaluation

The job site has been evaluated for potential site contamination. The site is located in a traditionally nonhazardous location. The installation has no reason to suspect contamination.

1.10.2 Contractual Responsibilities of All Parties in the Event of Encounter with Contamination

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If the Contractor encounters materials or conditions which indicate that there may be contamination on the site, the Contractor shall stop all work on the job site and report the discovery of the contaminants to the Contracting Officer's Representative (COR). The Contracting Officer~~COR~~, will issue a written order to the Contractor to resume work or to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of the Government as provided in FAR 52.242-14 - SUSPENSION OF WORK. The Government will be responsible for making an assessment of the contaminated site if this course of action is determined to be appropriate. After the assessment has been completed, the Government reserves the right to the following courses of action:

a. Direct the Contractor to resume work.

b. Clean up the contaminated site prior to directing the Contractor to resume work. The COR will determine whether the cleanup is to be accomplished by others or the Contractor.

c. Relocate the project site.

d. Terminate the contract for the convenience of the Government as provided in FAR 52.249-1 - TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) (SHORT FORM) or FAR 52.249-2 - TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED-PRICE) - ALTERNATE I as applicable.

1.11 CONSTRUCTION SCHEDULE RESTRAINTS - POPE AFB, NC

1.11.1 Occupancy

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~~The work to be performed is to be accomplished in facilities which will be [occupied and in normal usage] [unoccupied and vacant] [unoccupied but furnished] during the course of construction.~~ It is the intent of these provisions to provide for maximum coordination between construction activities pursuant to this contract and concurrent ongoing routine

activities of base personnel. Interference with and inconvenience to the occupants or routine of the facility shall be held to an absolute minimum.

1.11.2 Protection

Contractor is responsible to provide such covering, shields and barricades as are required to protect building occupants, equipment, stores, supplies, etc., from dust, debris, weather intrusion, water, moisture or other cause of damage resulting from construction.

1.11.3 Phasing and Sequence

1.11.3.1 General

In addition to the submittals required by clause SCHEDULES FOR CONSTRUCTION CONTRACTS (see SECTION 00700, FAR 52.236-15) the Contractor shall submit for approval a summary work schedule setting forth schedule dates for initiation and completion of construction in each work area. No work shall be performed prior to approval of this schedule and all work shall be performed in strict adherence thereto. If departures from this schedule appear to be required or desired, the Contracting Officer shall be promptly notified and his approval will be required prior to implementation of said departure(s).

1.11.3.2 Special Work Restraints

None.

1.11.4 Time of Performance

1.11.4.1 Work Requiring Access

All work requiring access to building interiors excluding attics, crawl spaces, etc., and all other work shall be performed between 7:30 a.m. and 4 p.m. (normal working hours for base where project is located) excluding official holidays, unless otherwise indicated or approved by the Contracting Officer. Requests to work during other than these normal hours shall be made in writing at least 36 hours in advance. For example, a request to work on a Saturday shall be submitted no later than Thursday at noon.

1.11.4.2 Utility/Building System Outages

1.23.4.2 Work requiring outages of utilities or building systems will be accomplished during normal working hours in accordance with prior approved schedule(s).

1.11.5 Outages

Contractor's work requiring outages of utility systems or building systems will require 2 weeks' advance notice and will be subject to the approval of the Contracting Officer. Notice shall include type of outage, date, and time outage will commence and estimated duration of outage.

1.11.6 Continuity

All tools, labor and materials required to complete any item of work within a given work area or requiring an outage of any building utility or system shall be available at the site prior to commencement thereof. Once work has

commenced on an item of work, said work shall be continuously and diligently performed to completion and acceptance. Breaks in work to be negotiated with the Contracting Officers Representative if other then Holidays.

1.11.7 Construction/Site Management for Construction on AMC Installations

1.11.7.1 General

The following criteria describes the standards that must be attained on all construction sites at all Air Mobility Command bases. The criteria relates to the appearance of the construction site during the construction cycle, to temporary administration and storage areas and service facilities as needed for execution and completion of the work.

a. Storage Sites: The Contractor shall be given two sites; the primary construction site and a supplemental storage site. The supplemental storage site may not be in close proximity of the construction site but shall be at a site designated on the drawings or by the base civil engineer at the Preconstruction Conference. The primary construction site will be the location of the construction.

A visually acceptable site is required. A clean, well kept site will ensure proper compliance with the safety and environmental requirements of this contract. Contractor's trailers or storage buildings shall be painted in accordance with the base standards and be kept in a good state of repair. Failure of the Contractor to maintain the trailers or storage building in a good condition will be considered sufficient reason to require their removal. The Contractor will be responsible for the security of his property and general housekeeping of the area(s).

b. Site Plan: The Contractor shall submit to the Contracting Officer, for approval prior to the start of work, plans showing the layout and details of all temporary facilities to be used for this contract. The plan must be approved by the base civil engineer. The plan, as a minimum, shall include the location and alignment of the safety and construction fences and location of all site trailers, equipment and material storage areas, construction entrances, trash dumpsters, temporary sanitary facilities, and workers' parking areas. If required, photographs of the site prior to the start of work shall be included with the plan. After completion of the work, the Contractor shall remove the facilities from the site and restore the site to the original condition.

c. Dirt/Dust Control Plan: The Contractor shall submit truck and material handling routes and a plan for controlling dirt, debris, and dust from accumulating on base roadways the Contractor uses for any purpose. The plan, as a minimum, shall identify the subcontractor and equipment to be used for cleaning along the haul route roadways and measures to be used to reduce dirt, dust, and debris from roadways.

1.11.7.2 Contractor's Temporary Facilities

a. Administrative Field Offices and Material Storage Trailers: Contractor's administrative field office and storage trailers shall be in new or like new condition and be the base standard color on the exterior (Federal Standard Color FS-23531 or Sherwin Williams SW-1099, Knubby Wool). Trailers will include "skirts" that will prevent storage of material under the trailers. All trailers and other temporary structures used as field

offices to house personnel or for storage shall be anchored to the ground in accordance with base standards.

b. Material Storage Area:

(1) Supplemental Storage Area: The Contractor will use this for storage of items not immediately required at the construction site. Contractors will be responsible for the security of their property and general housekeeping of the area.

(2) Primary Storage Area: The storage at the site will be limited to the materials that are needed to be used within 2 weeks. The storage area will be enclosed by a construction fence as described in paragraph Construction Safety Fence.

(3) Dumpsters: Dumpsters shall be equipped with a secure cover, painted Federal Standard Color FS-20059 or Sherwin Williams SW-1049, Belgian Chocolate, and be free of graffiti. The cover shall be closed at all times, except when being loaded with trash and debris. Dumpsters will be located behind the construction fence or out of the public view. Site dumpsters shall be emptied at least a once a week or as needed to keep the site free of debris and trash.

(4) Trash Containers: The trash containers shall be 208 liters (55 gallons) in capacity, painted Federal Standard Color FS-20059 or Sherwin Williams 1049 and free of graffiti. The trash container will be located behind the construction fence or out of the public view. Trash containers shall be emptied at least once a day. The number of trash containers required shall be as needed to keep the site clean as determined by the Contracting Officer.

(5) Temporary Sanitation Facilities: All temporary sewer/sanitation facilities shall be self-contained units with both urinals and stool capabilities. The units shall be sufficiently ventilated to control odors and fumes and should be emptied and cleaned at least a every week or more often if required by the Contracting Officer. The doors should be self-closing. the exterior of the unit shall be Federal Standard Color FS-23531 or Sherwin Williams SW-1099, Knubby Wool. The facility will be located behind the construction fence or out of the public view.

