MILCON P210, SOF RIVERINE & COMBATANT CRAFT OPS FACILITY (SBT-22), STENNIS SPACE CENTER, MS

Site/Civil/Architectural Basis of Design – Pre-Final Submittal, May 15, 2009

Early start construction at the site has been successful following the outline established in the Factor A – Technical Solutions, and Basis of Design - 12/8/08, copies attached.

Site Preparation

Clearing and Fill

- The site has been cleared of trees and existing organic materials.
- Proof-rolling and removal of existing non-conforming materials completed.
- Storm Water Pollution Prevention Plan measures and requirements are in place.
- Satisfactory existing soils have been reused and relocated with select materials installed to specification.
- Minimum finished floor elevation has been established by the Mississippi Emergency Management Agency as 14 feet above sea level. Actual Finished Floor Elevations will be 16 feet above sea level as required to promote proper site drainage.

Temporary Drainage Measures

- Existing ditches have been utilized as per Storm Water Pollution Prevention Plan.
- The balance of the site has been rough graded with most new drainage features installed. The new drainage system has performed well in recent heavy rains.

Piped and Other Utilities

- Water system, fire loop, and sewage collection have been designed and detailed.
- Temporary power has been coordinated with Stennis/Nasa and installed.

Storm Drainage

- Stormwater drainage plan has been improved to better handle existing off-site drainage patterns.
- Gutter and downspout system has been coordinated with the Building Manufacturer and detailed on the plans.

Paving and Hardscaping

- Pedestrian and vehicular circulation has been refined based on User input.
- Locations for exterior equipment have been determined and detailed.

Land Structures

- Post -Tensioned foundations have been deleted in favor of conventional reinforced foundations.
- Early start construction is proceeding with building slab foundations.

Interior Layout and Function

- Interior function discussed in the previous Basis of Design documents has evolved to the ultimate layout as detailed in this Pre-Final Submittal.
- Final Armory layout determined.
- Cage Area has raised pads, improved gang shower and drying area, and laundry area.
- Office/Operations has incorporated User requirements for additional work stations.
- Boat Storage Building 2442 has had rear elevated access deleted with interior catwalk and internal catwalk access stairs.

Exterior Envelope

- Metal wall panel, soffit, and split face block selection has been coordinated with User.
- "R" values have been met or exceeded in the design.

SOF RIVERINE AND COMBATANT CRAFT OPERATIONS FACILITY
STENNIS SPACE CENTER, MS

Site/Civil/Architectural Basis of Design – 50% Submittal 12/8/08

The Site Plan and Building Design have evolved through the design process including PAK and CDW meetings to simultaneously better suit User needs and more closely conform to the RFP.

Site Plan

Note: SWPPP has been submitted and has received a satisfactory review.

Traffic flow to the site has been studied with various options explored:

- POV access is now from Lower Gainesville Road.
- POV parking and future parking has been redesigned.
- "LEED" preferred parking is indicated.
- Construction access points have been proposed.
- Construction activity areas have been defined.
- Site clearing limits have been adjusted to minimize impact.
- Landscaping locations have been refined to enhance security and provide ease of maintenance.
- Standoffs have been maintained and specifically improved at vehicle entrance.
- Parking for oversized government vehicles has been provided.

User input has helped refine daily personnel flow:

- Preferred facility views, both outward and approaching the site have been established.
- Foot traffic from parking and between buildings has been better accommodated.
- Pad locations for antenna, chiller, condensers, transformers, and generator are proposed.

Land Structures

Operations & Maintenance Building

Overall dimensions have not changed, but interior layout dimensions have been fine tuned to better suit User needs and conform to good construction practice. Major elements of floor plan flow have been changed to suit input from Users:

- Exterior "Sailor" entrance to the Operations Facility from parking and boat storage functions is now centralized for convenience of access to Cages, Staging, or Operations. Vertical circulation has moved across the building to coincide with the "Sailor" entrance.
- Exterior "formal" entrance has been defined to coincide with preferred approach from the site vehicle access point.
- Entrance canopy at "formal" entrance has been extended to enhance weather protection and become a stronger visual element.
- Clerestory windows have been moved from the Operations area of the building to the Staging area of the building to conform with the RFP.

Interior function of the facility continues to be refined:

- User has updated Armory layout, specifically cage arrangement and room furnishings.
- Toilet rooms and shower facilities have been refined based on User input.
- Design staff has met on site to further define all office and furniture layout.

<u>Boat Storage Building</u>

Ongoing discussions with the User are resulting in further detailing of the design of the critical raised platforms to access the boats:

- Concrete versus steel.
- Mesh partitions.
- Personnel entrances.

EXECUTIVE SUMMARY

Broadmoor appreciates this opportunity to provide NAVFAC Southeast the **SOF Riverine and Combatant Craft Operations Facility** as outlined in the RFP. We have developed an approach and assembled a team which can assure the delivery of the proposed project to **NAVFAC Southeast.**

With the mandate to provide **"best value"** to the Navy for its riverine operations on the Stennis Space Center campus, we have evaluated the program documents and have outlined in **Factor A** our **Technical Solution**. We have based this solution on the information available at this time. Upon award, a comprehensive analysis of the functionality, location and aesthetic will continue to assure the project meets or exceeds the user's requirements, delivering the best possible design and construction techniques for this facility.

In this document we will present the team to accomplish these goals. Broadmoor's core team for these DBOC projects is intact and will be providing the oversight necessary for the design of this project as well as providing interior design services. We have expanded our professional team with the addition of **Dammon Engineering, Inc.**, architects and engineers. Dammon will facilitate the conceptual design and engineering through the production of construction documents for the project. Mechanical engineering will be provided by **Professional Engineering Services**, in partnership with **Gallo Mechanical**. Electrical engineering will be provided by **Schlafly Engineering, LLC** in partnership with **HTE Contractors, Inc.**

Broadmoor will also present in **Factor B** its **Management Approach** to guarantee the successful delivery of this project. We have enjoyed a mutually advantageous partnership with the Navy on many projects for over twenty-five years and will continue to work to deliver an exceptional service. Our management practices have been developed to facilitate the unique requirements of Navy procurement methods in order to provide a completely responsive service. This partnership has proven successful and continues to develop on every project we provide to the Navy.

FACTOR A –TECHNICAL SOLUTIONS

The following narratives are divided into architectural and engineering disciplines and will provide an overview of our approach to the diverse requirements of the new operations facility. Where pertinent, we will address specific items as they relate to the site conditions and location. Even with the short time available, much research and study has been made to provide the Navy with the most effective facility in its efforts to affect a higher level of mission readiness and training for future missions in our region and around the world.

The design approach as well as products intended for incorporation into our proposal and as represented in the attached drawings and documents are in no way intended to take exception to the technical requirements of the RFP. If in your formal review of our proposal, it is determined that we have in any way technically deviated from your written expectations, we fully intend to conform to the requirements of the RFP and as further defined by all subsequent amendments.

SITE/CIVIL BASIS OF DESIGN

The scope of the Civil/Site work is comprised of several distinct categories of work as outlined in the RFP and as further developed be the Broadmoor/Dammon Team.

One aspect of note relates to the filling of the site. Based on analysis of the geotechnical reports and our familiarity with local soils conditions, our team is developing a design strategy based on significantly re-grading the site to fill the natural drainage ravine which currently runs through the building site with compacted native soil excavated from other areas of the site. Our plan will establish a new surface drainage pattern which will take the site water around the building site and into the existing discharge locations in the Pearl River canal. Our proposal drawings indicate slab on fill in accordance with the geotechnical reports. However, topographic conditions at the site will require extensive filling at the building sites which was apparently not accounted for in the RFP geotechnical report. Therefore we will utilize the services of a local geotechnical firm to help establish the final site fill and soil compaction plan. There is a possibility that a pile foundation may be more economically viable, but that is not anticipated at this time. A final plan will be developed as soon as we have access to the site for our engineers and geotechnical consultant to complete their analysis.

Site Preparation

Clearing and Fill

The site shall be cleared of all trees and excess grass and then prepared for construction by implementing the following site grading and fill methodology.

- At Roads and Parking Areas, remove any existing soft topsoil to expose the existing sub-base material. Establish new subgrade elevations by placing relocated fill material and compacted to specification. Road surfaces will be either asphalt paving with crushed stone base or reinforced concrete paving in accordance with the RFP.

- Building Pads shall be placed on four feet of select imported fill materials under the slab. The construction of the ground floors is further described in the drawings.

- The Lawn Areas will be filled with suitable excavated material and topped with existing top soil to elevations developed for surface drainage. Site finished grading will entail shaping to the final Site Grading and Drainage Plans and then seeding or sodding as called for in the RFP.

Temporary Drainage Measures

Existing ditches will be cleaned out and extended as needed for drainage during construction. All excess excavated dirt will be stockpiled on site and used in the final grading of the site.

The balance of the site will be rough graded to eliminate low spots and establish positive drainage during construction. Temporary culverts will be provided at roads and surcharge locations as required to drain site. Erosion control measures will be employed to protect existing improvements and surrounding properties.

Piped Utilities

Water

- The domestic water system will be extended from an existing POC along Endeavor Blvd. to the Operations/Maintenance Building. If required, water lines can be extended to the Helipad from the drive in the Wash Rack area.

- The existing fire water loop from Endeavor Blvd. will be extended to the Ops./Maint./Storage Complex Area in conjunction with the domestic system

above. This will include the installation of fire hydrants at locations providing the coverage required by the governing codes and to support the new building fire suppression systems.

Sewerage

- A sanitary sewer collection system will be installed to collect the sanitary waste from the Operations/Maintenance Building with a new lift station, wet well and force main to the existing POC, Lift Station No. 33.

Note: Utilities for the Wash Rack will be as per provided plans.

Storm Drainage

Stormwater will be handled via a combination of overland sheet flow, surface channels, and underground piping which will direct the flow towards the existing and newly developed drainage patterns in each respective work area.

Runoff from the building roofs will be collected by gutters and down spouts which will discharge onto splash blocks, surface channels, or underground piping depending on their location.

Paving and Hardscaping

As outlined in the RFP, roadways and parking areas will be either concrete or Asphalt paved. Generally concrete paving will be at the service areas around the boat maintenance and storage buildings, with asphalt paving for the POV parking area and road to the boat launch. The type of vehicles traveling each area will be taken into account in the final paving design.

Our paving sections will contain multiple layers including compacted existing sub-base, compacted fill, and compacted stone base material for both the asphalt and concrete paving areas. This design will be in accordance with the geotechnical report and provide the required life and performance over the existing soft soils at the project site.

Sidewalks serving the Complex will be concrete paved as described in the RFP. Sidewalks providing accessible paths to the building entrances will meet ADA criteria.

BASIS OF STRUCTURAL DESIGN

Land Structures

Operations & Maintenance Building

The Operations Building consists of a two story facility with office area over utilitarian functions on the first floor with plan dimensions of 58' x 148', with an attached single story Boat Maintenance wing of 67' x 102'. All structural framing will be provided by a pre-engineered metal building manufacturer. The Maintenance Building foundation will consist of conventionally reinforced two way slab, and a post tensioned foundation for the Operations Building, with the two foundations dowelled together. The second floor framing of the Operations Building will consist of a concrete slab on metal deck and structural steel beam / bar joist system. Structural steel columns will support the floor framing. Overall the roof framing will consist of purlins on metal building rigid frame with a standing seam metal roof. The lateral force resisting system will consist of braced frames. The Armory will be enclosed with CMU walls and concrete floor and ceiling in accordance with the requirements of the RFP.

Boat Storage Building

The framing and foundation of the Storage Building will be similar to the Maintenance Building above.

BASIS OF ARCHITECTURAL DESIGN – OPERATIONS BUILDING

Interior Layout and Function

The ground floor of the Operations Building in multi-faceted in uses:

- Entry/Control/Circulation
- Cages/Showers/Toilet Rooms
- Armory
- Mech./Elec./Utility

The second floor of the Operations Facility is focused on office and operations as follows:

- Unit Offices
- Commander Offices
- Training
- River Operations Control
- Circulation/Utility

Spaces for mechanical and electrical equipment is available on both floors with additional equipment space over the Armory.

Our design team has developed a full understanding of the requirements for each of these functions as outlined in the RFP. The room sizes and adjacencies will be maintained as the final documents are developed, however some reconfiguration may be necessary to integrate the structural system, establish an effective arrangement of natural/clearstory lighting, and assure proper circulation and fire egress.

The requirements for finishes, casework, accessories and contractor furnished furniture and equipment for each of the various spaces are understood and will be provided for. Highly specialized items – operable partitions, security, overhead cranes, armory requirements, etc. – will be properly specified and carefully detailed. We understand the special requirements for the SIPRNET construction including mechanical and plumbing openings, entry door and accessories, sound transmission criteria and intrusion detection.

Exterior Envelope

Broadmoor/Dammon's exterior wall design satisfies the critical need of providing an effective Weather-Thermal-Air Barrier while complementing existing adjacent SOF facilities. In our climate, preventing intrusion of moisture is of utmost importance in protecting the health of the occupants, preventing damage to the building and assuring the proper functioning of the HVAC systems.

The exterior walls will be comprised of 6" reinforced concrete masonry with a 6' veneer on the first floor of split face masonry to compliment the existing buildings. Above the veneer galvanized furring members will be applied to the exterior face for attachment of the metal wall panels. The wall system will be engineered to satisfy the wind load criteria. The metal wall panels will be secured to the furring members using concealed fasteners and backed by insulation per the RFP. Care will be taken to ensure proper placement of gaskets and sealants. Integrated trims and flashing will be installed. Other finished will be per the RFP.

The Schedule of Finishes from the RFP is already shown on the packet drawings.

Wherever the underside of occupied spaces at the second floor is exposed to outside air, the assemblies will include thermal insulation and vapor barrier provisions. The soffits at these areas will be of pre-finished composite metal panels. The sun protection canopy at the South elevation and the columns supporting it will be clad in an aluminum composite panel system.

The entrances and openings will be of anodized aluminum/painted steel as scheduled with tinted low-E insulating glazing meeting the Large Missile Test standards. Entrance

units will be detailed for the appropriate frequency of traffic and outfitted with the necessary hardware and accessories.

Our windows will be provided to compliment the metal panel system. Frames are of extruded aluminum and glazing at the windows is the same as at the entrances. Interior aluminum sills are provided as part of the window system and match the finish of the frames.

Other exterior doors will be as called for in the RFP in hollow metal doors and frames with internal insulation, weather stripping, hardware and accessories to insure against air and water intrusion and to provide for proper emergency egress and security. Vision panel glazing will meet the missile impact criteria of the window glazing.

The roofs at all buildings will be galvalume and the roof assembly will provide a minimum "r" insulating value as noted in the RFP. Emphasis will be given to the detailing of roof penetrations and any equipment supports. All metal flashing, trim, gutters and downspouts will be galvanized/galvalume to match adjacent structures.

Interior Construction

At the ground floor, all interior partitions will be of durable concrete masonry units. At the upper floor interior wall partitions will be of steel stud construction with gypsum wallboard. Where required by IBC or NFPA, fire rated partitions will be provided, including properly rated doors and fire stopping of penetrations. All interior stud partitions will include acoustical batts.

At toilet spaces, walls will be faced with porcelain tile.

Interior ceilings will generally be of acoustical lay in panels other than at toilet facilities and painted structure areas.

Floors throughout will be as cited in the RFP Schedule of Finishes shown on the packet drawings, including porcelain tile, quartz vinyl tile, carpet tile, and concrete.

Fire stair enclosures and construction will be in accordance with the IBC and NFPA. Handrails will be of anodized aluminum and all exposed steel components will be painted.

Throughout the Operations Building interior, the accessories, casework, signage and specialty items listed in the RFP will be provided. The contractor's responsibility for the outfitting of the project is understood.

BASIS OF MECHANICAL DESIGN

General:

This section describes the general Basis of Design for the Mechanical systems serving the future **Riverine and Combatant Craft Operations Facility at Stennis Space Center.** The mechanical systems described herein include the plumbing and HVAC systems only. The intent of this description is to adequately and accurately describe the design intent, and prove compliance with the system requirements outlined in the RFP.

The project intent is to meet or exceed LEED® Certified requirements. As such, certain design approaches, system configurations, and equipment selections have been tailored to increase operating efficiencies while minimizing operational costs and system complexities.

Mechanical HVAC

The building shall be served by a central chilled water plant designed specifically for the Riverine Facility. The primary component shall be a single high-efficiency, air-cooled chiller with multiple compressors. The system shall be designed for 100% of the anticipated calculated load, but shall include multiple compressors to enhance redundancy within the refrigeration system. The final system designs shall be predicated on the following conditions:

Outdoor Design Conditions

Cooling Season:	92°F DB / 82°F WB
Heating Season:	31°F DB

Indoor Design Conditions:

Conditioned Spaces	
Cooling Season:	75°F DB / 50%RH
Heating Season:	68°F DB
Ventilated / Heated Spaces	
Cooling Season:	95°F DB
Heating Season:	55°F DB

The system shall include a variable primary pumping scheme, which allows the chilled water flow to modulate in response to real-time fluctuations in HVAC cooling load. This capability will significantly enhance the energy consumption characteristics of the facility while increasing the useful life of the pumping equipment. Due to the anticipated small

system volume, a buffer tank shall be included to minimize hard starts / stops by the chiller equipment. The chilled water system shall include chemical treatment for rust, corrosion, and scale inhibition.

Air-side system design shall incorporate the use of central station modular air handlers with variable speed fans (controlled by variable frequency drives). Fan speed shall be adjusted in real time in order to deliver only the amount of air required to adequately condition the subject spaces. The building shall be divided into several zones, predicated on common use, exposure, or specific environmental control requirements. Each zone shall be served by a dedicated VAV (variable air volume) terminal unit with electric reheat. The Communications Room shall be served by a dedicated DX split system sized specifically for the internal load requirements of the space, including equipment, lights, personnel, etc.

Based on the calculated loads for each zone, the electric heat option provides greater system flexibility, reduced operating and maintenance costs, and increased reliability versus a centralized heating hot water boiler system. The heating load for the proposed building is minimal, and the building will require simultaneous heating and cooling throughout portions of the year. Conditions would be common where a natural gas boiler system (comprised of pumps, boilers, controls, etc.) would require operation to satisfy an extremely small heat or reheat load within a small zone or office. In order to eliminate these gross inefficiencies, electric heaters shall be integrated into the VAV boxes to provide heat (and reheat, where required) to each individual zone without the need for operation of a central heating plant.

The central control system shall monitor all applicable conditions within the building, and provide system control to automatically maintain appropriate temperature conditions within each zone. User-level interface (thermostats) shall provide a range of setpoint adjustment; the range shall be controlled by the master central system. Each central station AHU shall utilize a CO2 sensor to implement a Demand Control Ventilation (DCV) strategy, which allows the reduction of outside air delivery during times when the building is sensed to be partially occupied. The Armory zone shall include active humidity control in order to preserve the contents of the space during high ambient humidity conditions. The central system shall interface seamlessly with the existing Stennis Siemens® APOGEE® system.

The Boat Maintenance wing of the facility shall be served by heating and ventilation systems only. Such systems shall be comprised of electric resistance unit heaters and roof-mounted centrifugal exhaust fans, thermostatically controlled with user-level override.

The Boat Storage Building shall be served by heating and ventilation systems only. These systems shall include electric resistance unit heaters and roof-mounted centrifugal exhaust fans on automatic thermostatic controls.

Plumbing Systems

The plumbing systems shall consist of all necessary fixtures, valves, piping, connections, and trim to form complete and functioning systems. All fixtures shall be selected based on low-consumption performance characteristics that meet or exceed the LEED requirement for a minimum 30% reduction in water consumption. Water heating shall be accomplished by utilizing a central electric water heater with a minimum energy factor rating of 0.93. A re-circulating hot water return system shall be used to ensure prompt delivery of hot water at each fixture while minimizing energy consumption based on piping heat loss.

Fixtures shall be based on the following characteristics:

Water closets:
Low-Consumption flush valve vitreous china (Accessible where required)

Urinals:
Low-Consumption flush valve vitreous china (Accessible where required)

Wall-Mounted Lavatories:
White vitreous china with 8" center-set gooseneck, low-consumption faucet (Accessible where required).

Showers:
Pressure-balanced valves and trim, accessible personal hand-shower and support bars where required.

Service Sinks:
Floor-mounted cast terrazzo style mop sink with drop front, mop hanger, and bumper guard.

Kitchen / Break Room Sinks:
Self-rimming stainless steel sink with 8" center-set high arc gooseneck low-consumption faucet with wrist-blade handles.

Shower / Eyewash Stations:
Pedestal supported combination shower and eyewash per applicable safety standards, including tempered water supply.

Drinking Fountains:
Dual-height push-button, wall-mounted, water coolers.

All wall mounted fixtures shall be supported from the floor using adjustable floor-mounted fixture supports. Wall hangers shall not be used.

The incoming water service shall be protected by using an approved reduced pressure principle (RPP) backflow preventer per AWWA guidelines. All connections between the potable supply and the mechanical HVAC water systems shall be through an approved RPP backflow preventer per AWWA.

All mechanical rooms and heads shall have wall hydrants for cleaning operations. Several wall hydrants shall be installed along the building exterior at a minimum of every 175'.

Piping specifications shall be as follows:

Underground Sanitary Waste: Schedule 40 PVC with solvent weld joints.
Above Ground Waste and Vent: No-hub service weight cast iron pipe and fittings.
Internal Roof Drainage: None Required.
Compressed Air Systems (Non-Medical Use): Galvanized steel with screwed fittings OR Type L copper with soldered fittings.
Domestic Water Supply: Type L copper with soldered fittings.
Chilled Water Piping: Schedule 40 Steel (larger sizes) or Type L copper with soldered fittings. Connections between dissimilar metals shall be prohibited. Dielectric unions or flanges shall be used where applicable.

The Boat Maintenance Building shall be served by a continuous trench drain and area floor drains discharging into an oil-water separator prior to release to the sanitary sewer system.

In the Boat Maintenance wing of the main facility, the area shall be served by a shop air compressor with refrigerated dryer, aftercooler, and filter. Piping shall be routed through the bay with a minimum of 2 drops, which shall include a filter pressure regulator and quick-disconnect for attachment of operator tools.

Additional Project Specifications:

Contractor Qualifications and General Conditions

This section includes general administrative criteria for execution of the work of Division 15, including Contractor's Qualifications, Quality Assurance, Codes and Standards, Permits and Inspections, Equipment and Materials, Storage and Handling, Rough In of Mechanical Installations, and Coordination with Other Trades.

Work accomplished under this Division shall be done in accordance with the laws and statutes of the local authorities having jurisdiction, and the Contractor shall be licensed under the laws and regulations of those same authorities.

CODES AND STANDARDS

The work described in these Project Documents shall comply with the requirements of the local authorities having jurisdiction, as well as the following standards and codes:

ASHRAE 90.1 ("Energy Code")
ASHRAE 62.1 ("Commercial Ventilation Code")
ASHRAE 62.2 ("Residential Ventilation Code")
NFPA 90A ("Mechanical Installation Code")
ASHRAE 15 ("Mechanical Refrigeration Safety Code")
IBC ("International Building Code")
IMC ("International Mechanical Code")
IFGC ("International Fuel Gas Code)
IPC ("International Plumbing Code")
NFPA 101 ("Life Safety Code")
NFPA 13 ("Sprinkler Systems Code")
NFPA 70 ("National Electric Code")
ARI Ratings
ASME Pressure Vessel Certifications
LEED-NC Version 2.2

PERMITS, FEES, AND INSPECTIONS

Contractor shall arrange for and pay for all required inspections during the construction process, and shall closely coordinate with the work of other disciplines prior to receiving inspections and certifications. Contractor shall furnish original copies of all certifications and inspection reports to the Owner at Project Closeout.

EQUIPMENT AND MATERIALS

Each piece of equipment shall bear a nameplate indicating the manufacturer's name, product model number, serial number, listings and approvals (UL, ASME, etc.), and capacities. If possible, indicate on the nameplate stamp the Equipment Tag number or designation as listed in the Project Documents. If not possible, additional signage will be provided indicating such information and affixed directly to the unit or item in a location accessible and in plain view.

Each item of equipment shall be the standard product of a manufacturer regularly engaged in the design, fabrication, production, and certification of that particular type of equipment. This shall in no way prevent custom equipment manufacturers from providing equipment specifically designed for the service and capacity described in the Project Documents.

STORAGE AND HANDLING

Equipment and materials shall be delivered to the site in original packaging / containers, and shall be stored off of the ground in an area sheltered from the elements and damage from construction operations, and shall be readily available for access and inspection. Items susceptible to damage from moisture or temperature extremes shall be stored in a climate controlled location on or off of the site prior to installation.

Any equipment damaged during shipping, storage, or handling shall not be accepted.

MATERIAL AND INSTALLATION REQUIREMENTS

This section includes piping, fittings, and valves that are common to several divisions of Work. The work and material described includes: sanitary sewer piping, storm sewer piping, water main piping, water distribution piping, drain piping (from equipment), isolation valves, balancing valves, and meters.

PIPE AND FITTINGS - Provide pipe conforming to the following descriptions and standards:

- Standard Weight Steel Pipe 2" and smaller: seamless or butt-welded, black or galvanized (ASTM A53)
- Scheduled Steel Pipe, seamless or continuous steel pipe, black or galvanized (ASTM A53, Grade A)
- Steel Pipe Nipples: seamless galvanized or carbon steel pipe (ASTM A733, A53, and A106)
- Ductile Iron Pipe: Mechanical and push on joints, with AWWA C104 cement-mortar lining, conforming with AWWA C151, Classes 50 and 51.
- Flanged Ductile Iron Pipe: with barrel conforming to AWWA C115 Class 150 or 300, or with cement-mortar lining conforming to AWWA C104.
- Cast Iron Soil Pipe: pitch coated, hub-and-spigot soil pipe and fittings (ASTM A74)
- Hubless (No-Hub) Cast Iron Soil Pipe: service weight cast iron soil pipe with clamped neoprene connections (CISPI 301)

- Seamless ACR Copper Tube: Types K and L, ASTM B88, water tube, annealed temper.
- Hard Copper Tube: Seamless hard drawn copper tube, Type K, L or M, ASTM B88.
- Copper Drainage Tube: Type DWV, ASTM B306
- PVC Water Main: SDR/PR 160 hub-and-spigot with elastomeric gasket (ASTM D2672 and D3139)
- PVC Plastic Pipe: Schedules 40, 80,and 120 (ASTM D1785) and type DWV (ASTM D2665)

FITTINGS

- Malleable Iron: black or galvanized, screwed of butt-welded fittings, 150 psi (ASTM/ANSI B16.3)
- Cast Iron: black or galvanized screwed drainage fittings (ASME/ANSI B16.12); recessed drainage pattern (ASME B1.20.1)
- Cast Copper Alloy Solder Joint Fittings: Equal to NIBCO (ASME/ANSI B16.18)
- Cast DWV Fittings: (ANSI B16.23)
- Wrought DWV Fittings: (ANSI B16.29)
- Wrought Copper and Bronze Fittings: (ANSI B16.22)
- Wrought Copper Drainage Fittings: (ANSI B16.23)
- Bronze Flanges: (ANSI B16.24, Classes 150 and 300)
- Steel Butt-Welded Fittings: (ANSI B16.9)
- Grooved Steel Pipe and Fittings: Equal to Grinnell “Gruv-Lok” or Victaulic
- Ductile Iron and Gray Iron gasketed fittings: AWWA C110 standard pattern or AWWA C153 compact pattern, 250 psig min pressure rating, with AWWA C104 cement-mortar lining and AWWA C111 rubber gaskets.
- Thredolets and Weldolets: Approved.

VALVES

- Bronze Valves, 2” and less: threaded ends
- Ball Valves, 4” and less: blowout proof, 3-piece construction, standard or conventional port, chrome-plated brass ball, RTFE seats and seals, threaded or flanged end connections
- Ferrous Valves, 2 ½” and up: flanged ends
- Valve Temperature and Pressure Ratings: not less than system pressure specified
- Valve Sizes: same as upstream pipe size, unless indicated otherwise.
- Extended Valve Stems: Required on all insulated valves
- Valve Flanges: ASME B16.1 (cast iron), ASME B16.5 (steel), and ASME B16.24 (bronze)
- Valve Grooved Ends: AWWA C606
- Threaded: per ASME B1.20.1

- Valve Bypass and Drain Connections: MSS SP-45

MECHANICAL INSULATION

This section includes pipe and duct insulation for mechanical installations. Products and methods outlined herein include: fiberglass ductwrap insulation, fiberglass pipe insulation, rigid cellular glass pipe insulation (closed cell polyurethane), Armaflex / Rubatex foam insulation systems, internal duct insulating fiberglass liner, water vapor barriers, sealants and coatings, and jackets for interior and exterior applications.

Insulation thickness and ratings shall comply, as a minimum, with ASHRAE 90.1 ("Energy Code").

All insulation material, including jackets and sealants, utilized on interior installations, shall have a Flame Spread Rating of 25 or less, and shall have a Smoke Developed Rating of 50 or less, when tested in accordance with ASTM E84.

Insulation materials must be clearly marked by the manufacturer that the requirements outlined above are met.

Insulation materials shall be brought to the site in original containers, shall be kept free from heat and moisture, and shall be clearly marked with maximum temperature ratings, type and grade, and Flame Spread / Smoke Developed ratings.

In areas where exposure to the elements is inevitable (rooftop applications), insulation, vapor barrier, and jacketing must be applied as quickly as possible to prevent degradation of metal duct and piping components.

INSULATION MATERIALS

Mineral Fiber Board Insulation (duct and equipment): glass fibers bonded in thermosetting resin, complying with ASTM C612, Type IB, without facing and with all-service jacket manufactured from kraft paper, reinforcing scrim, aluminum foil, and vinyl film.

Mineral Fiber Blanket Thermal Insulation (duct): glass fibers bonded with a thermosetting resin, complying with ASTM C553, Type II, without facing and with all-service jacket manufactured from kraft paper, reinforcing scrim, aluminum foil, and vinyl film.

Flexible Elastomeric Insulation (piping): closed-cell, sponge or expanded rubber materials, complying with ASTM C534, Type I for tubular materials and Type II for sheet materials, with recommended adhesive and UV protective coating (for exterior installations).

Mineral Fiber Insulation (piping): glass fibers bonded with a thermosetting resin, complying with ASTM C547, Type I, with factory-applied all purpose vapor retarder jacket.

Cellular Glass (piping): inorganic foamed or cellulated glass, annealed, rigid, hermetically sealed cells, non-combustible, in compliance with ASTM C 552, Type II, Class 2.

Field Applied Jackets

- Foil and Paper Jacket: ASTM C921, Type I, laminated, glass-fiber-reinforced flame retardant kraft paper and aluminum foil.
- PVC Jacket: High impact, UV resistant, 20 mil thick, roll stock suitable for shop of field cutting and forming. Adhesive as recommended by manufacturer and standard color as white.
- PVC Fitting Covers: High impact, UV resistant, 20 mil thick, factory fabricated for various fittings, elbows, tees, and valves. Adhesive as recommended by manufacturer and standard color as white.

Vapor Retarders: Mastics shall be as recommended by the manufacturer, and are compatible with insulation materials, jackets, and substrates.

All piping conveying fluids fewer than 70°F at any time shall be insulated with a vapor barrier jacket.

Apply piping insulation with longitudinal seams running along the length of the pipe.

Apply ductwork insulation with tight longitudinal seams and end joints. Overlap and bond seams and joints with vapor retarder mastic or pressure sensitive tape having the same physical properties as the insulation facing.

Seal all openings in insulation system (valve stems, hangers, supports, brackets, damper operators, actuators, etc.) with a vapor-retarder mastic, to provide a complete and continuous vapor barrier.