(6) Construction and Safety Fence: The project work area and Contractor lay-down area shall be enclosed by a 1.8 m (6-foot) chain link fence with brown, UV light-resistant, plastic fabric mesh netting (similar to tennis court screening) and gates. Upon completion and acceptance of the work, the construction fence shall be removed. Chain link fencing and gates shall be installed in accordance with manufacturer's recommendations.
*5
The Contractor shall provide a temporary safety fence with gates and warning signs at the construction site prior to the start of work to protect members of the pubic from construction activities. The safety fence will enclose those areas not within the construction fence. The construction fence may be used in lieu of a safety fence. The safety fence shall be ~~dark~~ brown ~~color (or bright orange where it protects excavated areas), high density polyethylene grid or approved equal~~chain link fence, a minimum of ~~1.1m (432~~42 inches~~)~~ high, supported and tightly secured to steel posts located on minimum ~~3 m (~~10-foot~~)~~ centers. The safety fence shall be maintained by the Contractor during the life of the contract, and upon completion and

acceptance of the work, shall remain the property of the Contractor and shall be removed from the work site.

(7) Grass Cutting: Any grass (or annual grass) within the construction and storage sites shall be cut to a 2-inch height at least once a week during the growing season. The grass around the fences shall be trimmed at time of grass cutting to keep a neat appearance. If a construction or safety fence is not used for a specific reason approved by the base civil engineering representative then any grass or annual weeds within the construction area shall be maintained in a similar fashion as previously described. Grass or weeds growing on stockpiled earth shall be maintained as described above.

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1.12 ~~COLOR BOARDS~~DELETED

~~Five sets of color boards shall be submitted, in addition to samples required elsewhere. Such submittals shall be made not later than 60 days prior to approval date required to achieve compliance with approved project schedule. Each set of boards shall include samples of colors and finishes of all exterior and interior building surfaces such as walls, toilet partitions, floors and ceilings. The samples will be presented on 8-inch by 10-1/2-inch boards (modules) with a maximum spread of 24 inches by 31-1/2 inches for foldouts. The modules shall be designed to fit in a standard looseleaf, three-ring binder. If more space is needed, more than one board per set may be submitted. The Contractor shall certify that he has reviewed the color samples in detail and that they are in strict accordance with the contract drawings and specifications, except as may be otherwise explicitly stated. If multiple material and finish (color) schemes are required, samples shall be identified by scheme and coordinated to room names and numbers shown on the architectural floor plans and room finish and color schedule. Submittal of the color boards shall not relieve the Contractor of the responsibility to submit the samples required by technical specifications.~~

1.13 REQUEST FOR INFORMATION (RFI) SYSTEM

The Government has developed an electronic database, the Request for Information (RFI) System, to track and answer Contractor questions, requests for information and clarifications during construction. The use of the RFI System for all requests (the Contractor's as well as the subcontractors'/suppliers') is a contractual requirement for this project. The Contractor will enter the system over the Internet using a WEB browser such as Internet Explorer 5.0 or newer or Netscape 4.7 or newer and any Internet service provider. The Government will provide the Contractor a user identification and password for the system that will only allow the Contractor to enter and view the requests for this project. The Contractor will provide the Government the E-mail address for the individual(s) inputting into the system in order that E-mail messages can be sent from the Government to the Contractor indicating a response to the request. The Government will provide instructions in the use of the RFI system. The Contractor must fill in seven fields in the Contractor Data portion of the RFI form, which include Date Required, Priority, Short Description, Problem Description, Recommended Action, Cost, and Time. The Government will be notified through an E-mail message that the Contractor has entered a request into the system. When the Government has answered the request, an E-mail message will be sent informing the Contractor that the answer to the request is in the system. The Contractor will enter the system to retrieve the

answer using the same procedure to enter the question. The RFI System assigns a unique number to each request. The Contractor will not be reimbursed separately for the required use of this system. The Contractor shall include any costs associated with the use of this system into their bid.

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1.14 ~~PROGRESS PHOTOGRAPHS~~DELETED

~~The Contractor shall, during the progress of the project, furnish the Contracting Officer progress photographs and color slides to depict progress of construction. The photographic work shall be performed by a qualified, established, commercial photographer. The photographs and slides shall be taken between the 1st and 5th day of each month and be delivered to the Contracting Officer not later than the 20th day of the same month taken. The photographs and slides shall be taken from not less than six positions for each month as selected by the Contracting Officer. They shall show, inasmuch as practicable, work accomplished during the previous month. The photographs shall be 8-inch by 10-inch color glossy prints and the slides 35 millimeter color slides. Each photograph shall be identified showing date made, contract title and number and a brief description of work depicted and shall be sequentially numbered. The identifying data shall be placed on the back of the prints. Slides shall have a number placed on the frame corresponding to the appropriate identified print, the name of the project, the date and a brief description of work depicted. No identifying data shall appear on the face of prints or in the viewing area of slides. One copy of each photograph and the corresponding negative and slide shall be furnished to the Contracting Officer by the time stipulated above. No separate payment will be made for these services and all costs in connection therewith shall be considered incidental to costs of the overall project.~~

1.15 CLEANUP

Construction debris, waste materials, packaging material and the like shall be removed from the work site daily. Any dirt or mud which is tracked onto paved or surfaced roadways shall be cleaned away. Materials resulting from demolition activities which are salvageable shall be stored within the fenced area described above or at the supplemental storage area. Stored material not in trailers, whether new or salvaged, shall be neatly stacked when stored.

1.16 RESTORATION OF STORAGE AREA

Upon completion of the project and after removal of trailers, materials, and equipment from within the fenced area, the fence shall be removed and will become the property of the Contractor. Areas used by the Contractor for the storage of equipment or material, or other use, shall be restored to the original or better condition. Gravel used to traverse grassed areas shall be removed and the area restored to its original condition, including top soil and seeding as necessary.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

-- End of Section --

UFGS-01780A/S (May 2002)

SECTION 01780A

CLOSEOUT SUBMITTALS
05/02

PART 1 GENERAL

1.1 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

As-Built Drawings; G

Drawings showing final as-built conditions of the project. The final CADD as-built drawings shall consist of one set of electronic CADD drawing files in the specified format, two sets of black-line prints, and one set of the approved working as-built drawings.

SD-03 Product Data

As-Built Record of Equipment and Materials; G

Two copies of the record listing the as-built materials and equipment incorporated into the construction of the project.

Warranty Management Plan; G

Two sets of the warranty management plan containing information relevant to the warranty of materials and equipment incorporated into the construction project, including the starting date of warranty of construction. The Contractor shall furnish with each warranty the name, address, and telephone number of each of the guarantor's representatives nearest to the project location.

Warranty Tags

Two record copies of the warranty tags showing the layout and design.

Final Cleaning

Two copies of the listing of completed final clean-up items.

1.2 PROJECT RECORD DOCUMENTS

1.2.1 As-Built Drawings

This paragraph covers as-built drawings complete, as a requirement of the contract. The terms "drawings," "contract drawings," "drawing files," "working as-built drawings" and "final as-built drawings" refer to contract drawings which are revised to be used for final as-built drawings.

1.2.1.1 Government Furnished Materials

Two sets of paper drawings revised to reflect all bid amendments will be provided by the Government at the preconstruction conference for markup of as-built conditions. Electronic CADD files in Microstation format will be provided by the Government at the preconstruction conference for updating CADD file as-built drawings.