Do not compress insulation during installation to any less than 80% of its nominal thickness.

Where ductwork or piping passes through structural components (walls, slabs, roofs, etc.), continue insulation through the opening, unless prevented by presence of fire dampers, sleeves, couplings, etc. In the event of an obstruction, tightly butt insulation up against obstruction, and continue the vapor barrier up the termination of the insulation.

INSULATION SCHEDULE

Outside Supply and Return Air Ductwork

Material: Mineral Fiber Board
Thickness: 1 ½" thick
Jacket: Field Applied PVC
Vapor Retarder: Yes

Interior Supply Air , Return Air, and Outside Air Ductwork

Material: Mineral Fiber Blanket
Thickness: 1 ½" thick (R-4 minimum)
Jacket: Foil and Paper
Vapor Retarder: Yes

Domestic Cold Water, Hot Water, and Condensate Drain Piping

Material: Flexible Elastomeric or Mineral Fiber
Thickness: ½" thick
Jacket: Exposed Locations – PVC
Concealed Locations – Foil and Paper or PVC
Vapor Retarder: Yes

Transfer Air / Sound Traps

Material: 1" Fiberglass or Closed Cell Duct Liner with smooth matte-faced interior surface (in compliance with NFPA 90A)

Plumbing Waste Piping Above Rigid Ceilings and Horizontal Roof Drain Piping

Material: Flexible Elastomeric or Mineral Fiber (Ductwrap)
Thickness: 1" thick minimum
Jacket: Exposed Locations – PVC
Concealed Locations – Foil and Paper or PVC
Vapor Retarder: Yes

Hydronic Chilled Water Piping

Material: Cellular Glass
Thickness: 1" thick
Jacket: Exposed Locations – PVC Indoor, Aluminum Outdoor
Concealed Locations – Foil and Paper or PVC
Vapor Retarder: Yes

HVAC SYSTEMS - DUCTWORK AND ACCESSORIES

This section includes general requirements for all equipment, material, and accessories for the HVAC systems, including: chilled water air handling units, ductwork, VAV boxes, grilles, registers, diffusers, balancing dampers, start-up and warranty requirements, and service warranty contract requirements.

Deliver equipment, ductwork, controls, actuators, safeties, grilles and registers, dampers, electrical components, and accessories in their original shipping containers, and store off of the ground and protect from extremes in temperature and moisture. Electrical and control components shall be stored in a climate-controlled area prior to installation.

Equipment or material damaged during delivery, storage, or handling will not be accepted. Replace damaged material or equipment with new.

All ductwork, except flexible fabric ductwork where specifically indicated, shall be of galvanized steel sheets of gauges and construction recommended by NFPA 90A and SMACNA for the pressure classification indicated, complete with all necessary angles, supports, reinforcements, and braces. All ductwork indicated is 2"SP pressure classification. Fiberglass "duct board" will not be used.

All round take-offs from rectangular ductwork shall be made by means of a "Genflex" Model SM-ID spin in fitting with integral butterfly damper and quadrant operator or equal.

Fire dampers, where ducts pass through fire rated partitions with a fire resistance rating of 1 hour or more, shall be U.L. listed, with fusible link rated for operation at 165 degrees F, equal to Ruskin Model DIBD-2. All fire and combination fire/smoke dampers shall be installed in accordance with their listing.

All changes in direct greater than 60° shall include single-thickness turning vanes.

Rectangular take-offs in rectangular ductwork shall be made by 45° fittings with opposed blade balancing damper. Provide extended operator on damper to extend beyond the insulation and jacketing.

All outside air and return air ductwork shall be internally lined with minimum 1" matte-faced or foil-faced fiberglass duct liner. All supply ductwork shall be externally insulated with ductwrap, minimum 1 ½" thickness, with continuous vapor barrier. See Insulation section for additional information.

REGISTERS, GRILLES, AND DIFFUSERS (AIR DEVICES)

Devices exposed to moisture (restrooms, kitchens, etc.) shall be all aluminum or stainless steel construction.

Air devices located indoors operating under normal circumstances shall be steel, aluminum, or stainless steel. All registers and diffusers shall come complete with opposed blade balancing dampers operable from the face of the device. Ceiling diffusers shall have removable core for serving, adjustment, and cleaning.

Coordinate border style and dimensions with ceiling construction prior to order devices. Provide mounting frame border for all hard ceiling applications. Provide lay-in type border for all lay-in ceiling applications.

Where flexible ductwork is used to connect to individual air devices, provide a factory insulated plenum (with 1" matte-faced fiberglass liner) with each air device.

INSTALLATION

Ductwork and accessories shall be manufactured, assembled, and installed in strict accordance with published recognized standards, including SMACNA and NFPA 90A.

Furnish and install fire damper in accordance with the manufacturer's written instructions and the product's listing. Provide dampers where indicated on the plans, and whenever a duct passes through a fire rated partition of one hour or more. (Exception: Where ductwork is less than 100 square inches and extends no less than 5'-0" from the fire rated partition penetration, the fire damper may be omitted.)

SYSTEM START UP AND COMMISSIONING

All units shall be started and any problems shall be troubleshooted until units perform satisfactorily and meet the capacity requirements outlined in the schedule.

All ductwork must be clean and free of debris at system start-up. Provide rough filters during system operation prior to Project Closeout. Change filters at Project Closeout with new.

All building HVAC systems shall be subject to Level 2 Commissioning.

A complete Test and Balance (T&B) of the subject systems shall be accomplished, including air side and water side balancing. All T&B work shall be done in accordance with published industry standards and procedures, and as referenced in AABC and NEBB guidelines.

BASIS OF ELECTRICAL DESIGN

This electrical design for this project will meet **LEED "certified" level (26 points)**, in accordance with LEED-NC (New Construction) rating system. Sustainable techniques and materials will be used to the greatest extent possible. Overall the design will consider integrated design solutions that provide the best value for the facility. Analysis shall be performed and submitted per Appendix G of ASHRAE 90.1

Lighting

The following codes and standards shall be applied to the lighting design of this project:

National Electrical Code (NEC)

ASHRAE Standard 90.1 - 2004 – Energy Efficient Buildings

Underwriters' Laboratories (UL)

Electrical Testing Laboratories (ETL)

American National Standard Institute (ANSI)

Illuminating Engineering Society (IES)

General electrical requirements (UFC-3-500-10N)

Interior electrical systems (UFC-3-520-01)

SSTD-8070-0081-ELEC

UFC 3-535-01 Navigation Lights

Lighting layouts and their corresponding maintained foot candle levels shall meet the recommended levels of the RFP set forth in the room requirements.

A complete lighting system will be provided consisting of exit and emergency lighting. Lighting will be accomplished with T-8 or compact fluorescent lamps with electronic ballasts rated less than 10% THD. All fixtures shall contain fast blow fuses, and RFI/EMI filters.

Automatic lighting shutoff will be supplied in accordance with ASHRAE 90.1 –2004.

A complete exterior lighting system will be provided. Exterior lighting shall be high pressure sodium and provide 0.5 foot-candles in parking lots and around the building perimeter. Light fixtures will be cutoff type and be either building mounted or pole

mounted. Pole mounted lights will be mounted min 30' A.G. Poles shall be aluminum with cutoff type shoebox fixtures mounted on concrete foundations. Lighting will be photocell and time clock controlled in accordance with RFP and SSC standards.

Computerized calculations with points on 10 foot centers will be provided for exterior lighting.

Motion activated occupancy sensors shall be provided in all occupied spaces with manual override. Ultrasonic activated occupancy sensors shall be provided in toilet rooms. Mechanical and electrical rooms shall have manual switching only, but will be connected to lighting control system for programmed shutdown.

The exit fixtures shall be green LED style fixtures.

Emergency lighting shall be provided via connection to emergency generator.

Navigation lights for the Helipad shall be provided in accordance with requirements for standard VFR arrangement. Additional lighting will be provided as determined during design phase regarding approach lighting and any additional navigation lighting.

Power

The following codes and standards shall be applied to the power distribution design of this project:

National Electrical Code (NEC)

Underwriters' Laboratories (UL)

Electrical Testing Laboratories (ETL)

American National Standard Institute (ANSI)

General electrical requirements (UFC-3-500-10N)

Interior electrical systems (UFC-3-520-01)

SSTD-8070-0081-ELEC

Primary power will be provided from the existing 13.8kV delta overhead distribution system. The secondary voltage shall be 480/277V. All underground medium voltage circuits will be #1/0 AWG, type MV-90, 133% insulation, EPR jacket, installed in concrete encased ductbank, 2-6" conduit.

A new pad mounted, loop feed, transformer with lightning arrestors will be provided in accordance with UFC3-500-10N. Estimated maximum size shall be 300KVA. It will be provided with a separate kilowatt demand meter per SSC standards.

An emergency generator, maximum size 300kW, shall be provided. Generator shall meet all requirements of the RFP, NFPA 100, and provided with outdoor enclosure, critical grade exhaust silencer, and a sub-base fuel tank sized for minimum full load run time of three days or greater. The generator shall provide back up to entire operations facility, including Boat maintenance and Boat storage spaces, via connection through a service entrance rated automatic transfer switch. Monitoring of generator and ATS shall be provided in Building 2603.

Duplex 20A receptacles will be provided per the RFP set forth in the room requirements.

Grounding of all electrical systems shall be in accordance with NFPA 70 and IEEE1100 and UFC 3-520-01. Single point grounding bus bar shall be provided at service entrance.

All device plates shall be stainless steel.

Fire Alarm System

The following codes and standards shall be applied to the design of the fire alarm system of this project:

National Electrical Code (NEC)

National Fire Alarm Code (NFPA 72)

Life Safety Code (NFPA 101)

Underwriters' Laboratories (UL)

Electrical Testing Laboratories (ETL)

American National Standard Institute (ANSI)

General fire protection requirements (UFC-3-600-10N)

A complete electrically supervised, addressable intelligent, manual and automatic, fire alarm system shall be provided in accordance with respective NFPA codes and the RFP. Compliance with the requirements for the fire protection system will be determined by a review of the design by a registered fire protection engineer.

The system shall consist of a fire alarm control panel, remote annunciator, manual stations, smoke detectors, duct detectors, A/V devices, radio transmitter, and electrical supervision of the sprinkler system. System shall also be compatible for future hardwire connection to Base monitoring system per RFP and SSC standards.

A mass notification system shall be provided in accordance with the RFP, including exterior coverage of Boat Storage and developed site. System shall meet all requirements of UFC 4-021-01.

SPECIAL SYSTEMS

The following codes and standards shall be applied to the special system design of this project:

National Electrical Code (NEC)

General electrical requirements (UFC-3-500-10N)

Interior electrical systems (UFC-3-520-01)

Electronic Industries Association Standards

Telecommunication Industries Association Standards

A telecommunications distribution system shall be provided, consisting of horizontal and backbone cabling, and interconnection to head end location in building 2606, in accordance with the RFP. System shall consist of site underground raceways as necessary for extension of existing distribution system and innerducts through existing conduits.

Separate horizontal cabling shall be provided for the NIPRNet and SIPRNet systems. NIPRNet horizontal cabling shall be CAT5E UTP, and SIPRNet horizontal cabling shall be CAT5E STP. Color coding of jacks and wiring will be provided per standard established at Building 2603.

CATV shall be provided in the Operations Facility, and connected to the base distribution system per the RFP. System shall be complete and operational, and include all underground distribution cabling to point of connection, and all inside wiring, amplifiers and taps as necessary.

Intercom/Public Address system shall be provided per the RFP, via telephone handsets and dedicated stations and speakers as required. System will interface with system in

Building 2603, with expansion module and associated hardware added to system in Building 2606.

An interior/exterior integrated electronic security system shall be provided, consisting of access control, intrusion detection, and CCTV. All requirements of the RFP shall be met, including interface to Building 2603.

A CCTV/security system conduit system shall be provided to cover areas stated in the RFP. Materials and installation of the equipment shall be by the government.

A public address system shall be provided in all common spaces and at outside activity areas. This system shall be interfaced with the mass notification system and the telephone system.

Lightning Protection

Lighting protection will be provided per the RFP for the Operations Facility, Boat Maintenance and Boat Storage Buildings. Installation shall be in accordance with LPI and UL, and receive the UL Master Label.

Wash Rack Facility

All electrical installations for the Wash Rack Facility shall be provided in accordance with the plans and specifications provided in the RFP.

Helipad Facility

Navigation lights for the Helipad shall be provided in accordance with requirements for standard VFR arrangement. Additional lighting will be provided as determined during design phase regarding approach lighting and any additional navigation lighting.

Service to the Helipad shall originate at the point of connection shown in the RFP, with underground 13.8kV distribution to the Helipad site. A new pad mounted, loop feed, transformer with lightning arrestors will be provided in accordance with UFC3-500-10N. Estimated maximum size shall be 30KVA. It will be provided with a separate kilowatt demand meter per SSC standards.

A static grounding system shall be provided per UFC 3-260-01.

APPROACH TO SUSTAINABLE DESIGN

The Broadmoor Design Team understands the expectation of all our clients that we provide a high level of sustainability and life-cycle savings throughout the owner's use of the structure. To that end, we will develop integrated design solutions that:

- Emphasize durability, ease of operation and simplicity of maintenance
- Safeguard against health and safety hazards
- Promote occupant comfort and productivity
- Conserve natural resources and reduce energy consumption
- Avoid adverse effect to the environment
- Consider the future modification of the structure by this owner or subsequent occupants.

The Broadmoor Construction Team likewise recognizes the importance of proper procedures and oversight of field activities in providing both immediate and the long term value to the owner. They will employ measures that:

- Address storm water management and pollution prevention during construction
- Limit disturbance of the site to the most practical extent possible
- Limit the impact of construction activities on neighbors and the environment
- Establish procedures for hazardous or regulated materials.
- Recognize recycling opportunities and assure proper solid waste disposal

Broadmoor also recognizes that our clients must also participate proactively in creating sustainable value as the project progresses by;

- Considering design and cost options that may add initial expense, but will return long term savings and life-cycle value
- Committing to operational policies that sustain or reinforce the value-added features that are built into the project (tobacco use, dust control, waste management)
- Assuring that their current and future personnel are properly trained in the operation and maintenance of the building systems.

We believe that our focus on goals such as these is essential in providing our clients the level of service that has made Broadmoor the leader in the local Design and Construction industry.

Achieving sufficient credits for Certification under the USGBC scoring process, requires commitment from all stakeholders – Design Team, Construction Team and Owner. Broadmoor's standard methodology in the delivery of Design/Build services is centered on interdisciplinary dialogue at all stages of the project development. This process of establishing joint goals and strategies to achieve them is also essential in delivering LEED Certification for the project.

We understand the requirements of the RFP in regards to LEED Certification:

- Preparation of a LEED 2.2 analysis indicating that the Administration Building portion of the project would qualify for at least the minimum points required to meet the LEED classification of "Certified" – 26 credits.
- Pre-register the project with the USGBC
- Submit LEED 2.2 checklist and supporting data to USGC FDDCCLANT for Self-Certification.
- Monitor implementation of LEED strategies during construction.

Stennis Space Center
Riverine Training Facility

Mechanical Design Basis

General:

This section describes the general Basis of Design for the Mechanical systems serving the Riverine and Combatant Craft Operations Facility at Stennis Space Center. The mechanical systems described herein include the plumbing and HVAC systems only. The intent of this description is to adequately and accurately describe the design intent, and prove compliance with the system requirements outlined in the contract.

The project intent is to meet or exceed LEED® Certified requirements. As such, certain design approaches, system configurations, and equipment selections have been tailored to increase operating efficiencies while minimizing operational costs and system complexities.

Mechanical HVAC

The building is served by a central chilled water plant designed specifically for the Riverine Facility. The primary component is a single high-efficiency air-cooled chiller with multiple compressors. The system is designed for 100% of the anticipated, calculated load, but includes multiple compressors to enhance redundancy within the refrigeration system. The final system design is predicated on the following conditions:

Outdoor Design Conditions

Cooling Season:	92°F DB / 82°F WB
Heating Season:	31°F DB

Indoor Design Conditions:

Conditioned Spaces ~

Cooling Season:	75°F DB / 50%RH
Heating Season:	68°F DB

Ventilated / Heated Spaces ~

Cooling Season:	95°F DB
Heating Season:	55°F DB

The system includes a variable primary pumping scheme, which allows the chilled water flow to modulate in response to real-time fluctuations in HVAC cooling load. This capability will significantly enhance the energy consumption characteristics of the facility while increasing the useful life of the pumping equipment. Due to the anticipated small system volume, a buffer tank is included to minimize hard starts / stops by the chiller equipment. The chilled water system includes chemical treatment for rust, corrosion, and scale inhibition.

Air-side system design incorporates the use of central station modular air handlers with variable speed fans (controlled by variable frequency drives). Fan speed is adjusted in real time to deliver only the amount of air required to adequately condition the subject spaces. The building is divided into several zones, predicated on common use, exposure, or specific environmental control

requirements. Each zone is served by a dedicated VAV (variable air volume) terminal unit with electric reheat. The Communications Room is served by a dedicated DX split system sized specifically for the internal load requirements of the space, including equipment, lights, personnel, etc.

Based on the calculated loads for each zone, the electric heat option provides greater system flexibility, reduced operating and maintenance costs, and increased reliability versus a centralized heating hot water boiler system. The heating load for the proposed building is minimal, and the building will require simultaneous heating and cooling throughout portions of the year. Conditions would be common where a natural gas boiler system (comprised of pumps, boilers, controls, etc.) would require operation to satisfy an extremely small heat or reheat load within a small zone or office. In order to eliminate these gross inefficiencies, electric heaters are integrated into the VAV boxes to provide heat (and reheat, where required) to each individual zone without the need for operation of a central heating plant.

The central control system monitors all applicable conditions within the building, and provides system control to automatically maintain appropriate temperature conditions within each zone. User-level interface (thermostats) provides a range of setpoint adjustment; the range is controlled by the master central system. Each central station AHU utilizes a CO2 sensor to implement a Demand Control Ventilation (DCV) strategy, which allows the reduction of outside air delivery during times when the building is sensed to be partially occupied. The Armory zone includes active humidity control in order to preserve the contents of the space during high ambient humidity conditions. The central system interfaces seamlessly with the existing Stennis Siemens® APOGEE® system.

The Boat Maintenance wing of the facility is served by heating and ventilation systems only. Such systems are comprised of electric resistance unit heaters and roof-mounted centrifugal exhaust fans, thermostatically controlled with user-level override.

The Boat Storage Building is served by heating and ventilation systems only. These systems include electric resistance unit heaters and roof-mounted centrifugal exhaust fans on automatic thermostatic controls.

Plumbing Systems

The plumbing systems consist of all necessary fixtures, valves, piping, connections, and trim to form complete and functioning systems. All fixtures are selected based on low-consumption performance characteristics that meet or exceed the LEED requirement for a minimum 20% reduction in water consumption. Water heating is accomplished by utilizing central electric water heaters which exceed the standby loss provisions of ASHRAE 90.1. A recirculating hot water return system is used to ensure prompt delivery of hot water at each fixture while minimizing energy consumption based on piping heat loss.

Fixtures are based on the following characteristics:

Water closets:
Low-Consumption flush valve vit china (Accessible where required)

Urinals:
Low-Consumption flush valve vit china (Accessible where required)

Wall-Mounted Lavatories:
White vit china with 4" centerset low-consumption faucet (Accessible where required).

Showers:
Pressure-balanced valves and trim, accessible personal handshower and support bars where required.

Service Sinks:
Floor-mounted cast terrazzo style mop sink with drop front, mop hanger, and bumper guard.

Kitchen / Break Room Sinks:
Self-rimming stainless steel sink with 8" centerset high arc gooseneck low-consumption faucet with wristblade handles.

Shower / Eyewash Stations:
Pedestal supported combination shower and eyewash per applicable safety standards, including tempered water supply.

Drinking Fountains:
Dual-height push-button wall-mounted water coolers for accessible applications, single station electric water coolers for non-ADA/UFAS applications.

All wall mounted fixtures are supported from the floor using adjustable floor-mounted fixture supports. Wall hangers are not used.

The incoming water service is protected using an approved reduced pressure principle (RPP) backflow preventer per AWWA guidelines. All connections between the potable supply and the mechanical HVAC water systems are through an approved RPP backflow preventer per AWWA.

All mechanical rooms have wall hydrants for cleaning operations. Wall hydrants are installed along the building exterior to permit access along every point of the perimeter with a 100' long hose.

Piping specifications are as follows:

Underground Sanitary Waste: Schedule 40 PVC with solvent weld joints.
Above Ground Waste and Vent: No-hub service weight cast iron pipe and fittings.
Internal Roof Drainage: None Required.
Compressed Air Systems (Non-Medical Use): Galvanized steel with screwed fittings OR Type L copper with soldered fittings.
Domestic Water Supply: Type L copper with soldered fittings.
Chilled Water Piping: Schedule 40 Steel (larger sizes) or Type L copper with soldered fittings. Connections between dissimilar metals shall be prohibited. Dielectric unions or flanges shall be used where applicable.

The Boat Maintenance Building is served by a continuous trench drain and area floor drains discharging into an oil-water separator prior to release to the sanitary sewer system.

In the Boat Maintenance wing of the main facility, the area is served by a rotary air compressor with refrigerated dryer, aftercooler, and filter. Piping is routed through the bay with a minimum of 4 drops, which include a filter pressure regulator and quick-disconnect for attachment of operator tools.

END OF MECHANICAL DESIGN BASIS SUMMARY

ELECTRICAL BASIS OF DESIGN

Design Standards

The following is a list of all design standards used in the design and decision making process:

UFC 3-500-10N	Electrical Engineering
UFC 3-501-03N	Electrical Engineering Preliminary Considerations
UFC 3-520-01	Interior Electrical Systems
UFC 3-530-01	Interior and Exterior Lighting and Controls
UFC 3-580-01	Telecommunications Building Cabling Systems Planning and Design
UFC 3-600-01	Fire Protection Engineering for Facilities
UFC 4-010-01	DoD Minimum Anti-Terrorism Standards for Buildings
UFC 4-021-01	Design and O&M: Mass Notification Systems

Power Distribution

The primary source for power to the facility shall be the existing overhead distribution lines on Lower Gainesville Road. The overhead distribution is 13.8 kV, 3-phase delta. This represents a change from the RFP, which has been approved by the Engineering Department at Stennis Space Center, and the Contracting Officer. The change provided a shorter route to the facility, which stays within the limits of construction. The overhead connection and riser pole was installed for temporary construction power, and permanent power, and has been fully inspected and approved.

The Engineering Department at Stennis Space Center has determined that the overhead distribution is adequate to handle the load of the Facility, based upon an estimate of 300 KVA.

Permanent underground conduit to the facility transformer shall be installed in accordance with Stennis Space Center standards SSTD-8070-0081-ELEC, and consists of 2-4" conduits, concrete encased, with #1/0 AWG, type MV-105, 15kV cables, insulated with 133% EPR.

The pad-mount transformer shall be provided and installed in accordance with Stennis Space Center Standards SSTD-8070-0081-ELEC, with manufacturer submittal approved prior to order. The installation shall include a digital multi-measurement meter, mounted to the pad-mount transformer, also in accordance with Stennis Space Center Standards.

The connected load for the Facility is currently calculated at 459 KVA, which includes all loads based upon actual manufacturer data for all contractor provided equipment. Government furnished equipment is currently estimated, as minimal manufacturer data has been provided at this time. The connected load includes both heating and air-conditioning loads. All loads are listed in the attachment entitled "Electrical Load Analysis" at the end of this document. Based upon and analysis of the loads, in accordance with UFC 3-501-03N Electrical Engineering Preliminary Considerations, and further considerations of end user utilization, the estimated maximum demand load for the facility is 223 KVA.

Based upon these results, the size of the pad-mount transformer shall be 300 KVA. With a total building square footage of 24,005 sq. ft., this represents 12.49 VA/sq. ft., which is under the maximum allowable 13 VA/sq. ft. The next size smaller pad-mount transformer is 225 KVA, which does not provide adequate capacity to satisfy the future growth requirements of 25%.

The primary utilization voltage for the facility shall be 277/480V, 3-phase, 4-wire. This selection is based primarily on the HVAC loads, which consist of a single packaged air-cooled chiller, and electric heat. The most economical and efficient operating voltage for these loads is 480 volts, 3-phase. The use of 277/480V, 3-phase, 4-wire service limits the incoming service capacity to 500 amps, which is most economically provided using panelboard construction.

The service entrance is sized at 277/480V, 3-phase, 4-wire, 500 amps, solid-grounded wye. The calculated fault current at the service entrance is 9021 amps maximum, and is currently based upon infinitely availability on the 13.8 kV distribution system, and a transformer impedance estimated at 4.00 %Z. The impedance will be updated with manufacturer nameplate data when available. The calculations are listed in the attachment entitled "Three Phase calculations short circuit and voltage drop" at the end of this document.

The service entrance equipment will have a bus rating of 600 amps, with 14 KIAC interrupting capacity. All wiring shall be copper, with 600V type THHN insulation, with the exception of the service entrance conductors for both normal and emergency services. These conductors shall be 250 kcmil A-8800 aluminum alloy. All conductors shall be installed in conduit, PVC for below grade, and EMT/rigid above grade.

All transformers shall be copper wound, high efficiency, includes both the pad-mount and dry-type distribution transformers.

An emergency generator, sized at 250 kW, 312.5 KVA at 0.8 power factor, shall be provided to back up the entire facility. This will be accomplished through a 600A transfer switch with by-pass isolation. Generator shall be diesel-driven, with a sub-base fuel tank. The fuel tank capacity shall be selected in accordance with user requirements, and due consideration of emergency operational needs and re-fueling criteria.

Lighting

All interior lighting consists of fluorescent lamps operated by electronic ballasts. The design follows the criteria as set forth in UFC 3-530-01 Interior and Exterior Lighting and Controls, and matching the existing facilities on site where appropriate. The illuminance calculations, including target and calculated footcandles are listed in the attachment entitled "Illuminance Calculation Schedule" at the end of this document. Full point-by-point calculations are provided in the "supplemental documents" portion of the pre-final submittal.

All exterior lighting consists of high-pressure sodium lamps, either building mounted or pole mounted. Full point-by-point calculations are provided in the "supplemental documents" portion of the pre-final submittal.

Lighting controls shall be accomplished in accordance with ASHRAE 90.1 –2004, through the use of a lighting control relay panel. The relay panel shall provide the capability to automatically turn on or shut off all or select lighting loads per the end users needs, and includes all lighting loads (interior and exterior), with the exception of the Boat Storage Building. The Boat Storage Building lighting shall be controlled through the use of mechanical timer switches, which is appropriate given the very limited occupancy periods expected. Exterior wall-mounted HPS fixtures shall be controlled by photocell.

Fire Alarm/Mass Notification System

A complete electrically supervised, addressable intelligent, manual and automatic, fire alarm system has been designed in accordance with respective NFPA/UFC standards and the RFP. Compliance with the requirements for the fire alarm/Mass notification system will be determined by a review of the design and shop drawing submittals by a registered fire protection engineer.

The primary system in the Operations/Maintenance Building consists of a fire alarm control panel, remote annunciator, manual pull stations, smoke detectors, duct detectors, A/V devices, radio transmitter, and supervision of the sprinkler system. The radio transmitter provides reporting to the Base Fire Department. All audio devices in the Operations/Maintenance Building are speakers which will provide Mass notification for the interior and exterior areas around the building.

The Boat Storage Building system consists of a fire alarm control panel, manual pull stations, A/V devices, and supervision of the sprinkler system. All audio devices are horns, as no mass notification is required in the Storage Building.

Telecommunications Cabling System

A telecommunications distribution system shall be provided, consisting of a single distribution frame on the second floor, and horizontal cabling to all outlets as shown on the plans. Per notification by the end user, tempest 2-95 requirements do not apply to this facility. However the horizontal cabling shall still be separated between secure and non-secure systems. Secure cabling shall now be unshielded in lieu of shielding as required by Tempest. All secure and non-secure horizontal cables shall be installed in separate sides of the center hung cable tray on the second floor. Separate outlets shall be provided for secure and non-secure cabling. All outlets have been shown on the drawings per direction of the end user, and coordinated with the concept design submittal of the interior furnishings. Upon acceptance of the interior furnishings, final coordination shall be performed, and all riser diagrams shall be prepared and submitted as shop drawings.

The distribution frame shall be connected to the head end equipment in Building 2606 via an underground ductbank consisting of 6-4" conduits per the RFP and Stennis Space Center Standards. Due to the distance between the New Facility and Building 2606, no multi-mode fiber will be installed as requested in the RFP due to the distance limitations of multi-mode fiber. All fiber shall now be single mode, and consist of two cables, 1-24 strand and 1-48 strand. An additional copper cable, 25-pair, 24 AWG, CAT3, shall also be provided in accordance with the RFP.

CATV

CATV distribution shall be provided in the Operations Facility, utilizing a star topology, with the source in the telecommunications room on the second floor. Cable shall be RG-6 Quad shield. All outlets have been shown on the drawings per direction of the end user, and coordinated with the concept design submittal of the interior furnishings. Upon acceptance of the interior furnishings, final coordination shall be performed, and all riser diagrams shall be prepared and submitted as shop drawings. All equipment shall be installed in the telecommunications room, including amplifiers, taps, compensators, and filters as necessary. Connection to the head end located in Building 2606 shall be accomplished via single mode fiber, with media converters provided at both ends.

Intercom/Public Address System

The RFP requested the installation of an Aiphone system, interconnected to the head end at Building 2606. A request for change has been submitted to upgrade the system to a digital system by Linel, which will integrate into the Electronic Security system. The Aiphone system in the existing buildings may potentially be removed and replaced by the Linel system. At this time, no specifications or equipment submittals have been provided, pending the resolution of the request for change. Device locations have been provided on the drawings, and coordination with the end user will continue while the request for change is considered.

Electronic Security System

An interior/exterior integrated electronic security system device layout has been provided in the pre-final submittal, and consists of access control devices, intrusion detection devices, and CCTV cameras. Further coordination and review with the end user is needed prior to development of specifications, riser diagrams, and shop drawings. All of the above shall be accomplished and submitted under separate cover prior to Final submittal.

Lightning Protection

Lighting protection design has been provided per the RFP for the Operations Facility, Boat Maintenance and Boat Storage Buildings. Installation shall be in accordance with LPI and UL, and receive the UL Master Label. Specifications, shop drawings, and equipment data have been provided in the pre-final submittal.

MILCON P210, SOF RIVERINE & COMBATANT CRAFT OPS FACILITY (SBT-22) STENNIS SPACE CENTER, MS

Fire Protection Basis of Design -

Applicable Codes –

1) UFC 3-600-01, Fire Protection Engineering for Facilities
2) UFC 3-600-10N, Fire Protection Engineering
3) NFPA 101, Life Safety Code
4) NFPA 13, Installation of Sprinkler Systems
5) NFPA 72, National Fire Alarm Code
6) NFPA 10, Standard for Portable Fire Extinguishers
7) IBC, International Building Code

Building 2440/2441 Operations and Maintenance Buildings

Sprinkler System –

System Type - Wet Pipe (all areas are heated)

Hazard Classifications –

Light Hazard - Offices, Conference Rooms, Corridors, Restrooms, Locker Rooms, etc.

Ordinary Hazard Group 1 - Mechanical Rooms, Electrical Rooms, Janitor's Closets, Storage Rooms (under 8').

Ordinary Hazard Group 2 - Boat Maintenance Area.

System Design Area - 3000 ft²
Adjusted down as per NFPA 13:11.2.2.3.1.
Adjusted up 30% as per NFPA 13:11.2.3.2.4.

Boat Maintenance Area - 3900 ft² final design area.