1.2.1.2 Working As-Built and Final As-Built Drawings

The Contractor shall revise two sets of paper drawings by red-line process to show the as-built conditions during the prosecution of the project. These working as-built marked drawings shall be kept current on a weekly basis and at least one set shall be available on the jobsite at all times. Changes from the contract plans which are made in the work or additional information which might be uncovered in the course of construction shall be accurately and neatly recorded as they occur by means of details and notes. Final as-built drawings shall be prepared after the completion of each definable feature of work as listed in the Contractor Quality Control Plan (Foundations, Utilities, Structural Steel, etc., as appropriate for the project). The working as-built marked prints and final as-built drawings will be jointly reviewed for accuracy and completeness by the Contracting Officer and the Contractor prior to submission of each monthly pay estimate. If the Contractor fails to maintain the working and final as-built drawings as specified herein, the Contracting Officer will deduct from the monthly progress payment an amount representing the estimated cost of maintaining the as-built drawings. This monthly deduction will continue until an agreement can be reached between the Contracting Officer and the Contractor regarding the accuracy and completeness of updated drawings. The working and final as-built drawings shall show, but shall not be limited to, the following information:

a. The actual location, kinds and sizes of all sub-surface utility lines. In order that the location of these lines and appurtenances may be determined in the event the surface openings or indicators become covered over or obscured, the as-built drawings shall show, by offset dimensions to two permanently fixed surface features, the end of each run including each change in direction. Valves, splice boxes and similar appurtenances shall be located by dimensioning along the utility run from a reference point. The average depth below the surface of each run shall also be recorded.

b. The location and dimensions of any changes within the building structure.

c. Correct grade, elevations, cross section, or alignment of roads, earthwork, structures or utilities if any changes were made from contract plans.

d. Changes in details of design or additional information obtained from working drawings specified to be prepared and/or furnished by the

Contractor; including but not limited to fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment foundations, etc.

e. The topography, invert elevations and grades of drainage installed or affected as part of the project construction.

f. Changes or modifications which result from the final inspection.

g. Where contract drawings or specifications present options, only the option selected for construction shall be shown on the final as-built prints.

h. If borrow material for this project is from sources on Government property, or if Government property is used as a spoil area, the Contractor shall furnish a contour map of the final borrow pit/spoil area elevations.

i. Systems designed or enhanced by the Contractor, such as HVAC controls, fire alarm, fire sprinkler, and irrigation systems.

j. Modifications (change order price shall include the Contractor's cost to change working and final as-built drawings to reflect modifications) and compliance with the following procedures.

(1) Directions in the modification for posting descriptive changes shall be followed.

(2) A Modification Circle shall be placed at the location of each deletion.

(3) For new details or sections which are added to a drawing, a Modification Circle shall be placed by the detail or section title.

(4) For minor changes, a Modification Circle shall be placed by the area changed on the drawing (each location).

(5) For major changes to a drawing, a Modification Circle shall be placed by the title of the affected plan, section, or detail at each location.

(6) For changes to schedules or drawings, a Modification Circle shall be placed either by the schedule heading or by the change in the schedule.

(7) The Modification Circle size shall be 1/2 inch diameter unless the area where the circle is to be placed is crowded. Smaller size circle shall be used for crowded areas.

1.2.1.3 Drawing Preparation

The as-built drawings shall be modified as may be necessary to correctly show the features of the project as it has been constructed by bringing the contract set into agreement with approved working as-built prints, and adding such additional drawings as may be necessary. These working as-built marked prints shall be neat, legible and accurate. These drawings are part of the permanent records of this project and shall be returned to the Contracting Officer after approval by the Government. Any drawings damaged

or lost by the Contractor shall be satisfactorily replaced by the Contractor at no expense to the Government.

1.2.1.4 Computer Aided Design and Drafting (CADD) Drawings

Only personnel proficient in the preparation of CADD drawings shall be employed to modify the contract drawings or prepare additional new drawings. Additions and corrections to the contract drawings shall be equal in quality and detail to that of the originals. Line colors, line weights, lettering, layering conventions, and symbols shall be the same as the original line colors, line weights, lettering, layering conventions, and symbols. If additional drawings are required, they shall be prepared using the specified electronic file format applying the same graphic standards specified for original drawings. The title block and drawing border to be used for any new final as-built drawings shall be identical to that used on the contract drawings. Additions and corrections to the contract drawings shall be accomplished using CADD files. The Contractor will be furnished "as-designed" drawings in Microstation J format compatible with a Windows NT 2000 operating system or Windows XP. The electronic files will be supplied on compact disc, read-only memory (CD-ROM). The Contractor shall be responsible for providing all program files and hardware necessary to prepare final as-built drawings. The Contracting Officer will review final as-built drawings for accuracy and the Contractor shall make required corrections, changes, additions, and deletions.

a. Corrections shall be made in the "Model" files rather than the individual sheet file when model files are referenced. Once the model file is corrected the individual sheet file will automatically be corrected.

b. The contractor shall modify the drawings at construction completion to indicate the as-built character of all site components:

(1) These drawings will conform to the level symbology of the model files and be free of any superfluous construction detail. The intent is to show As-Built conditions and should not include any components that are not as-built, i.e., if the pre-work map showed a water line 3' from a curb and was constructed 4' from the curb, the as-built map will show only the final location of the water line.

(2) The grading model file will clearly indicate the final grade of the site at a contour interval not greater than one foot.

(3) The final inverts of all utilities will be shown on the model files. Where utilities were installed which follow the surface of the ground, the depth of that utility will be indicated. Where there is a variance in the depth of the utility, the break point and character of variance will be shown.

(4) The model files will clearly identify all utilities installed with a trace wire and/or cathodic protection.

(5) The model files will show a minimum of two tie points for all subsurface control devices to include valves, manholes, handholes, switches, etc. The tie-points will be directed such that they form a triangle with no inclusive angle less than 30 or greater than 150. No leg of the triangle will be longer than 100'. Valid tie-

points will run to identifiable above ground objects such as poles or building corners as is in keeping of good survey practice for the recovery of monuments.

(6) The model files will clearly indicate the entry point and character of all utilities running to or from structures.

c. When final revisions have been completed, the cover sheet drawing shall show the wording "RECORD DRAWING AS-BUILT" followed by the name of the Contractor in letters at least 3/16 inch high. All other contract drawings shall be marked either "AS-Built" drawing denoting no revisions on the sheet or "Revised As-Built" denoting one or more revisions. Original contract drawings shall be dated in the revision block.

d. Within 10 days for contracts less than $5 million or 20 days for contracts $5 million and above after Government approval of all of the working as-built drawings for a phase of work, the Contractor shall prepare the final CADD as-built drawings for that phase of work and submit two sets of blue-lined prints of these drawings for Government review and approval. The Government will promptly return one set of prints annotated with any necessary corrections. Within 7 days for contracts less than $5 million or 10 days for contracts $5 million and above the Contractor shall revise the CADD files accordingly at no additional cost and submit one set of final prints for the completed phase of work to the Government. Within 10 days for contracts less than $5 million or 20 days for contracts $5 million and above of substantial completion of all phases of work, the Contractor shall submit the final as-built drawing package for the entire project. The submittal shall consist of one set of electronic files on compact disc, read-only memory (CD-ROM), two sets of blue-line prints and one set of the approved working as-built drawings. They shall be complete in all details and identical in form and function to the contract drawing files supplied by the Government. Any transactions or adjustments necessary to accomplish this is the responsibility of the Contractor. The Government reserves the right to reject any drawing files it deems incompatible with the customer's CADD system. Paper prints, drawing files and storage media submitted will become the property of the Government upon final approval. Failure to submit final as-built drawing files and marked prints as specified shall be cause for withholding any payment due the Contractor under this contract. Approval and acceptance of final as-built drawings shall be accomplished before final payment is made to the Contractor.

1.2.1.5 Omitted

1.2.1.6 Payment

No separate payment will be made for as-built drawings required under this contract, and all costs accrued in connection with such drawings shall be considered a subsidiary obligation of the Contractor.

1.2.2 As-Built Record of Equipment and Materials

The Contractor shall furnish one copy of preliminary record of equipment and materials used on the project 15 days prior to final inspection. This preliminary submittal will be reviewed and returned 2 days after final inspection with Government comments. Two sets of final record of equipment and materials shall be submitted 10 days after final inspection. The

designations shall be keyed to the related area depicted on the contract drawings. The record shall list the following data:

RECORD OF DESIGNATED EQUIPMENT AND MATERIALS DATA

Description	Specification Section	Manufacturer and Catalog, Model, and Serial Number	Composition and Size	Where Used

1.2.3 Final Approved Shop Drawings

The Contractor shall furnish final approved project shop drawings 30 days after transfer of the completed facility.