System Density –

Light Hazard - 0.10 gpm/ft²

Ordinary Hazard Group 1 – 0.15 gpm/ft²

Ordinary Hazard Group 2 - 0.20 gpm/ft²

Sprinkler Spacing (maximum)–

Light Hazard - 225 ft²

Ordinary Hazard Group 1 – 130 ft²

Ordinary Hazard Group 2 - 130 ft²

Extended Coverage Sprinklers shall NOT be used.

Piping Materials –

2" and smaller - Schedule 40 Black Steel.

2½" and larger - Schedule 10 Black Steel.

Floor Control Valve Assembly - Each Floor shall have a Floor Control Valve Assembly including a control valve, check valve, pressure gauge, flow switch, and test and drain valve.
All control valves shall have tamper switches.

Supervision -	All control valves and flow switches shall be supervised by the building Fire Alarm Control Panel as per the National Fire Alarm Code.
Hydraulic Calculations -	Systems shall be hydraulically calculated as per NFPA 13 using the Hazen-Williams Equation.
Backflow Preventer -	12 psi friction loss shall be included for each backflow preventer as per UFC 3-600-10N, 2-3.1.1.1.
Hose Allowance -	As per discussions with NAFAC, the Outside Hose Allowance shall be zero (0 psi) since the inclusion of the 500 gpm hose allowance referenced in UFC 3-600-01, Table 4-1 will require the installation of a fire pump.
Seismic Bracing -	Seismic Bracing shall be installed as per NFPA 13, the IBC, and ASCE 7.
Painting -	Sprinkler piping shall be painted with one coat of red alkyd gloss enamel as per UFC 3-600-10N, 2-3.1.7.
Fire Extinguishers -	Portable Fire Extinguishers shall be installed as per NFPA 10.

Building 2442 – Boat Storage Building

Sprinkler System –

System Type -	Wet Pipe (all areas are heated)
Hazard Classifications –	Ordinary Hazard Group 2
System Design Area -	3000 ft²
	Adjusted up 30% as per NFPA 13:11.2.3.2.4.
	3900 ft² final design area.
System Density –	0.20 gpm/ft²
Sprinkler Spacing –	130 ft² maximum.

Extended Coverage Sprinklers shall NOT be used.

Piping Materials –

2" and smaller -	Schedule 40 Black Steel.
2½" and larger -	Schedule 10 Black Steel.
Supervision -	All control valves and flow switches shall be supervised by the building Fire Alarm Control Panel as per the National Fire Alarm Code.

Hydraulic Calculations -	Systems shall be hydraulically calculated as per NFPA 13 using the Hazen-Williams Equation.
Backflow Preventer -	12 psi friction loss shall be included for each backflow preventer as per UFC 3-600-10N, 2-3.1.1.1.
Hose Allowance -	As per discussions with NAFAC, the Outside Hose Allowance shall be zero (0 psi) since the inclusion of the 500 gpm hose allowance referenced in UFC 3-600-01, Table 4-1 will require the installation of a fire pump.
Seismic Bracing -	Seismic Bracing shall be installed as per NFPA 13, the IBC, and ASCE 7.
Painting -	Sprinkler piping shall be painted with one coat of red alkyd gloss enamel as per UFC 3-600-10N, 2-3.1.7.
Fire Extinguishers -	Portable Fire Extinguishers shall be installed as per NFPA 10.

David L. Miller, P.E.
Engineered Fire Protection, LLC

From: SBT-22 Facilities Manager, Dave Everett
To: NAVFAC/ROICC Construction Manager, Paul Mullins
Subj: Proposed changes; Design Review Comments, ROF Combatant Craft Layout Drawings

Paul,

The below listed comments are provided as the most recent summary of comments and design review suggestions for the planned ROF project.

Parking Area – Drawing referenced C2.1

The parking area islands and landscaping presents a nice, but not necessary feature for the user. Unless LEED motivated, user prefers maximum space utilization and minimum maintenance. Any savings could be directed to clear trees at the SE access, near the Boat Ramp.

Discussed at recent review meeting. Trees will be eliminated at POV landscape islands.

Bldg 2440 – Operations Building

1. User requests installation of a Cage area (105) roll-up door (approx 6'W by 7'H) that would replace alcove Rear Entry Door (101) and to relocate the Rear Entry Door (101) under the NE stairway or on the NE side, near the Male Showers (112). **Discussed at recent review meeting. Conflicts with Life Safety egress to replace Rear Entry Door 101 and would require the loss of cages if it was provided in addition to Rear Entry Door 101.**

2. User requests four cameras in Armory (107) area, one directed at entry door(s) and one in each of the three subdivision/caged areas. **Referred to project electrical engineer.**

3. User would like the central area between Entry (102) and Lobby (103) considered as a medical treatment area with various wall mounted medical equipage. **Discussed at recent review meeting. Designer will coordinate with User to provide some items, such as first aid.**

4. User requests relocating the Cage access opening to Male Shower (112) from current location to the center wall, adjacent to the male Head (111). **Male shower 112 access has been revised.**

5. Concern about a Life Safety Code requirement for additional doors that lead to the corridor on the second floor, affecting rooms 204, 207, 209. **Conflicts with furniture arrangement.**

6. User concern/request to consider a second door in rooms 205, 208, 210. **Additional doors are not required. Will confirm with DBFPE.**

7. User requests a metal awning over the exterior stairway at the NE end of building 2440. **Will comply. Metal cover shown by designer on some, but not all drawings.**

8. User requests surrendering one foot of the 12' dimension of the River Ops Control Watch (206) to be added to the 39'10-1/8" dimension of the Briefing Area (203). **Will comply, corrected by designer.**

9. User requests inclusion of floor outlets (if not already specified by Mr. Herve Lara), central in each of the divisible areas on the Briefing Room (203). **Resolved by project electrical engineer.**

10. User requests dimensions of RTUO (210) follow/mimic dimensions of SITUO (203). Resizing RTUO (210) would make the approx wall dimensions would change to 24'11" by 23'6". **Will comply, corrected by designer.**

11. User request the 3' reduction of RTUO (210) be absorbed in RTUO (208) to provide new dimension of 24'11" by 29'-7-3/8". **Will comply, corrected by designer.**

12. User requests the following room re-designation:

    a. SITUO (205) changes to RTUO (205)

    b. SITUCO (204) changes to RTUCO (204)

    c. RTUO (208) changes to SITUO (208)

    d. RTUCO (207) changes to SITUCO (207) **Will comply, corrected by designer.**

13. Consider the corridor (200) alcove area outside River Ops Control Watch (206) as a potential area for shredders, recycle bins, in addition to a common coffee mess area. User requests installed finished counter top, approx 10' long at a height 36-40" above the floor, with power available for small appliances (20A circuit). **Referred to Interior Designer. Designer will provide 12' counter.**

Bldg 2441 – Boat Maintenance/Staging Area

1. Consideration for floor drainage. With the possibility of fuel/oil/coolant spills, user concerns are whether the spills can be contained and directed. Reports are that a floor height, open gutter is included in the RFP to address this concern for containment. **Trench drain system and oil water separator is being detailed by project mechanical engineer.**

2. Overhead 110V, Air and Water service connections. Users requests two overhead hose and reel style service stations that can be dropped/pulled down to provide quick turnaround service without trip hazards in the maintenance floor area. **Referred to project electrical engineer.**

3. 110V, Air and Water service connections throughout the staging area and water hose bibs at six locations (2 per elevation) on the exterior of the building. **Referred to project mechanical engineer.**

4. Floor finish. User recommends a broom finish (not smooth) for some texture/non-slip footfall but also a clear seal coat to minimize absorption of spills and liquids. **Discussed at recent review meeting, broom swept finish is not appropriate, clear seal coat will be provided.**

5. Ensure appropriate outfitting for first aid and AED's. **Will comply, corrected by designer.**

6. Users requests consideration to incorporate two small Weapons Cleaning Machines, possible located on the outside NW exterior wall. **Discussed at recent review meeting, not in RFP, funds not available at this time.**

Bldg 2442

1. Print A2.1 indicates 24 interior bollards inside the building. User requests elimination of these bollards due to the high potential for damage to boats, trailers, and vehicles during transport. **Discussed at recent review meeting, interior bollards have been eliminated.**

2. Platform construction.

    a. Although final confirmation is uncertain, User believes the width of the platform can be narrowed to 48" unless UFC or higher level reference mandates width at 60".

    b. User preference would be for an open-grate steel deck, running the full length of the building. It is suggested that concrete/cement platforms be located inside the stairway access doors, then transition to steel, open-grate deck/platform.

    c. User recommends setting the BOTTOM HEIGHT of the platform/deck walkway at 66".

    d. User questions why there is no conveyance for pedestrian traffic from the platform to the lower building floor area. If needed. The users suggests two 48" stairways, located at a inside point, aligned with the centerline of the exterior stairways.

    Discussed at recent review meeting. Rear platform to be 72" wide, 84" high, with 66" clear underneath, open grate steel deck, running the full length of the building. Four interior stairways are being provided with exterior stairway system being eliminated.

DESIGN COORDINATION AND REVIEW - COMMENTS
NAVAL SPECIAL WARFARE COMMAND, SAN DIEGO, CA

PROJECT MANAGER: **Terry Artrip, NAVFACSE**			
COMMENTS BY: **Sam Martindale, P.E.**	CODE: **N4412**	PHONE: **619-447-0772**	DATE: 12 Feb. 2009
PROJECT TITLE AND LOCATION: **MILCON P210, SOF RIVERINE & COMBATANT CRAFT OPS FACILITY (SBT-22) NASA STENNIS SPACE CENTER, MS**			TYPE OF REVIEW: **65% Design**

NO.	DWG.NO. or SPEC.SECT.	COMMENTS	A-E RESPONSE
1	**All Dwgs**	Follow requirements in UFC 1-300-2 and UFC 1-300-09N. Use the standard labeling , section cut, and detail bubble labeling system. At the start of each discipline there should be a discipline title sheet with list of abbreviations and a legend of symbols use in the sheets with that discipline.	**Corrected by designer.**
2	**Dwg T-1**	Index of Drawings: Add a column for NAVFAC Drawing Numbers. They are issued after the pre-final submittal via the NAVFACSE IPT PM.	**Corrected by designer, column added to Sht. Cover 1.**
3	**Dwg T-2**	IBC 2006 Notes: Please verify the references to sections 903 and 907. The wording is odd. You start out saying not required and then in the second sentence indicate the item will be provided. I believe the UFC governs each of these items and not the IBC. Please verify requirement list in the RFP and with the NAVFACSE Fire Protection Engineer.	**This is being re-written by the Architect to clarify compliance with each code involved.**
4	**Dwg S2.1**	This sheet is labeled as "Storage Building Foundation." This sheet shows the entire compound and the surrounding area and seems to be mislabeled. 1. A foundation plan needs to be a larger scale focusing on the buildings only, with a large enough scale to see all necessary dimensions and showing section cuts for details. 2. A foundation plan needs to show the coordinates for at least two corners to each building, otherwise how is an accurate location assured? 3. Why show on these drawings the wash rack, the helo-pad, the new sheet pile wall, and the launch ramp work, when none of these options have been awarded?	**This sheet has been relabeled as C1.1.** **1. Foundation plan for Boat Storage Building 2442 is now labeled S2.1.** **2. Coordinates will be added by engineering staff.** **3. Non awarded options have been deleted.**

5	**Dwg S.??**	Seem to be missing all structural sheets showing structural framing. You need to submit a complete all in one package, even though you may be using a vendor for the building .	**Sht. F1.1, Bldg. 2440 Flr. Framing Plan added to package. Further details to be added to package.**
6	**Dwg C 2.1**	Repeat Comment – Have you obtain NASA concurrence to connection the POV lot to Lower Gainsville road? This drawing is labeled as "Overall Drainage Plan." Normal practice is to show the new contour lines. Provide the full description of the Benchmark to be used the construction of this project, both vertical and horizontal controls.	**Broadmoor has received an email from Paul Mullins dated March 5, 2009, indicating approval.** **Contour lines and benchmark data to be added by engineering staff.**
7	**Dwg C 2.2**	Please clarify the various diagonal lines. Do they represent drainage swales? If yes don't we need a construction detail? **Repeat Comment:** Change the enclosure around the trash dumpster. For durability make the fixed wall CMU block, match color and type use on the buildings. Entrance way should be swing and lockable metal gates, either solid painted steel or galvanized chain-link fence with privacy slats.	**Clarified on symbol schedule Sht. C1.0. Construction details provided on Sht. C2.1.** **Dumpster enclosure revised as per comment.**
8	**Dwg C 2.3**	The fence line crosses the compound entrance driveway. Need to show and specify a gate. Is it double swing or sliding? Does it need to be automated? Do we need a badge swipe and video camera connected to the Main SBT 22 quarter deck?	**A gate with all accessories will be provide in accordance with recently received UFC. Video camera to be building mounted.**
9	**Dwg C 2.4**	All these details need the appropriate labeling bubble indicate the detail number, the from sheet and the to sheet (this sheet).	**Corrected by designer.**
10	**Dwg C 3.1**	The abbreviations used on this sheet needs to be on the Civil Title sheet. The details on sheet C 3.2 need section cut bubbles from this sheet.	**Corrected by designer.**
11	**Dwg C 3.2**	All these details need the appropriate labeling bubble indicate the detail number, the from sheet and the to sheet (this sheet). The Legend on this sheet needs to be on the Civil Title sheet.	**Corrected by designer.**
12	**Dwg C4.1**	Label the sidewalk that surrounds the Boat Storage Building.	**This sidewalk is being deleted beyond building personnel entrances.**

13	**Dwg S 1.1**	Show section cuts on the plan view with corresponding details on this sheet.	**Corrected by designer.**
14	**Dwg S 1.2**	Bollard Detail: Where is this detail used in plan view? Add a Detail bubble to the label line similar to how you labeled Section A and B. If this is protecting some structure from vehicle impact, suggest you increase the height to 4-5 ft to make sure it is visible from the backing maneuvers of the large SBT-22 vehicles (large pickups and Vans.)	**Corrected by designer.** **Bollard detail corrected as per recent review meeting discussion.**
15	**Dwg S 2.1**	Bollard Detail: Where is this detail used in plan view? Add a Detail bubble to the label line similar to how you labeled Section A and B. If this is protecting some structure from vehicle impact, suggest you increase the height to 4-5 ft to make sure it is visible from the backing maneuvers of the large SBT-22 vehicles (large pickups and Vans.)	**Corrected as per Item No. 14 above.**
16	**Dwg A 1.1**	The shower area needs a drying area with benches and towel hangers as you exit the shower. Appears that you may have to delete 2 cages to make this happen. Many abbreviations on the see that should be displayed on Architectural Title sheet – see comment #1.	**Shower area revised as per recent review meeting discussion.** **Corrected by designer.**
17	**Dwg A 1.1 Second**	Sheet should be A 1.2. Add term EWC to legend. Does the Coffee counter in the hallway include a sink and garbage disposal? For the counter in the River Ops Control Room, please indicate the inclusion of slots spaced evenly apart to allow the pass through of computer power cords and other connection cords.	**Corrected by designer.** **Corrected by designer.** **Yes, corrected by designer and I.D. staff.** **Corrected by designer and I.D. staff.**
18	**Dwg A 1.3**	The bottom have of the Section A label bubble have the numbers reversed. The left side indicates the from sheet and should list A1.1, A1.2 and the right side indicates the to sheet and should list A 1.3.	**Corrected by designer.**
19	**Dwg A 1.4**	Add a detail bubble to the section label line that provides a section number or alpha designation and show the from and to see sheet.	**Corrected by designer.**