1.2.4 Construction Contract Specifications

The Contractor shall furnish final as-built construction contract specifications, including modifications thereto, 30 days after transfer of the completed facility.

1.2.5 Real Property Equipment

The Contractor shall furnish a list of installed equipment furnished under this contract. The list shall include all information usually listed on manufacturer's name plate. The "EQUIPMENT-IN-PLACE LIST" shall include, as applicable, the following for each piece of equipment installed: description of item, location (by room number), model number, serial number, capacity, name and address of manufacturer, name and address of equipment supplier, condition, spare parts list, manufacturer's catalog, and warranty. A draft list shall be furnished at time of transfer. The final list shall be furnished 30 days after transfer of the completed facility.

1.3 WARRANTY MANAGEMENT

1.3.1 Warranty Management Plan

The Contractor shall develop a warranty management plan which shall contain information relevant to the clause Warranty of Construction in Section 00800. At least 30 days before the planned pre-warranty conference, the Contractor shall submit the warranty management plan for Government approval. The warranty management plan shall include all required actions and documents to assure that the Government receives all warranties to which it is entitled. The plan shall be in narrative form and contain sufficient detail to render it suitable for use by future maintenance and repair personnel, whether tradesmen, or of engineering background, not necessarily familiar with this contract. The term "status" as indicated below shall include due date and whether item has been submitted or was accomplished. Warranty information made available during the construction phase shall be submitted to the Contracting Officer for approval prior to each monthly pay estimate. Approved information shall be assembled in a binder and shall be turned over to the Government upon acceptance of the work. The construction warranty period shall begin on the date of project acceptance and shall continue for the full product warranty period. A joint 4 month and 9 month warranty inspection shall be conducted, measured from time of acceptance, by the Contractor, Contracting Officer and the Customer Representative.

Information contained in the warranty management plan shall include, but shall not be limited to, the following:

a. Roles and responsibilities of all personnel associated with the warranty process, including points of contact and telephone numbers within the organizations of the Contractors, subcontractors, manufacturers or suppliers involved.

b. Listing and status of delivery of all Certificates of Warranty for extended warranty items, to include roofs, HVAC balancing, pumps, motors, transformers, and for all commissioned systems such as fire protection and alarm systems, sprinkler systems, lightning protection systems, etc.

c. A list for each warranted equipment, item, feature of construction or system indicating:

(1) Name of item.
(2) Model and serial numbers.
(3) Location where installed.
(4) Name and phone numbers of manufacturers or suppliers.
(5) Names, addresses and telephone numbers of sources of spare parts.
(6) Warranties and terms of warranty. This shall include one-year overall warranty of construction. Items which have extended warranties shall be indicated with separate warranty expiration dates.
(7) Cross-reference to warranty certificates as applicable.
(8) Starting point and duration of warranty period.
(9) Summary of maintenance procedures required to continue the warranty in force.
(10) Cross-reference to specific pertinent Operation and Maintenance manuals.
(11) Organization, names and phone numbers of persons to call for warranty service.
(12) Typical response time and repair time expected for various warranted equipment.

d. The Contractor's plans for attendance at the 4 and 9 month post-construction warranty inspections conducted by the Government.

e. Procedure and status of tagging of all equipment covered by extended warranties.

f. Copies of instructions to be posted near selected pieces of equipment where operation is critical for warranty and/or safety reasons.

1.3.2 Performance Bond

The Contractor's performance bond shall remain effective throughout the construction period.

a. In the event the Contractor fails to commence and diligently pursue any construction warranty work required, the Contracting Officer will have the work performed by others, and after completion of the work, will charge the remaining construction warranty funds of expenses incurred by the Government while performing the work, including, but not limited to administrative expenses.

b. In the event sufficient funds are not available to cover the construction warranty work performed by the Government at the Contractor's expense, the Contracting Officer will have the right to recoup expenses from the bonding company.

c. Following oral or written notification of required construction warranty repair work, the Contractor shall respond in a timely manner. Written verification will follow oral instructions. Failure of the Contractor to respond will be cause for the Contracting Officer to proceed against the Contractor.

1.3.3 Pre-Warranty Conference

Prior to contract completion, and at a time designated by the Contracting Officer, the Contractor shall meet with the Contracting Officer to develop a mutual understanding with respect to the requirements of this section. Communication procedures for Contractor notification of construction warranty defects, priorities with respect to the type of defect, reasonable time required for Contractor response, and other details deemed necessary by the Contracting Officer for the execution of the construction warranty shall be established/reviewed at this meeting. In connection with these requirements and at the time of the Contractor's quality control completion inspection, the Contractor shall furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue construction warranty work action on behalf of the Contractor. This point of contact will be located within the local service area of the warranted construction, shall be continuously available, and shall be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of its responsibilities in connection with other portions of this provision.

1.3.4 Contractor's Response to Construction Warranty Service Requirements

Following oral or written notification by the Contracting Officer, the Contractor shall respond to construction warranty service requirements in accordance with the "Construction Warranty Service Priority List" and the three categories of priorities listed below. The Contractor shall submit a report on any warranty item that has been repaired during the warranty period. The report shall include the cause of the problem, date reported, corrective action taken, and when the repair was completed. If the Contractor does not perform the construction warranty within the timeframes specified, the Government will perform the work and backcharge the construction warranty payment item established.

a. First Priority Code 1. Perform onsite inspection to evaluate situation, and determine course of action within 4 hours, initiate work within 6 hours and work continuously to completion or relief.

b. Second Priority Code 2. Perform onsite inspection to evaluate situation, and determine course of action within 8 hours, initiate work within 24 hours and work continuously to completion or relief.

c. Third Priority Code 3. All other work to be initiated within 3 work days and work continuously to completion or relief.

d. The "Construction Warranty Service Priority List" is as follows:

Code 1-Air Conditioning Systems
(1) Recreational support.
(2) Air conditioning leak in part of building, if causing damage.
(3) Air conditioning system not cooling properly.

Code 1-Doors
(1) Overhead doors not operational, causing a security, fire, or safety problem.
(2) Interior, exterior personnel doors or hardware, not functioning properly, causing a security, fire, or safety problem.

Code 3-Doors
(1) Overhead doors not operational.
(2) Interior/exterior personnel doors or hardware not functioning properly.

Code 1-Electrical
(1) Power failure (entire area or any building operational after 1600 hours).
(2) Security lights
(3) Smoke detectors

Code 2-Electrical
(1) Power failure (no power to a room or part of building).
(2) Receptacle and lights (in a room or part of building).

Code 3-Electrical
Street lights.

Code 1-Gas
(1) Leaks and breaks.
(2) No gas to family housing unit or cantonment area.

Code 1-Heat
(1). Area power failure affecting heat.
(2). Heater in unit not working.

Code 2-Kitchen Equipment
(1) Dishwasher not operating properly.
(2) All other equipment hampering preparation of a meal.

Code 1-Plumbing
(1) Hot water heater failure.
(2) Leaking water supply pipes.

Code 2-Plumbing
(1) Flush valves not operating properly.
(2) Fixture drain, supply line to commode, or any water pipe leaking.
(3) Commode leaking at base.

Code 3 -Plumbing
Leaky faucets.

Code 3-Interior
(1) Floors damaged.

(2) Paint chipping or peeling.
(3) Casework.

Code 1-Roof Leaks
Temporary repairs will be made where major damage to property is occurring.

Code 2-Roof Leaks
Where major damage to property is not occurring, check for location of leak during rain and complete repairs on a Code 2 basis.

Code 2-Water (Exterior)
No water to facility.

Code 2-Water (Hot)
No hot water in portion of building listed.

Code 3-All other work not listed above.

1.3.5 Warranty Tags

At the time of installation, each warranted item shall be tagged with a durable, oil and water resistant tag approved by the Contracting Officer. Each tag shall be attached with a copper wire and shall be sprayed with a silicone waterproof coating. The date of acceptance and the QC signature shall remain blank until project is accepted for beneficial occupancy. The tag shall show the following information.

a. Type of product/material_____.

b. Model number_____.

c. Serial number_____.

d. Contract number_____.

e. Warranty period_____from_____to_____.

f. Inspector's signature_____.

g. Construction Contractor_____.

Address_____.

Telephone number_____.

h. Warranty contact_____.

Address_____.

Telephone number_____.

i. Warranty response time priority code_____.

j. WARNING - PROJECT PERSONNEL TO PERFORM ONLY OPERATIONAL MAINTENANCE DURING THE WARRANTY PERIOD.

1.4 MECHANICAL TESTING, ADJUSTING, BALANCING, AND COMMISSIONING

Prior to final inspection and transfer of the completed facility; all reports, statements, certificates, and completed checklists for testing, adjusting, balancing, and commissioning of mechanical systems shall be submitted to and approved by the Contracting Officer as specified in applicable technical specification sections.

1.5 OPERATION AND MAINTENANCE MANUALS

Operation manuals and maintenance manuals shall be submitted as specified. Operation manuals and maintenance manuals provided in a common volume shall be clearly differentiated and shall be separately indexed.

1.6 FINAL CLEANING

The premises shall be left broom clean. Stains, foreign substances, and temporary labels shall be removed from surfaces. Carpet and soft surfaces shall be vacuumed. Equipment and fixtures shall be cleaned to a sanitary condition. Filters of operating equipment shall be replaced. Debris shall be removed from roofs, drainage systems, gutters, downspouts and boot wash areas. Paved areas shall be swept and landscaped areas shall be raked clean. The site shall have waste, surplus materials, and rubbish removed. The project area shall have temporary structures, barricades, project signs, fences and construction facilities removed. A list of completed clean-up items shall be submitted on the day of final inspection.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

-- End of Section --

UFGS-01781 (December 2001)

SECTION 01781

OPERATION AND MAINTENANCE DATA
12/01

PART 1 GENERAL

1.1 SUBMISSION OF OPERATION AND MAINTENANCE DATA

Submit Operation and Maintenance (O&M) Data specifically applicable to this contract and a complete and concise depiction of the provided equipment, product, or system. Organize and present information in sufficient detail to clearly explain O&M requirements at the system, equipment, component, and subassembly level. Include an index preceding each submittal. Submit in accordance with this section and Section 01330, "Submittal Procedures."

1.1.1 Package Quality

Documents must be fully legible. Poor quality copies and material with hole punches obliterating the text or drawings will not be accepted.

1.1.2 Package Content

Data package content shall be as shown in the paragraph titled "Schedule of Operation and Maintenance Data Packages." Comply with the data package requirements specified in the individual technical sections, including the content of the packages and addressing each product, component, and system designated for data package submission.

1.1.3 Changes to Submittals

Manufacturer-originated changes or revisions to submitted data shall be furnished by the Contractor if a component of an item is so affected subsequent to acceptance of the O&M Data. Changes, additions, or revisions required by the Contracting Officer for final acceptance of submitted data, shall be submitted by the Contractor within 30 calendar days of the notification of this change requirement.

1.2 TYPES OF INFORMATION REQUIRED IN O&M DATA PACKAGES

1.2.1 Operating Instructions

Include specific instructions, procedures, and illustrations for the following phases of operation:

1.2.1.1 Safety Precautions

List personnel hazards and equipment or product safety precautions for all operating conditions.

1.2.1.2 Operator Prestart

Include procedures required to set up and prepare each system for use.

1.2.1.3 Startup, Shutdown, and Post-Shutdown Procedures

Provide narrative description for Startup, Shutdown and Post-shutdown operating procedures including the control sequence for each procedure.

1.2.1.4 Normal Operations

Provide narrative description of Normal Operating Procedures. Include Control Diagrams with data to explain operation and control of systems and specific equipment.

1.2.1.5 Emergency Operations

Include Emergency Procedures for equipment malfunctions to permit a short period of continued operation or to shut down the equipment to prevent further damage to systems and equipment. Include Emergency Shutdown Instructions for fire, explosion, spills, or other foreseeable contingencies. Provide guidance and procedures for emergency operation of all utility systems including required valve positions, valve locations and zones or portions of systems controlled.

1.2.1.6 Operator Service Requirements

Include instructions for services to be performed by the operator such as lubrication, adjustment, inspection, and recording gage readings.

1.2.1.7 Environmental Conditions

Include a list of Environmental Conditions (temperature, humidity, and other relevant data) that are best suited for the operation of each product, component or system. Describe conditions under which the item equipment should not be allowed to run.

1.2.2 Preventive Maintenance

Include the following information for preventive and scheduled maintenance to minimize corrective maintenance and repair.

1.2.2.1 Lubrication Data

Include preventative maintenance lubrication data, in addition to instructions for lubrication provided under paragraph titled "Operator Service Requirements":

a. A table showing recommended lubricants for specific temperature ranges and applications.

b. Charts with a schematic diagram of the equipment showing lubrication points, recommended types and grades of lubricants, and capacities.

c. A Lubrication Schedule showing service interval frequency.

1.2.2.2 Preventive Maintenance Plan and Schedule

Include manufacturer's schedule for routine preventive maintenance, inspections, tests and adjustments required to ensure proper and economical

operation and to minimize corrective maintenance. Provide manufacturer's projection of preventive maintenance work-hours on a daily, weekly, monthly, and annual basis including craft requirements by type of craft. For periodic calibrations, provide manufacturer's specified frequency and procedures for each separate operation.

1.2.3 Corrective Maintenance (Repair)

Include manufacturer's recommended procedures and instructions for correcting problems and making repairs.

1.2.3.1 Troubleshooting Guides and Diagnostic Techniques

Include step-by-step procedures to promptly isolate the cause of typical malfunctions. Describe clearly why the checkout is performed and what conditions are to be sought. Identify tests or inspections and test equipment required to determine whether parts and equipment may be reused or require replacement.

1.2.3.2 Wiring Diagrams and Control Diagrams

Wiring diagrams and control diagrams shall be point-to-point drawings of wiring and control circuits including factory-field interfaces. Provide a complete and accurate depiction of the actual job specific wiring and control work. On diagrams, number electrical and electronic wiring and pneumatic control tubing and the terminals for each type, identically to actual installation configuration and numbering.

1.2.3.3 Maintenance and Repair Procedures

Include instructions and alist of tools required to repair or restore the product or equipment to proper condition or operating standards.

1.2.3.4 Removal and Replacement Instructions

Include step-by-step procedures and a list required tools and supplies for removal, replacement, disassembly, and assembly of components, assemblies, subassemblies, accessories, and attachments. Provide tolerances, dimensions, settings and adjustments required. Instructions shall include a combination of text and illustrations.

1.2.3.5 Spare Parts and Supply Lists

Include lists of spare parts and supplies required for maintenance and repair to ensure continued service or operation without unreasonable delays. Special consideration is required for facilities at remote locations. List spare parts and supplies that have a long lead-time to obtain.

1.2.4 Corrective Maintenance Work-Hours

Include manufacturer's projection of corrective maintenance work-hours including requirements by type of craft. Corrective maintenance that requires completion or participation of the equipment manufacturer shall be identified and tabulated separately.