20	**Dwg A 1.6**	The elevation views on the building should be showing a rain gutter and down spout system for handling the rain fall off the roofs. The label for the bollards should include the standard detail bubble, with the top half indicating the detail number on sheet where the detail is shown, the bottom left half indicating the from sheet (A 1.6), and the bottom right half indicating the to sheet (C 1.3). Also per my previous comments the height needs to be 4-5 feet tall in order to be seen from the larger SBT22 vehicles, while backing.	**Designer coordinating gutter and downspout system with Met. Bldg. provider.** **Corrected by designer.**
21	**Dwg 1.7**	There is a disconnect between this sheet and the architectural roof plans sheet, as to whether the exit stairs have a covered roof.	**Covered roof to be indicated on all appropriate drawings.**
22	**Dwg A 1.10**	Make the following changes /improvement to the design: For the first floor male shower – Per my comments at the CDW provide an entry area to the shower that provides an area for users to both undress and to dry post shower. This area should be large enough to support at least 50% of the occupancy of the shower. It should have a continuous bench along the wall and multiply hooks for hanging clothing and towels. Inside the shower area, what is the purpose of the hook adjacent each shower head? Instead of the hook, provide at each shower head a small stainless steel shelf for placing personal shower items like shampoo bottles, soap bars or body soap bottles, etc. In all restrooms (Heads) provide a seat protector dispenser behind each toilet. Inside each toilet stall provide a hook to hang jackets. Near the entrance door provide a stainless steel shelf to place items a person may be carrying, such as file folder, clip boards, drinks, etc. I expect better performance from your designer on these types of details. Even your Design QCM should be able to pick up on these types of items. I should not have to police you to provide a quality product you can be proud of.	**Shower and restroom details to be revised in accordance with discussion at recent review meeting to include the changes/improvements indicated.**

23	**Dwg A 1.?**	Sheet following A 1.10 is the roof plan for the combined Operations and Maintenance buildings, but is mislabeled in the vertical title block. Looks like sheet number should be A 1.11.	**Corrected by designer.**
24	**Dwg E 1.0**	Nicely done electrical discipline title sheet. Good layout and very comprehensive. Good Job!!!	**Response by others.**
25	**Dwg E 2.1**	Recommend adding a double head fixture (a fixture on opposite side of the pole) to the F11A light pole near the pedestrian walkway between the parking lot and the Riverine Compound.	**Response by others.**
26	**Dwg E 4.1**	Need to increase the number of outlets in the walls around the perimeter of the SEAL cage room. Need both for now with access from the rear of the cages. Also go for the future in case the room's occupancy is changed. Need a NP outlet in the Armory. Need a NP and SP outlet in the CSS office.	**Response by others.**
27	**Dwg E 4.2**	I don't see any NP or SP outlets on the second floor. Coordinate with the occupant to determine the best placement and provide an adequate number per the RFP and to provide coverage throughout the floor.	**Response by others.**
28	**Dwg P 1.1**	Where is the grease interceptor for the trench drain and where is the associated piping? Is this to be shown on the P-drawings or the C-drawings?	**Response by others.** **We will also indicate these items on our "C" sheets.**
29	**Dwg P 1.2**	Does the hallway coffee counter need a sink and disposal?	**Response by others.** **See Item #17 above.**
30	**Specs**	Section 01331N, paragraph 1.7.1 of the RFP requires the submitted design specification to be in the current CSI Masterformat. As such, you need to meet the current specification numbering scheme indicated on the Whole Building Design Site and on the CSI website (http://www.csinet.org/s_csi/sec.asp?TRACKID=&CID=5&DID=5)	**Specifications to be revised to Specsintact system as per discussion at recent review meeting.**
31	**Specs**	General Comment: Many sections in this submittal are out of order, making review difficult. This also shows a poor Design Quality Control. Please correct at the next submittal.	**Specifications to be revised to Specsintact system as per discussion at recent review meeting.**

32	**Specs**	Section 02300, paragraph 3.17 makes reference to a Division 2 Section covering sub-drainage. That section is not included.	**Specifications to be revised to Specsintact system as per discussion at recent review meeting.**
33	**Specs**	Section 02300: paragraph 3.22 refers to "owners property." Change that to indicate "Station." Regarding any project requirements indicating soil to be obtain or disposed of, do not indicate availability from the station or that the station is a place of disposal. All import shall be from off station and all export shall be to off station. Regarding the language in sub-paragraph B, that the Architect shall direct consider the following: • While the design and construction is internal to your organization, how much involvement do you want the architect to provide? • If you are allowing the Architect or Design of Record to provide direction to the construction crew, consider that any direction that changes contract time or cost can only come from the Contracting Officer and if such direction is given without the Contracting Officer involvement it will be at your own risk and cost.	**Specifications to be revised to Specsintact system as per discussion at recent review meeting.**
34	**Specs**	Sections 81113, 84113, and 85113 all need to indicate a compliance of doors, window, amd their frames to ATFP blast loads, as prescribe by the RFP.	**Specifications to be revised to Specsintact system as per discussion at recent review meeting.**
35	**Calcus**	The calculations are now much more complete and thorough. However they are still missing key Civil Engineer calculations showing hydrology and drainage structures capacities. Include these and the calculations from the building vendor showing structural members and column foundation loading at the pre-final submittal. Failure to submit a complete package will be grounds for rejection.	**Additional / complete calculations will be provided at the pre-final submittal.**
36	**Design Pkg**	The Design Quality Control Manager need to thoroughly review the entire design submission package to ensure it is complete, meets UFC and RFP requirements, and to look for inter-discipline coordination errors.	**The DQC will comply with UFC / RFP requirements.**

37	**Annotated Comments**	I did not receive the annotated comments from by concept design review. This is standard practice and professional courtesy to answer my comments from the previous submit at each submittal stage. Again failure to do so at the pre-final will be cause for rejection.	**Response to comments from concept design review forwarded on March 2, 2009.**

DESIGN COORDINATION AND REVIEW - COMMENTS
NAVAL SPECIAL WARFARE COMMAND, SAN DIEGO, CA

PROJECT MANAGER: **Terry Artrip, NAVFACSE**

COMMENTS BY:	CODE:	PHONE:	DATE:
Sam Martindale, P.E.	**N4412**	**619-447-0772**	05 Nov. 2008

PROJECT TITLE AND LOCATION:
MILCON P210, SOF RIVERINE & COMBATANT CRAFT OPS FACILITY (SBT-22) NASA STENNIS SPACE CENTER, MS

TYPE OF REVIEW: **15% Design**

NO.	DWG.NO. or SPEC.SECT.	COMMENTS	A-E RESPONSE
1	Dwg T-1	Please use the standard NAVFAC Title block and a D-Size sheet. Follow requirements in UFC 1-300-2 and UFC 1-300-09N.	**Completed by designer.**
2	Dwg T-1	Delete "New Government Facility" from the title. Add to the title first line – "FY2008 MILCON P-210." Add to the second line "SOF" Riverine … Add to the fourth line "NASA" John C. Stennis	**Completed by designer.**
3	Dwg T-2	Change title similar to first sheet.	**Completed by designer.**
4	Dwg C 1.1	Plan view orientation appears to close to NASA facilities per approved site approval. See FEAD for copy. May need to rotate clockwise about 30 degrees.	**Adjusted by Architect, completed by designer.**
5	Dwg C 2.1	Connection of the POV lot to Lower Gainsville road is not per RFP and the NASA site approval. To connect as soon you will need to seek approval. Mr. Mullins may help, but it becomes your responsibility as you are making the deviation.	**Discussed at CDW, desired by User. Broadmoor to review with NASA/Mullins.**
6	Dwg C 3.1	The trash enclosure is usually a masonry wall on three sides with dual swing steel gates. Check for NASA base requirement and UFC guidance.	**Corrected by designer.**
7	Dwg C 4.1	Does the shrub line around the main compound perimeter pavement, but inside the fence line meet with ATFP sight visibility and requirements not to create a visual barrier allow placement of possible explosives?	**The only shrubs inside the fence line are around the trash enclosure.**
8	Dwg S 1.1	The concrete strength listed in the foundation notes does not match the center page note indicating 4000 psi.	**Corrected by designer.**
9	Dwg S 1.2	The concrete strength listed in the notes does not match the strength notes on each detail.	**Corrected by designer.**

10	**Dwg A 1.1**	On all future submittals provide a large text font note listing the total floor square footage and the total building square footage for 2 story buildings. In the case of this sheet list square footage for the Ops building and the maintenance building separately.	**Corrected by designer.**
11	**Dwg A1.2**	On all future submittals provide a large text font note listing the total floor square footage and the total building square footage for 2 story buildings.	**Corrected by designer.**
12	**Dwg A 1.2**	I am not convinced that the location of the River OPS Control Watch room is the best view of the river. Particularly if the Building and site rotates clockwise in order to meet NASA site requirements. I am thinking the River Ops watch room needs to switch with the Tel. Comm/Comm rooms.	**The corner window gives the same view (and more) as a window from the Tel. Comm. Room.**
13	**Dwg A 1.7**	On all future submittals provide a large text font note list the total floor square footage and the total building square footage for 2 story buildings. In the case of this sheet list square footage for the Ops building and the maintenance building separately	**Corrected by designer.**
14	**Dwg A 2.1**	On all future submittals provide a large text font note listing the total floor square footage of this buildings	**Corrected by designer.**

DESIGN COORDINATION AND REVIEW - COMMENTS
NAVAL SPECIAL WARFARE COMMAND, SAN DIEGO, CA

PROJECT MANAGER: **Terry Artrip, NAVFACSE**			
COMMENTS BY: **Sam Martindale, P.E.**	CODE: **N4412**	PHONE: **619-447-0772**	DATE: 03 APR. 2009
PROJECT TITLE AND LOCATION: **MILCON P210, SOF RIVERINE & COMBATANT CRAFT OPS FACILITY (SBT-22) NASA STENNIS SPACE CENTER, MS**			TYPE OF REVIEW: **Final Early Start Design Boat Store Bldg FND**

NO.	DWG.NO. or SPEC.SECT.	COMMENTS	A-E RESPONSE
1	**All Dwgs**	Vertical Title Block: Make the following changes/corrections- Fill in First Initial – Last Name of the Designer, Draftsman (DRW), Reviewer (the Design QC Manager), and the PM (T. Artrip) Fill in your Construction Contract Number.	Title block filled in. Number filled in.
2	**Dwg S2.1**	For Sections A and B: To be consistent, change the Compacted Fill note to read: "Compacted Fill, 12" Minimum – Compacted to 95% per ASTM 1557."	Note has been corrected.
3	**Dwg S2.1**	For Sections A and B: the note indicating 4000 psi concrete does not match the specifications.	Specification has been corrected.
4	**Specs**	Section 03 31 00.00 10: Paragraph 1.6.2.1 The compressive strength list for slab on grade does not match the call outs found on sheet S2.1. Please coordinate.	Specification has been corrected.
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Riverine and Combatant Craft Operation Facility
Stennis Space Center, MS
URS 50% Design Submittal Comments

General	Comments
Basis of Design	The "Design Analysis/Basis of Design" is supposed to be a presentation of facts to demonstrate the concept of the project is fully understood and the design is based on sound engineering principles. At the next submittal, please provide a Design Analysis/Basis of Design prepared in accordance with RFP Section 01331N, Paragraph 1.8. Please refrain from the use of acronyms in text without having written out the full name previously. Example: "SWPPP" on the first page of this section. **Will provide at next submittal.**

Civil Drawings	Comments
General	Confirm the correct drawing border to use with NAVFAC Southeast. **Corrected by designer.**
General Civil	Provide graphic scales on civil sheets. **Corrected by designer.**
General Civil	Provide general notes establishing the horizontal and vertical datums. **To be provided by engineering staff.**
General Civil	No information has been provided in drawings and specifications regarding required additional geotechnical engineering services, undercutting of building and pavement areas, and replacement with compacted select fill. Please provide in accordance with RFP Project Program, G103099. **Will provide at next submittal.**
General Civil	No alignments or details have been provided for utilities to support the facility, which include water, sewer (including lift station) and natural gas. **Will provide at next submittal.**
Cover 1	Indicate the progress level of Submittal on the cover for all future submittals (e.g. 50% Submittal, 100% Submittal, etc.). All documents submitted for review should establish what submittal they are part of. **Corrected by designer.**
Cover 1	Update the Index of Drawings, it currently doesn't include any mechanical or electrical drawings.

Corrected by designer.

C1.1 The sheet number and title appear incorrect.

Corrected by designer.

C1.1 Would be helpful to have site plan sheets similar to C2.2 and C2.3 that have only site plan features. Then site plan features could be removed from C2.2 and C2.3 leaving more room for the grading and drainage information that needs to be provided.

Corrected by designer.

C2.1 Some of the details and notes on this sheet are duplicates of ones on C5.2. Suggest only including once.

Corrected by designer.

C2.2 Correct the sheet title to 'Drainage Plan Part 1'.

Corrected by designer.

C2.2 Because there's so much being shown on this sheet, recommend freezing layers that are covered on other sheets (e.g. silt fence, hay bales, work area, proof rolled site access roads, etc. are all shown on SWPPP dwgs.).

Corrected by designer.

C2.2 It is not clear what the 77'–55 $^{5}/_{8}$" dimension at the top center of the page is dimensioning from.

Corrected and removed by designer.

C2.2 Minimum AT standoff distance line is confusing. Minimum AT standoff should be shown around individual buildings, not limits of paving. Ultimately it appears as though the only building affected by a standoff is the Operations Building. An 82' standoff should be shown around this building.

Corrected by designer. Minimum AT standoff line is shown around Operations Building 2440 & 2441 on Shts. C1.1, C1.2, and C1.3.

C2.2 Ensure the required security fence clear zones are being met in accordance with UFC 4-022-03, Security Engineering: Fence, Gates, and Guard Facilities. This requires 20 feet clear outside the fence and 30 feet clear inside the fence, from any structure, parking, or other site feature.

Corrected by designer, verified by Architect.

C2.2 In the lower left corner of the sheet there is a 'Conventional Standoff Distance 148'' note pointing in space. This project falls within a controlled perimeter, therefore this 148' standoff doesn't appear to be applicable to this project, please delete.

Deleted by designer.

C2.2	How is motorcycle parking being designated; by sign, pavement markings, or other? Please indicate and detail.
	Designation is by sign and markings with details in pre-final documents.
C2.2	Provide signs in front of handicap, fuel efficient vehicles and carpool/vanpool parking spaces. Provide details.
	Signs will be provided with details in pre-final documents.
C2.2	Provide concrete curb and gutter or curb adjacent to all landscape islands in accordance with G202002.A.
	Corrected by designer.
C2.2	Drainage curb callout indicates detail is on this sheet. Detail is on drawing C3.2.
	Corrected by designer.
C2.2	Provide details at next submittal for: security fence and gates; dumpster enclosure; all concrete pads (e.g. antenna, chiller, cond., transformer, generator, dumpster, etc.); etc.
	UFC for fence, gates, and turnstiles just received. All details will be provided in pre-final documents.
C2.2	Callout and detail required pedestrian turnstile with card reader control between the parking lot and the Operations Building in accordance with RFP G204001.D.
	UFC for fence, gates, and turnstiles just received. All details will be provided in pre-final documents.
C2.2 and C2.3	Currently there is not enough geometry on these sheets to construct the project. Please provide all geometry for the project.
	Geometry is being provided by engineering staff.
C2.2 and C2.3	Adequate information has not been included to evaluate the overall drainage intent. Very few proposed grades have been provided; water is shown flowing thru curbs and uphill; water appears to flow to areas that are not prepared to receive the water; no structures are indicated; etc. Provide a complete design along with proposed grades, proposed contours, top and bottom of bank locations for swales, structures, etc. Be sure all off site runoff has been addressed.
	Complete design is being provided by engineering staff.
C2.2 and C2.3	Address on the drawings what the 100-year Flood Elevation is so it's clear all buildings and equipment pads are above it. Provide elevation for tops of all slabs.
	Elevations provided by engineering staff.