1.2.5 Appendices

Provide information required below and information not specified in the preceding paragraphs but pertinent to the maintenance or operation of the product or equipment. Include the following:

1.2.6 Parts Identification

Provide identification and coverage for all parts of each component, assembly, subassembly, and accessory of the end items subject to replacement. Include special hardware requirements, such as requirement to use high-strength bolts and nuts. Identify parts by make, model, serial number, and source of supply to allow reordering without further identification. Provide clear and legible illustrations, drawings, and exploded views to enable easy identification of the items. When illustrations omit the part numbers and description, both the illustrations and separate listing shall show the index, reference, or key number that will cross-reference the illustrated part to the listed part. Parts shown in the listings shall be grouped by components, assemblies, and subassemblies in accordance with the manufacturer's standard practice. Parts data may cover more than one model or series of equipment, components, assemblies, subassemblies, attachments, or accessories, such as typically shown in a master parts catalog

1.2.6.1 Warranty Information

List and explain the various warranties and include the servicing and technical precautions prescribed by the manufacturers or contract documents in order to keep warranties in force. Include warranty information for primary components such as the compressor of air conditioning system.

1.2.6.2 Personnel Training Requirements

Provide information available from the manufacturers that is needed for use in training designated personnel to properly operate and maintain the equipment and systems.

1.2.6.3 Testing Equipment and Special Tool Information

Include information on test equipment required to perform specified tests and on special tools needed for the operation, maintenance, and repair of components.

1.2.6.4 Contractor Information

Provide a list that includes the name, address, and telephone number of the General Contractor and each Subcontractor who installed the product or equipment, or system. For each item, also provide the name address and telephone number of the manufacturer's representative and service organization most convenient to the project site. Provide the name, address, and telephone number of the product, equipment, and system manufacturers.

1.3 SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES

Furnish the O&M data packages specified in individual technical sections. The required information for each O&M data package is as follows:

1.3.1 Data Package 1

a. Safety precautions

b. Maintenance and repair procedures

c. Warranty information

d. Contractor information

e. Spare parts and supply list

1.3.2 Data Package 2

a. Safety precautions

b. Normal operations

c. Environmental conditions

d. Lubrication data

e. Preventive maintenance plan and schedule

f. Maintenance and repair procedures

g. Removal and replacement instructions

h. Spare parts and supply list

i. Parts identification

j. Warranty information

k. Contractor information

1.3.3 Data Package 3

a. Safety precautions

b. Normal operations

c. Emergency operations

d. Environmental conditions

e. Lubrication data

f. Preventive maintenance plan and schedule

g. Troubleshooting guides and diagnostic techniques

h. Wiring diagrams and control diagrams

i. Maintenance and repair procedures

j. Removal and replacement instructions

k. Spare parts and supply list

l. Parts identification

m. Warranty information

n. Testing equipment and special tool information

o. Contractor information

1.3.4 Data Package 4

a. Safety precautions

b. Operator prestart

c. Startup, shutdown, and post-shutdown procedures

d. Normal operations

e. Emergency operations

f. Operator service requirements

g. Environmental conditions

h. Lubrication data

i. Preventive maintenance plan and schedule

j. Troubleshooting guides and diagnostic techniques

k. Wiring diagrams and control diagrams

l. Maintenance and repair procedures

m. Removal and replacement instructions

n. Spare parts and supply list

o. Corrective maintenance man-hours

p. Parts identification

q. Warranty information

r. Personnel training requirements

s. Testing equipment and special tool information

t. Contractor information

1.3.5 Data Package 5

a. Safety precautions

b. Operator prestart

c. Start-up, shutdown, and post-shutdown procedures

d. Normal operations

e. Environmental conditions

f. Preventive maintenance plan and schedule

g. Troubleshooting guides and diagnostic techniques

h. Wiring and control diagrams

i. Maintenance and repair procedures

j. Spare parts and supply list

k. Testing equipments and special tools

l. Warranty information

m. Contractor information

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

Not used.

-- End of Section --

SAVH-02013 (04/00)

SECTION 02013

ENVIRONMENTAL PROTECTION DURING CONSTRUCTION
04/00

PART 1 GENERAL

1.1 SCOPE

This section covers prevention of environmental pollution and damage to the environment as the result of construction operations under this contract and for those measures set forth in other technical provisions of these specifications. For the purpose of this specification, environmental pollution and damage to the environment is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic, cultural, and/or historical purposes. The control of environmental pollution and damage requires consideration of the potential effects of an action upon air, water, and land resources, and includes management of visual aesthetics, natural and cultural resources, noise levels, solid waste, hazardous waste, toxic waste, radiant energy, and radioactive materials, as well as other pollutants.

1.2 QUALITY CONTROL

The Contractor shall establish and maintain quality control for environmental protection of all items set forth herein. The Contractor shall record on daily reports any problems in complying with laws, regulations, ordinances, and corrective action taken. The Contractor shall immediately inform the Contracting Officer of any environmental problem.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Environmental Protection Plan; G, RE.

The Contractor shall submit an Environmental Protection Plan which must be approved by the Contracting Officer with input from the PWBC Environmental/Natural Resources Division prior to construction. The plan shall include, but is not limited to, the following:

a. Legal Requirements: A list of Federal, State, and local laws, regulations, and permits concerning environmental protection and pollution control and abatement that are applicable to the Contractor's proposed operations and the requirements imposed by those laws, regulations, and permits shall be included. Whenever there is a conflict between Federal,

State, or local laws, regulations, and permit requirements, the more restrictive provision shall apply.

b. Protection of Features: The Contractor shall prepare a listing of methods to protect resources needing preservation within authorized work areas. These include natural vegetation such as trees, shrubs, vines, grasses, and ground cover; landscape features; air and water quality; fish and wildlife habitat; endangered species; and soil conservation, as well as historical, archaeological, and cultural resources.

c. Environmental Protection Procedures: Procedures to be implemented to provide the required environmental protection and to comply with the applicable laws and regulations shall be included. The Contractor shall set out the procedures to be followed to correct pollution of the environment due to accident, natural causes, or failure to follow the procedures set out in accordance with the Environmental Protection Plan.

Environmental Monitoring Management Plan; G, RE.

The Environmental Protection Plan shall include plans for monitoring environmental compliance for the job site, including land, water, air, noise, hazardous and toxic wastes, and materials and solid waste disposal.

Protection of Land Resources; G, RE.

Plan of protection for land resources as described in paragraph Protection of Land Resources of this specification shall be included.

Protection of Surface and Ground Water; G, RE.

Methods of protecting surface and ground water during construction activities as described in paragraph Protection of Water Resources of this specification shall be included.

Protection of Air Resources; G, RE.

Methods for protecting air resources as described in paragraph Protection of Air Resources of this specification shall be included.

SD-05 Design Data

Design Drawings; G, RE.

Drawings showing locations of any proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, temporary fuel tanks, sanitary facilities, and stockpiles of excess or spoil materials shall be included.

1.4 IMPLEMENTATION

The Contractor shall submit, in writing, the Environmental Protection Plan to the Contracting Officer within 10 days after receipt of Notice to Proceed. The Contracting Officer shall forward the Contractor's plan to the PWBC Environmental/Natural Resources Division for approval. Approval of the Contractor's plan will not relieve the Contractor of his responsibility for adequate and continuing control of pollutants and other environmental protection measures.

1.5 SUBCONTRACTORS

Assurance that subcontractors comply with the environmental protection requirements of this section will be the responsibility of the prime Contractor.

1.6 NOTIFICATION

The Contracting Officer will notify the Contractor in writing of any observed noncompliance with the aforementioned Federal, State, or local laws or regulations, permits, and other elements of the Contractor's Environmental Protection Plan. The Contractor shall, after receipt of such notice, inform the Contracting Officer of proposed corrective action and implement such action as approved by the PWBC Environmental/Natural Resources Division. If the Contractor fails to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions shall be granted or costs or damages allowed to the Contractor for any such suspension.

1.7 PROTECTION OF ENVIRONMENTAL RESOURCES

The environmental resources within the project boundaries and those affected outside the limits of permanent work under this contract shall be protected during the entire period of this contract. The Contractor shall confine his activities to areas defined by the drawings and specifications. Environmental protection shall be as stated in the following subparagraphs:

1.7.1 Protection of Land Resources

Prior to the start of any construction, the Contractor shall identify all land resources to be preserved within the Contractor's work area. The Contractor shall not remove, cut, deface, injure, or destroy land resources, including trees, shrubs, vines, grasses, topsoil, and landforms, without special permission from the Contracting Officer. No ropes, cables, or guys shall be fastened or attached to any trees for anchorage unless specifically authorized. Where such special emergency use is permitted, the Contractor shall provide effective protection for land and vegetation resources at all times.

1.7.1.1 Forest Resources

Merchantable timber and pine straw shall neither be cut nor removed from the construction site until it has been assessed by the Savannah District Timber Harvest office in conjunction with PWBC Natural Resources Branch. The Savannah District Timber Harvest office will be given adequate time to arrange for the sale and removal of timber and pine straw. In the event that the Savannah District and Natural Resources Branch determine the amount or quality of timber or pine straw is not merchantable, they will inform the Contracting Officer. The Contracting Officer will authorize the Contractor to remove forest resources which are in the footprint of construction.

1.7.1.2 Work Area Limits

Prior to any construction, the Contractor shall mark the areas that are not required to accomplish all work to be performed under this contract.

Isolated areas within the general work area which are to be saved and protected shall also be marked or fenced. Monuments and markers shall be protected before construction operations begin. Where construction operations are to be conducted during darkness, the markers shall still remain visible. The Contractor shall convey to his personnel the purpose of marking and/or protection of all necessary objects. Damage to protected areas/objects shall be repaired immediately by the Contractor at no additional cost to the Government.

1.7.1.3 Protection of Landscape

Trees, shrubs, grasses, landforms, and other landscape features indicated and defined on the drawings to be preserved shall be clearly identified by marking, fencing, wrapping, or any other approved techniques.

1.7.1.4 Reduction of Exposure of Unprotected Erodible Soils

Earthwork brought to final grade shall be finished as indicated and specified. Side slopes and back slopes shall be protected as soon as practicable upon completion of rough grading. All earthwork shall be planned and conducted to minimize the duration of exposure of unprotected soils. Except in instances where the constructed feature obscures borrow areas, quarries, and waste material areas, these areas shall not initially be cleared in total. Clearing of such areas shall progress in reasonably sized increments as needed to use the areas as approved by the Contracting Officer.

1.7.1.5 Erosion and Sedimentation Control Plan

When the total area of land disturbed is 1 acre or more in size, an Erosion and Sedimentation Control Plan shall be prepared by the Contractor. The plan will be prepared in accordance with North Carolina Administrative Code, Title 15, Department of Natural and Economic Resources, Chapter 4, Sedimentation Control, January 1978. This plan is to be prepared, approved, and filed prior to the start of any land-disturbing activity. When the area to be disturbed is less than 1 acre, a formal plan will not be required; however, erosion and sedimentation control measures will be incorporated as part of the design.

1.7.1.6 Temporary Protection of Disturbed Areas

Such methods as necessary shall be utilized to effectively prevent erosion and control sedimentation at all times including, but not limited to, the following:

a. Control of Runoff: Runoff from the construction site shall be controlled by construction of diversion ditches, benches, and silt basins; by checking dams and berms to reduce the velocity and divert runoff to protected drainage courses; and by any measures required by area-wide plans approved under Paragraph 208 of the Clean Water Act.

b. Sediment Basins: Sediment from construction areas shall be trapped in temporary or permanent sediment basin in accordance with basin plans shown on the drawings. The basins shall accommodate the runoff of a local 5-year design storm. They shall be constructed as approved by the Contracting Officer to prevent sedimentation of downstream or downslope areas.

1.7.1.7 Disposal of Chemical Waste

The Contractor is responsible for the proper use, storage, and disposal of chemical material and waste in accordance with Fort Bragg Regulation 200-2. The PWBC Environmental/Natural Resources Division has established the following requirements in order for the post to remain in compliance with hazardous waste requirements as established by both State of North Carolina and Federal environmental laws:

a. Compatible Containers: Chemical waste shall be contained and stored in aboveground compatible containers. Hazardous wastes shall not be stored underground. Any release or spill to the environment will be immediately reported to the Contracting Officer, PWBC Fire Department at telephone (910) 396-8112 and to the PWNC Environmental/Natural Resources Division at telephone (910) 396-3341.

b. Recycling: The Contractor is encouraged to provide for recycling of waste through the Defense Reutilization and Marketing Office, Fort Bragg.

c. Chemical Analysis: The Contractor is responsible for obtaining chemical analysis of all chemical waste. All chemical waste shall be disposed of in accordance with Fort Bragg's Waste Analysis Plan. Sampling of suspected hazardous waste is required to determine the hazardous waste characterization of the material. The Contractor is required to notify the Contracting Officer 1 day before the samples are taken. Samples shall be delivered by the Contracting Officer to the PWBC Environmental/Natural Resources Division for transmittal to an independent analytical laboratory. The laboratory shall be listed in the Environmental Protection Plan approved by the Contracting Officer and PWBC Environmental/Natural Resources Division.

d. Nonhazardous Waste: Waste that has been certified as nonhazardous waste may be removed off the project site by the Contractor. This waste shall be disposed of in accordance with all applicable State of North Carolina requirements and U.S. Army Center for Health Promotion and Preventive Medicine (CHPPM) guidance. The Contractor shall address the disposal method and location of the disposal site for each chemical waste in the Environmental Protection Plan for the project.

e. Hazardous Waste: The Contractor may not normally remove hazardous waste from Fort Bragg. Removal shall be performed by a licensed hazardous waste firm. The hazardous waste contractor shall prepare the hazardous waste manifest form for signature by the Environmental/Natural Resources Division before each shipment of hazardous waste. Refer to Fort Bragg Regulation 200-2.

f. Labeling: Each container of hazardous waste shall be immediately labeled with a hazardous waste label and marked with the current date once any hazardous waste is put in the container. The Contractor shall keep the containers closed and inspect them weekly for signs of rust or deterioration. Inspection results shall be documented. Additionally, the U.S. Department of Transportation shipping name shall be marked on each container before it is removed from Fort Bragg. Refer to Fort Bragg Regulation 200-2.

g. Training: The Contractor shall ensure that all of his employees who handle hazardous waste are trained in the management requirements for

hazardous waste. Two hours of on-the-job training by the Environmental/Natural Resources Division will be scheduled for the first Wednesday of each month. All Contractor employees physically handling or managing waste media shall receive this training. Refer to Fort Bragg Regulation 200-2.

1.7.1.8 Disposal of Discarded Materials

Discarded materials, other than those which can be included in the solid waste category, will be handled as directed by the Contracting Officer. Construction and demolition debris shall be disposed of at the Fort Bragg demolition landfill on Lamont Road, and materials contaminated by asbestos or lead paint shall be contained and disposed of in the asbestos section of the demolition landfill. A permit from the PWBC Environmental/Natural Resources Division is required to dispose of materials in the landfills on post.

1.7.2 Preservation and Recovery of Historical, Archaeological, and Cultural Resources

Existing historical, archaeological, and cultural resources within the Contractor's work area will be designated by the Contracting Officer and precautions taken to preserve all significant resources as they existed at the time they were pointed out to the Contractor. The Contracting Officer's guidance shall be taken from the recommendations of the cultural resources survey produced for the project area by the Savannah District, U.S. Army Corps of Engineers. The Contractor shall install all protection for resources designated on the drawings and shall be responsible for their preservation during this contract.