C2.2 and C2.3	Sidewalks around buildings are called out as 5' wide, but most of them appear to be drawn at less than that?
	All sidewalks will be min. 5' wide and will be dimensioned on plans.
C2.2 and C2.3	Provide pavement markings and signage at the next submittal.
	Corrected by designer.
C2.2 and C2.3	Provide bollards at all vehicle access doors for the Boat Maintenance Building and the Boat Storage Building in accordance with RFP G202005.B.
	Bollards will be provided in accordance with discussion at recent review meeting, 4' high, in locations as requested by User.
C2.2 and C2.3	Provide signage for the facility in accordance with RFP G204005.
	Signage will be indicated on pre-final submittal.
C2.2 and C3.1	Parking lot site plan on C2.2 doesn't agree with paving plan on C3.1. One indicates plantings at the center of the parking lot and the other indicates an 8' sidewalk?
	Corrected by designer.
C2.3	Provide and detail motor operated double sliding vehicle access gate with card reader control on both sides in accordance with RFP G204001.C.
	Will be provided and detailed in accordance with recently received UFC.
C2.3	Coordinate location of lockable, single leaf swing gates with Users. Currently, one is located behind a curbed area and the other is located next to a swale/ditch.
	Discussed at recent review meeting and will be provided in accordance with User desires.
C2.3	Clarify the drive has an asphalt width of 24' as required by RFP G2010.A.
	Drive will be min. 24' wide and shown by designer.
C2.3	Delete reference to boat ramp widening work or say not in contract.
	Corrected by designer.
C2.3 and C3.2	C2.3 indicates drainage curb along the south side of the asphalt drive 'only', but C3.2 indicates a 6" curb along the north side of this same drive? Please clarify which is correct; it seems odd to have curbing along only one side of a road.
	Corrected by designer, all curbs along roadways have been deleted.
C2.4	Some of these details belong on paving detail sheets, not on the drainage detail sheet.
	Corrected by designer.

C2.4	Where are the 'Joints' and 'Parking Bumper' details intended to apply?
	Will be corrected by designer and engineering staff.
C3.1	Detail concrete motorcycle parking in accordance with RFP G2020.A.
	Will be detailed by designer.
C3.1	Concrete bicycle rack slab and sidewalk along south side of parking lot are not shown on this plan? Provide adequate information for construction of bicycle rack slab.
	Will be corrected by designer and engineering staff.
C3.1	Where does drainage curb start and stop? Limits are not clear on this drawing.
	Corrected by designer.
C3.2	We suggest removing the 3 big dark circles (existing dolphin) falling across the details. This applies to other sheets as well.
	Corrected by designer.
C3.2	Some text in the details on this page are showing up larger than they should and it's overlapping other text.
	Corrected by designer.
C3.2	Detail "A" – The initial saw cut is not deep enough. For 7" concrete we suggest saw cut be at least 2 inches deep.
	Corrected by designer and engineering staff.
C3.2	The curb detail indicated on this sheet will not work for the drainage curb indicated along the asphalt drive.
	Corrected by designer.
C3.2	Expansion Joint (EJ) – The joint type shown does not appear to contain any expansion joint material and is not really an expansion joint. It appears this should be a construction joint or doweled control joint.
	Will be corrected by designer and engineering staff.
C3.2	Keyways are not desirable with concrete pavement this thin (7"), please revise details.
	Will be corrected by designer and engineering staff.
C3.2	Asphalt Roadway Section – Please make it clear if this section also applies to parking lot pavement. Indicate all required tack and prime coats at base and between lifts.
	Will be corrected by designer and engineering staff.
C3.2	Asphalt Roadway Section – Note for excavating 10" is not clear in intent.
	Corrected by designer.

C3.2	Sidewalk Joint – Define depth of WWM placement and provide detail for expansion joint.
	Will be corrected by designer and engineering staff.
C4.1	Correct the sheet title to 'Landscaping Plan Part 1'.
	Corrected by designer.
C4.1 and C4.2	Add landscaping callouts to these Landscaping Plans.
	Corrected by designer.
C4.1 and C4.2	In accordance with RFP PTS G205005, provide required concrete edging material, weed fabric and 3" of mulch. Two inches of mulch is currently indicated in the details on C4.2.
	Corrected by designer.
C4.2	Handicap details shouldn't be shown on Landscaping Plans.
	Corrected by designer.
C4.2	Handicap Parking Sign – Proposed handicap parking spaces don't appear to be sized as van accessible. Either revise size of parking spaces or remove van accessible sign from this detail.
	Corrected by designer.
C5.1	Text is falling off the right side of the sheet.
	Corrected by designer.

Civil Specifications	**Comments**
Division 1	The Division 1 Specifications should be taken directly from Part 2 of the RFP, unedited, and included as the project Division 1 Specifications. Please delete any overlapping Contractor prepared Division 1 sections included with the 50% Submittal.
	Corrected by Architect.
02300	In accordance with the RFP, please resubmit this section as UFGS 31 23 00.00 20, Excavation and Fill.
	Corrected by Architect.
Missing Civil	No specifications have been provided for: clearing and grubbing; undercutting; water; sewer; storm; natural gas; landscaping (sod, seed, plantings, etc.); asphalt pavements and base course; concrete pavements; pavement markings; and fencing and gates. In accordance with the RFP, submit the following UFGS Specifications: 31 23 00.00 20, Excavation and Fill 32 11 26.16, Bituminous Concrete Base Course

	32 11 16.16, Base Course for Rigid and Subbbase Course for Flexible Paving
	32 11 24, Graded Crushed Aggregate Base Course for Flexible Pavement
	32 10 00.00 25, Bituminous Concrete Pavement
	32 12 10, Bituminous Tack and Prime Coats
	32 13 13.06, Portland Cement Concrete Pavement for Roads and Site Facilities
	32 17 23.00 20, Pavement Markings
	33 40 01, Storm Drainage
	In general, specification manual will be submitted at pre-final in Specsintact format. Proposed table of contents will be provided prior to that as discussed at recent review meeting.
General	Has a submittal register been developed for this project? Please provide with 100% Submittal.
	Submittal Register initiated on January 7, 2009 and will be provided at pre-final submittal.

Structural Drawings	**Comments**
S1.1	Detail "Typical Beam" indicates draped strand in the concrete beam. Plan and calculations do not show that. Please coordinate.
	Post Tensioned system deleted as of 3/11/09.
S1.1	Foundation General Notes refer to pile foundation, but there is no indication of a pile foundation in the plan. Please coordinate.
	Corrected by designer.
S1.1	There is no second floor framing plan included in the submittal for Bldg.2440?
	Sht. F1.1, Bldg. 2440 Flr. Framing Plan added to package. Further details to be added to package.
S1.1, S1.2 & S2.1	Detail "Typical at all overhead doors" refers to sheet C-3, which is not in this submittal.
	Corrected by designer.
S1.2 & S2.1	Calculations call for 6" post-tensioned slab and 7" reinforced concrete, but drawing shows 5" in "typical control joint detail" and 8" in sections A/S1.2 and B/S1.2. Please coordinate the thickness and type of structural system for the slab (reinforced or post-tensioned).
	Post Tensioned system deleted as of 3/11/09. Calculations and details to be revised by engineering staff.

S2.1	Provide reinforcing and thickness for 5x5 level landing. **Will be provide by designer and engineering staff.**
S-01 (shop dwg.)	In these shop drawings, what does note under Foundation Plan "Max. fill height allowed = 20 inches" mean? **Shop drawing will be revised and resubmitted.**
S-01 (shop dwg.)	Notes on these shop drawings should be revised to be project specific. **Shop drawing will be revised and resubmitted.**

Architectural Drawings	**Comments**
General	Provide a sheet indicating symbols, abbreviations, and their meaning (sheet cut on, sheet shown on, etc.). Locations of section cuts shown in this drawing set are difficult to trace. **Corrected by designer.**
General	Provide a Life Safety Plan for each building indicating fire separations, access to exits, exit capacity, occupancies of each space, travel distances to exits, etc. **Life Safety Plan to be provided by DBFPE and coordinated with Architect.**
General	Why is 5/12 roof slope proposed on Buildings 2440 and 2442 and 4/12 slope proposed on Building 2441? **As discussed at recent review meeting, to avoid undesirable roof plan.**
Cover 1 and 2	Delete "NASA" from title of the project. **Corrected by designer.**
Cover 2	Obtain written concurrence of NAVFAC Fire Protection Engineer that the Maintenance and Staging Building (2441) is F-1 occupancy instead of H occupancy. **Will be coordinated by Architect.**
Cover 2	None of the square footages for space or floor match the square footages indicated on the drawings (A1.1 or A1.2). As an example: 1st Floor – 8,759 SF vs. 8,584 SF; Cages – 4,467 SF vs. 4,516 SF; Armory – 1,456 SF vs. 1,484 SF; and Maint/Staging area – 6,642 SF vs. 6,879 SF. The number of occupants may need to be re-stated once you determine which statements of area are correct. **Corrected by designer.**
Cover 2	Under "Exit Access Requirements," the correct reference should be to Table 1015.1 (not to Section 1014), and the correct wording should be that "2 exits are required for greater than 49 occupants." **Will be corrected by designer and Architect.**

Cover 2	For exits from the Armory, refer to 1015.2.1, Exception 1, which says that for buildings equipped with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2, the separation distance of the exit doors shall be not less than 1/3 of the length of the maximum overall diagonal dimension of the area served. You may need to add an exit or move one of the exits further from the other.
	Will be reviewed and coordinated with DBFPE. Occupant load of 15 may require only one exit.
Cover 2	Exit access travel distance per Table 1016.1 is 250 feet for F-1, occupancy with a sprinkler system, not 300 feet as indicated on this drawing.
	Corrected by designer.
Cover 2	Delete Exit access travel distance for H-1 occupancy if there is no H-1 occupancy area.
	Corrected by designer.
Cover 2	Allowable Height and Building Area has conflicts. First floor of Building 2440 is not 6,554 SF on the 1st floor, nor 6,682 SF on the 2nd floor (per Sheet A1.1). Similarly, Building 2441 stated area of 8,098 SF does not agree with Sheet A1.1. Please revise after you have rectified the actual square footages.
	Areas to be corrected by designer and will be reviewed by Architect.
Cover 2	Despite the fact that the Facility (Stennis or NAVFAC) has designated 2440 and 2441 as two buildings, are they not - for construction and code purposes – one building with 'mixed use (non-separated) occupancy? If so, how does this affect the code analysis? If they are two separate buildings, it appears that they could require a fire-resistant wall between them per Table 602 (X<5 feet).
	Will be reviewed and coordinated with DBFPE. Architect intends to detail a rated wall between 2440 & 2441.
Cover 2	Verify that a fire protection system is required by 903.2.3 as stated in your code analysis.
	Will be reviewed by Architect.
Cover 2	Verify Basic Wind Speed of 130 MPH, since this indicates it came from Figure 1609 (IBC) alone, not from IBC, ASCE 7-02, and UFC 3-310-01, as required by RFP Part 4, Section B10 1.3.2.2.
	UFC 3-310-01 calls for Wind Speed of 130 MPH at Stennis. Engineering staff to review.
Cover 2	Use Importance Factor of II per RFP Part 4, Section B10 1.3.2.1, not III as indicated on this drawing. Recalculate all design loads listed based on the correct parameters.
	Will be reviewed by engineering staff.

Cover 2	Life Safety Code Analysis – Add Building 2442 to this analysis.
	Will be reviewed and coordinated with DBFPE and added to package.
Cover 2	Life Safety Code Analysis – Per NFPA 101, Table 6.1.14.4.4(b), Business Occupancies are required to be separated from all Industrial and Storage occupancies by 2-hour rated construction (and may be reduced to 1-hour with an approved automatic sprinkler system).
	Will be reviewed and coordinated with DBFPE.
Cover 2	Life Safety Code Analysis – Check square footages, they need to match what is on the plan sheets.
	Will be reviewed and coordinated with DBFPE.
Cover 2	Life Safety Code Analysis – Verify whether or not the Armory is a High Hazard Occupancy, and modify your analysis accordingly.
	Will be reviewed and coordinated with DBFPE.
Cover 2	Life Safety Code Analysis – Use of 100 SF/ person and 45 occupants for cages conflicts with Building Code analysis. Please be consistent.
	Will be reviewed and coordinated with DBFPE.
Cover 2	Life Safety Code Analysis – Exit Access Travel Distance for sprinklered General Industrial Occupancies is 250 feet per Table A.7.6., not 300 feet as indicated on this drawing.
	Corrected by designer.
Cover 2	In the Building Code Analysis for Building 2441, does the square footage on this sheet match the square footage of this building as indicated on Sheet A2.1?
	Corrected by designer.
Cover 2	Revise Basic Wind Speed, Importance Factor, and all load analysis for Building 2442 in accordance with previous comments for Buildings 2440 and 2441.
	Will be reviewed by engineering staff.
General	Ensure that formal interviews with the Users are performed and that the results are well documented and distributed to all relevant parties.
	Interview conducted on 12/17/08, will verify documentation and distribution.
S1.1	Show cage pedestals on this drawing. (Repeat Comment from Concept Submittal).
	Corrected by designer.
S1.1	Make sure to accommodate drains in cage area, heads, showers, mechanical room, as well as trench drains in boat maintenance area. (Repeat Comment from Concept Submittal).

	Will be corrected by designer and coordinated with Mechanical Engineer.
A1.1	Door from Cages 105 to Stairs 115 should swing in the direction of egress (from Cages to Stairs), not as currently shown.
	Corrected by designer.
A1.1	Per previous comment, relocate doors to comply with separation requirement.
	Corrected by designer.
A1.1	Indicate extent of roof overhangs on this drawing.
	Corrected by designer.
A1.1	Should bollards be provided on the inside of the Maintenance and Staging area to protect coiling doors from the inside?
	Discussed at recent review meeting, deleted by User.
A1.1	Provide indication of where exterior elevations are cut/shown.
	Corrected by designer.
A1.1	Please explain need for Vault Door Hinge on Door 01.
	Corrected and deleted by designer.
A1.1	Provide elevations of doors and frames to accompany door schedule.
	Will be provided by designer and Architect.
A1.1	If Door 02 is going to function as an entrance door, it should have an entrance mat, be an insulated door, have min 6" x 12" vision panels (1 per leaf), and have a knox box.
	Corrected by designer.
A1.1	Indicate Door 03 at Side Entry 104 and Rear Entry 101 are to be hollow metal, have an entrance mat, knox box, and min 6" x 12" vision panel – or make this a different door number. Door 03 shown at other locations should be indicated as hollow metal.
	Corrected by designer.
A1.1	Please explain the requirement for a deadbolt on Door 04(s).
	Corrected and deleted by designer.
A1.1	Please explain requirement for STC of 42 for Door(s) 09.
	Corrected and deleted by designer.
A1.1	Indicate materials and hardware requirements for Door 05 and Door 017.
	Corrected by designer.
A1.1	Please explain purpose of un-numbered door between Stairs 115 and Vestibule 116. Delete if unnecessary, and number/label if required.

Corrected by designer.

A1.1 Please identify where to find the wall section cut by 1/A1.1/A3.1 on west exterior wall of Cage area. Depictions on Sheet A3.1 are for interior walls.

Will be reviewed by Architect and corrected by designer.

A1.1 Indicate on this sheet the extent of enlarged plan details for toilet rooms.

Corrected by designer.

A1.1 Provide an enlarged detail of Stair 115 and Vestibule 116.

Corrected by designer.

A1.2 Revise the sheet number from 'A1.1' to 'A1.2'.

Corrected by designer.

A1.2 Identify the thin line that encircles the second floor plan, approximately 1.5 feet away from the walls on the west, north, and east sides, and over 20 feet away on the south side.

Corrected by designer, labeled as overhang.

A1.2 We suggest that this sheet is a better place than Sheet A1.1 to show the window schedule, since there are no windows on the first floor.

Corrected by designer.

A1.2 Delete one 'p' from 'RIVER OPPS CONTROL WATCH' here and on the Room Number Schedule on Sheet A1.1.

Corrected by designer.

A1.2 Show extent of adjacent Building 2441.

Corrected by designer.

A1.2 It appears that the south window in the west wall of Room 210 may need to be re-located due to conflict with adjacent Building 2441.

Will be reviewed by Architect.