1.7.2.1 Artifacts Discovered During Construction

Any unforeseen historical or archaeological finds encountered during Contractor operations shall be justification to cease all activity in the affected area. The Contracting Officer shall be promptly notified and shall notify the PWBC Environmental/Natural Resources Division. The Government will determine the significance of the findings, if necessary, after consultation with the North Carolina State Historic Preservation Officer, prior to authorizing the Contractor to resume operations in that area.

1.7.2.2 Cultural Resources Protected by Law

Cultural resources on Federal property are protected and managed by the Archaeological Resources Protection Act of 1979, and other applicable laws. Artifacts may be collected on Fort Bragg only after approval by the Contracting Officer and the PWBC Environmental/Natural Resources office as part of a controlled research design for scientific and cultural purposes. Collection for personal use is not authorized. Conviction subjects the violator to civil and criminal penalties.

1.7.3 Protection of Water Resources

The Contractor shall keep construction activities under surveillance, management, and control to avoid pollution of surface and ground waters. Special management techniques shall be implemented to control water pollution by any construction activities which are included in the performance of this contract.

1.7.3.1 Monitoring of Environmental Damage

Monitoring of water courses and wetland affected by construction activities shall be the responsibility of the Contractor. Wetland is intolerant to disturbance and will require special design and management to prevent encroachment. During construction, action will be required to maintain buffer areas and soil erosion control measures near water areas which could be adversely affected by construction activities.

1.7.4 Protection of Wildlife and Wildlife Habitat

The Contractor shall keep construction activities under surveillance, management, and control to minimize interference with, disturbance to, and damage of wildlife. Information concerning any species that require specific attention, along with measures for their protection, will be provided by the PWBC Environmental/Natural Resources Division through the Contracting Officer to the Contractor prior to start of construction operations.

1.7.4.1 Endangered Species Act

The Federal Endangered Species Act of 1973, as amended in 1982, requires that Federal lands be assessed for impacts upon endangered species and that such species be managed and protected. Although there are a number of rare, threatened, or endangered plant and animal species on Fort Bragg which are listed by either the Federal or State Government, the species most often of concern are an endangered bird, the red-cockaded woodpecker (RCW) (Picoides borealis) and two endangered plants, the rough-leaf loosestrife (RLLS) (Lysimachia asperulaefolia) and Michaux's sumac (MS) (Rhus michauxii). Species proposed for listing under the provisions of the Federal Endangered Species Act are entitled to the same protection as those actually listed.

1.7.4.2 Red-Cockaded Woodpecker

The RCW is dependent upon large numbers of mature pine trees for its survival. The birds are not tolerant of disturbance. Their habitat is managed by the PWBC Environmental/Natural Resources Division, Endangered Species Branch. The habitat of the RCW is marked in the following manner: (1) cavity trees which are used by the birds for roosting and nesting are marked with two broad bands of white paint and (2) each colony site is protected by a buffer area at least 200 feet in diameter around the cavity trees. Trees on the edge of the buffer area are marked with a single broad band of white paint. Fixed activity such as storage of construction materials, operation of concrete batch plants, or parking of vehicles is not authorized inside the buffer area. Molesting the birds or damaging their habitat is a violation of the Endangered Species Act. Conviction can subject the violator to severe civil and criminal penalties.

1.7.4.3 Endangered Plants

Endangered plants are dependent for their survival upon specific environmental conditions such as soil type, slope aspect, moisture, and light. They are not tolerant of disturbance. Their habitat is managed by the PWBC Environmental/Natural Resources Division, Endangered Species Branch. Each colony site is protected by a buffer area at least 200 feet in diameter. Trees on the edge of the buffer area are marked with a single

broad band of white paint. Fixed activity such as storage of construction materials, operation of concrete batch plants, or parking of vehicles is prohibited inside the buffer area. Damaging the habitat of endangered plants is a violation of the Endangered Species Act. Conviction can subject the violator to severe civil and criminal penalties.

1.7.5 Protection of Air Resources

The Contractor shall keep construction activities under surveillance, management, and control to minimize pollution of air resources. All activities, equipment, processes, and work operated or performed by the Contractor in accomplishing the specified construction shall be in strict accordance with all State of North Carolina and Federal emission and performance laws and standards. Ambient Air Quality Standards set by the Environmental Protection Agency (EPA) shall be maintained for all construction operations and activities. The Contractor shall have sufficient functional equipment available to accomplish the task.

1.7.5.1 Particulates

Dust particles, aerosols, and gaseous byproducts from all construction activities and the processing and preparing of materials, such as from asphaltic batch plants, shall be controlled at all times.

1.7.5.2 Odors

Odors shall be controlled at all times for all construction activities, processing, and preparation of materials.

1.7.5.3 Air Quality

Monitoring of air quality shall be the responsibility of the Contractor. All air areas affected by the construction activities shall be monitored by the Contractor when directed by the Contracting Officer.

1.7.6 Reduction of Sound Intrusions

The Contractor shall keep construction activities under surveillance and control to minimize disturbances caused by excessive noise. Equipment shall have properly operating noise-muffling devices for the entire length of the contract.

1.7.7 Application of Pesticides

The Contractor shall apply all pesticides in accordance with the requirements of the Federal Insecticide, Fungicide, and Rodenticide Act, using pesticides approved by the EPA and following the instructions on the manufacturer's label. Application of termiticides during construction, if applicable, will be addressed in paragraph SOIL TREATMENT of Section 02315 EXCAVATION, FILLING, AND BACKFILLING FOR BUILDINGS.

1.7.7.1 Licensing and Certification

All pesticide applications shall be performed by a Contractor certified in the EPA category or categories which cover the work to be performed and shall hold a valid business license. For work at Fort Bragg, the Contractor shall be certified and licensed by the State of North Carolina. The

Contractor shall present evidence of such licensing and certification to the Contracting Officer for approval prior to award of the contract.

1.8 POST-CONSTRUCTION CLEANUP

The Contractor shall be responsible for cleaning up all areas affected by the construction and restore them back to at least their original condition to include landscaping; planting of trees, grass, and shrubs damaged by construction; and raking and disposal of debris such as roofing shingles, paper, nails, glass, sheet metal, bricks, and waste concrete. Backfilled areas shall be machine compacted and replanted with grass. Construction debris shall be removed and properly disposed of. Culverts and drainage ditches with sediment from the construction area shall be cleared routinely to maintain proper drainage and recleaned prior to completion of the contract.

1.9 RESTORATION OF LANDSCAPE DAMAGE

The Contractor shall restore all landscape features damaged or destroyed during construction operations outside the limits of the approved work areas. Such restoration shall be in accordance with the Environmental Protection Plan submitted for approval to the Contracting Officer. This work will be accomplished at the Contractor's expense.

1.10 MAINTENANCE OF POLLUTION CONTROL FACILITIES

The Contractor shall maintain all constructed facilities and portable pollution control devices for the duration of the contract or for the length of time construction activities produce the particular pollutant.

1.10.1 Containment Berms

The Contractor shall build a containment berm around temporary aboveground fuel storage tanks. The bermed area shall be large enough to contain 125 percent of the volume of the storage tanks if there is a leak. The Contractor shall not install any temporary underground storage tanks.

1.10.2 Erosion Control Devices

The Contractor shall immediately repair any damaged erosion control structures, such as silt fences, and remove accumulated sediment.

1.10.3 Storm Drains

The Contractor shall ensure sediment does not block storm drains. The Contractor shall be responsible for cleaning storm drains blocked due to erosion of sediment off site.

1.11 TRAINING OF CONTRACTOR PERSONNEL IN POLLUTION CONTROL

The Contractor shall train his personnel in all phases of environmental protection. The training shall include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and installation and care of facilities (vegetative covers and instruments required for monitoring purposes) to ensure adequate and continuous environmental pollution control. Such training shall be completed before contract work begins.

PART 2 PRODUCTS (NOT APPLICABLE)
PART 3 EXECUTION (NOT APPLICABLE)

-- End of Section --