A1.2 Finish Schedule – Refer to RFP Part 4, Section C10, Paragraph C102001 1.2.1 Sound Insulated Doors and Frames. This paragraph directs the D/B Contractor to "provide sound insulated doors and frame assemblies into rooms requiring wall assemblies to be sound insulated with a Sound Transmission Class (STC) rating as required. The STC rating for the door and frame assembly shall be not less than the wall assembly STC rating." The intent of the RFP was to require specific STC ratings for walls in specific rooms – not for all rooms. Door/frame assemblies in rooms with a specified STC are to be sound insulated in accordance with the paragraph above. Other doors/frame assemblies do not need to be sound insulated. Please correlate the Finish Schedule on this sheet with the Door

	Schedule to make sure that all door/frame assemblies in walls requiring an STC rating are rated accordingly.
	Will be reviewed by Architect and corrected by designer.
A1.2	Finish Schedule – Wall finish for Entry should be IRWT/EP.
	Corrected by designer.
A1.2	Finish Schedule – The RFP calls for the floor finish in CSS to be CPTT-1, since this is office space. The Schedule indicates concrete.
	Discussed at recent review meeting, User prefers concrete.
A1.2	Finish Schedule – The RFP called for a GWB ceiling for the Entry. This was to avoid placing acoustical tile in the ceiling at frequently-used entrances where they will be subjected to high humidity, which could cause the tiles to sag. The Finish Schedule shows acoustical ceiling tile (ACT) at entrances with a finished ceiling. It might be acceptable to leave ACT as the finish for Entry 102 because of infrequent use, but we feel the GWB should be used at Vestibule 116, and metal panels on the soffit at Side Entry 104.
	Discussed at recent review meeting, ACT deleted, metal panels to be used at 104.
A1.2	Finish Schedule – Please provide recessed mats at all entrances in accordance with the RFP.
	Corrected by designer.
A1.2	Finish Schedule – The RFP (see Part 3, Page 26) called for the walls around all telecommunications rooms to extend to the structure above. Please review the Room Requirements in Part 3 of the RFP to ensure that you have accurately identified all rooms that are required to have walls extend to the structure above.
	Will be reviewed by Architect.
A1.2	Finish Schedule – The Coffee Mess was identified as part of the River Ops Control Watch Station on Page 35 of part 3 of the RFP. The counter for the Coffee Mess is required to be a minimum of 12 feet long and is to consist of base cabinets and wall cabinets.
	Corrected by designer.
A1.3	Suggest moving the "Detailed Building Requirements (Main Wind Force Resisting Components)" to one of the Structural Drawings.
	Corrected by designer.
A1.3	Show connection detail of the 6" CMU wall to the steel frame.
	Detail being developed by engineering staff in coordination with Met. Bldg. provider.

A1.3	Show through-wall flashing at intermediate locations, steel stiffening angles, control joints and/or expansion joints, and other information relevant to construction of the CMU wall.
	Details being developed by Architect.
A1.3	Top left detail – Number this detail. Identify location of through-wall flashing. Identify the location of the insulation between the wythes of this wall system. Provide a minimum of 1" actual dimension air space, not including insulation space, between wythes in accordance with RFP Part 4, Section B20, Paragraph B201001 1.1.3. Provide bituminous dampproofing in accordance with RFP Part 4, Section B201002 1.1.1, not 'Tyvek' as indicated on this drawing.
	Details being developed by Architect. Tyvek has been deleted.
A1.3	Right center detail – Number this detail. Identify location of through-wall flashing. Identify the location of the insulation in this wall system. Show '1/2" Densglass Gold Sheathing' indicated in Section A in this detail. Provide bituminous dampproofing in accordance with RFP Part 4, Section B201002 1.1.1, not 'Tyvek' as indicated on this drawing.
	Details being developed by Architect. Tyvek and Densglass have been deleted.
A1.3	Section A – Label rooms in this section. Indicate how you intend to address the juncture of the steel frame and the acoustical ceiling. The ceiling is to be flat; there shall be no inclined areas. Identify the meaning of note indicating '6" CMU @ 8" O.C.' at the bottom left of this section. Provide detail of area around and construction of 'cast stone lintel.' Identify lines below perimeter beam at inside face of 6" CMU. Verify that 6" CMU will span 25 feet vertically. Indicate Building 2441 in the right side background. Provide graphic depiction of rigid insulation within the roof system.
	Section being revised by Architect and designer; 6" CMU has been replaced with 8" CMU. Cast stone lintel detail will be provided.
A1.3	Provide background and derivation for U-Factors and R-Values indicated at top of this sheet.
	Calculations to be provided by engineering staff.
A1.4	Remove the north arrow from this building section and label it as Section B.
	Corrected by designer.
A1.4	Indicate walls that extend to roof above – generally, the "10' Stud Walls" indicated are not correct.
	Corrected by designer.
A1.4	Provide details at the roof overhang at each end of this section.

	Detail to be provided after coordination with Met. Bldg. provider.
A1.4	Top left detail – Number this detail. Identify location of through-wall flashing. Identify the location of the insulation between the wythes of this wall system. Provide a minimum of 1" actual dimension air space, not including insulation space, between wythes in accordance with RFP Part 4, Section B20, Paragraph B201001 1.1.3. Provide bituminous dampproofing in accordance with RFP Part 4, Section B201002 1.1.1, not 'Tyvek' as indicated on this drawing. Verify that 6" CMU conforms to the physical construction requirements cited on RFP Part 3, Page 15 describing construction enclosing the Armory.
	Detail being revised by Architect. Tyvek and 6" CMU have been deleted.
A1.5	In Section C, please indicate aspects of the west wall of the space, including windows on 2nd floor of building 2440.
	Corrected by designer.
A1.5	Suggest moving the "Detailed Building Requirements (Main Wind Force Resisting Components)" to one of the Structural Drawings.
	Corrected by designer.
A1.5	Indicate extent of coiling doors, bollards, and other features.
	Corrected by designer.
A1.5	See comments on Sheets A1.3 and 1.4 concerning issues with detail on this sheet.
	Corrected by designer.
A1.5	Provide background and derivation for U-Factors and R-Values indicated at top of this sheet.
	Calculations to be provided by engineering staff.
A1.5	Provide graphic depiction of rigid insulation within the roof system.
	Corrected by designer.
A1.5	Show '1/2" Densglass Gold Sheathing' indicated in Section C in a detail.
	Corrected by designer, Denglass deleted.
A1.5	Show profile of boat on trailer to help verify clearances.
	Corrected by designer.
A1.6	Right Side Elevation – 25'-0" eave height depiction does not correspond to location of eave. Correct 'River OPPS' at left portion of Right Side Elevation. Elevation indicates use of 8" CMU Split Face; all previous drawings indicate this to be 4". Please reconcile. Is 'vented metal soffit' required in a vertical application? Elevation indicates that there are 12 bollards, but only 10 are depicted. Indicate gutters and downspouts.

	Corrected by designer.
A1.6	Left Side Elevation – 25'-0" eave height depiction does not correspond to location of eave. Elevation indicates that there are 12 bollards, but only 10 are depicted. Elevation indicates use of 8" CMU Split Face; all previous drawings indicate this to be 4". Please reconcile. Indicate gutters and downspouts. Identify 'SL' at bottom center of this elevation.
	Corrected by designer. Gutter and downspout design being coordinated with Met. Bldg. provider.
A1.6	Both Elevations – Indicate location of control joints and/or expansion joints in the masonry.
	Joints to be determined by Architect and shown by designer.
A1.7	Front Elevation – Provide a detail of bolting the stair platform to the building. Provide a detail of the 12" x 4' deep concrete pillar for stair column and attachment of the two.
	Detail to be provided after coordination with engineering staff.
A1.7	On the Rear Elevation, provide details of connections of stair elements.
	These stairs have been deleted by the User.
A1.7	On the Typical Handrail/Guardrail Detail, refer to UFAS, not ADA or ADAAG. Also, refer to UFAS Figure 19(c) and 19(d) for the correct depiction of handrail extensions at bottom and top of stair runs and modify this drawing to comply.
	Corrected by designer.
A1.7	Both Elevations – Indicate location of control joints and/or expansion joints in the masonry.
	Will be corrected by designer after review by Architect.
A1.8 and A1.9	Remove square footages from this sheet.
	Corrected by designer.
A1.8 and A1.9	Indicate room names on the plan view instead of providing a Room Number Schedule.
	Corrected by designer.
A1.8 and A1.9	Providing a graphical materials legend instead of the abbreviation legend provided.
	Will be corrected by designer after review with Architect.
A1.9	Verify extent of acoustical ceiling tile.
	Will be corrected by designer after review with Architect.
A1.10	Locate soap dispensers (Item #5) above lavatories, not between lavatories as shown, so when they drip, they don't drip over the floor.

Corrected by designer.

A1.10	Delete reference to ADA clear space, since UFAS is the governing code for accessibility in DOD facilities.
	Corrected by designer.
A1.10	In Female Head 212 – Center mirror above the lavatory.
	Corrected by designer.
A1.10	In Head 109 – The Grab Bar designation should be '4,' not '10.' Also, make sure that Item 1 does not encroach on the required clear space at the lavatory in this room. Ensure that the door does not swing into the required clear space at the toilet in this room. Swinging the door out is an option.
	Corrected by designer.
A1.10	Verify sizes of Items 8 and 9 in Rooms 109 and 212, and make sure Item 9 is reachable by a disabled person in Head 109.
	Corrected by designer.
A1.10	Verify that shower stall in Shower 108 complies with the size requirements for this item in UFAS. It does not appear that the shower shown complies with either Fig. 35(a) or 35 (b).
	Corrected by designer.
A1.10	Show locations of floor drains in the rooms indicated on this sheet.
	Will be corrected by designer after review with Mechanical Engineer.
A1.10	Indicate dimensions of toilet partitions and urinal screens.
	Will be corrected by designer after review with Architect.
A1.10	We could not locate Item #14 in Rooms 10 or 112.
	Corrected by designer.
A1.10	Provide mirror in Shower 108 in accordance with RFP (Part 3, page 19).
	Corrected by designer.
A1.10	Provide screening for the entrance to Male Head 211. Everyone leaving the stairs will have a direct view into the first toilet stall when the door to the head is ajar.
	Corrected by designer after review with Architect.
A1.10	Why are plumbing chases behind toilets and urinals different sizes (10" in Rooms 111 and 109 and 1'-5 ¼" in Rooms 211 and 212)?
	4" or 10" is typical, the larger chase size is to conceal structural steel members.

A1.11	Correct sheet number from 'A1.1' to 'A1.11'.
	Corrected by designer.
A1.11	Identify Building 2440 and 2441.
	Corrected by designer.
A1.11	Is it your intent to cover the stairs? No cover is indicated on stair elevations.
	The intent is to cover the stairs, elevations will be corrected by designer.
A1.11	Identify heavy horizontal line near north end of Building 2440.
	Deleted by designer.
A1.11	Show gutters on this drawing.
	Will be corrected by designer after review with Met. Bldg. provider.
A2.1	Identify how personnel are to access this building, particularly the center bay.
	Wire mesh partitions have been deleted by User.
A2.1	Correct the callout (A1.2/A1.3 portion of callout) for Section A.
	Corrected by designer.
A2.1	Bollards near bows of boats were shown in the RFP to protect the stairs and platform between boats. If it is determined that these stairs and elevated walkways are not necessary, the bollards may not be necessary, either.
	Bollards and walkways have been deleted by User.
A2.2	Indicate height at top of clerestory.
	Corrected by designer.
A2.2	Show gutters and downspouts.
	Will be corrected by designer after review with Met. Bldg. provider.
A2.2	Section A was cut through a coiling door on Sheet A2.1. Correct the section on this sheet to show this.
	Corrected by designer.
A2.2	Show platform on long side opposite the doors as well as rear exit doors and exterior stairs.
	Platform will be shown by designer, other items have been deleted by User.
A2.2	Show through-wall flashing at intermediate locations, steel stiffening angles, control joints and/or expansion joints, and other information relevant to construction of the CMU wall.

	Details will be determined by Architect and shown by designer.
A2.2	Show profile of boat on trailer to help verify clearances.
	Corrected by designer.
A2.2	Top left detail – Number this detail. Suggest taking this detail at bottom right portion of Section A and mirroring all items in the detail. Identify location of through-wall flashing. Identify the location of the insulation between the wythes of this wall system. Provide a minimum of 1" actual dimension air space, not including insulation space, between wythes in accordance with RFP Part 4, Section B20, Paragraph B201001 1.1.3. Provide bituminous dampproofing in accordance with RFP Part 4, Section B201002 1.1.1, not 'Tyvek' as indicated on this drawing.
	Detail will be corrected similar to detail on A1.3
A2.3	This drawing indicates use of 8" CMU Split Face but the detail on Sheet A2.2 indicates this CMU to be 4." Which is correct?
	Corrected by designer, to be 4".
A2.3	Indicate gutters and downspouts on these elevations.
	Will be corrected by designer after review with Met. Bldg. provider.
A2.3 and A2.4	Both Elevations – Indicate locations of control joints and/or expansion joints in the masonry.
	Will be indicated by designer after review with Architect.
A2.4	Why change scale of elevation drawings (from Sheet A2.3)?
	Corrected by designer
A2.4	Indicate gutters and downspouts on these elevations.
	Will be corrected by designer after review with Met. Bldg. provider.
A2.5	Indicate gutters on this drawing.
	Will be corrected by designer after review with Met. Bldg. provider.
A3.1	Where do you intend to use this 2-hour wall?
	Corrected by designer, 2-hour wall not needed.
A3.1	Provide UL number for Wall Section 2. (Repeat Comment from Concept Submittal).
	Architect will provide UL number.
A3.1	Neither wall section will possess the (2-hour or 1-hour) rating indicated unless it extends to structural floor or roof above and penetrations are firestopped. Please clarify this on the drawing. (Repeat Comment from Concept Submittal). **Wall section will be shown in full as demised.**

Architectural Specs	Comments
Table of Contents	The Table of Contents only lists sections through Division 9. Please list all sections.
	In general, specification manual will be submitted at pre-final in Specsintact format. Proposed table of contents will be provided prior to that as discussed at recent review meeting.
General	All references to the RFP in these comments relate to Part 4, unless noted otherwise.
General	It appears that many of the requirements for products described in the RFP have not been incorporated. Most specification sections read as generic specifications and have not been edited to reflect the requirements of this project. This makes it difficult for a reviewer or contractor to wade through non-applicable information to find a product intended for the project. These specifications should be re-edited.
General	There appear to be many missing specifications that need to be provided. Please review the work involved in the project and add additional sections necessary to completely define the products and procedures.
General	Section 02360 from Part 5 of the RFP needs to be included in the project. It should be included without changes.
042000	Paragraph 1.2.A and others throughout this section – Delete all references to materials that are not used on this project, such as concrete brick, face brick, building (common) brick, hollow brick, and limestone.
042000	Paragraph 1.2.B – This paragraph refers to spec sections, "Water Repellants," "Joint Sealants," and "Louvers and Vents" in other divisions that are not provided. Provide these sections.
042000	Paragraph 1.5 – Refer to RFP, Part 4 Paragraph B20 1.7 for all construction submittal requirements, and list all submittals that apply to masonry, including Test Reports (SD-06) and Certificates (SD-07).
042000	Delete references to materials such as brick that are not used on the project.
042000	Paragraph 3.5 – Verify with structural engineer that masonry is to be attached to structural members.
042000	Paragraph 3.8.C.2 – Verify limiting height of grout pour.
042000	Paragraph 3.3 – Describe installation of bituminous dampproofing, rigid insulation, air space, and facing materials. See B201001 in the RFP.
051200	Paragraph 1.2.A and others throughout this section– Delete all references to materials that are not used on this project, such as architecturally exposed structural steel.

051200	Paragraph 1.2.B – This paragraph refers to spec sections, "Quality Requirements" and "Steel Decking," in other divisions that are not provided. Please provide.
051200	Revise description(s) of painting to comply with RFP by referencing MPI systems.
055000	Paragraph 1.2.A and others throughout this section– Delete all references to materials that are not used on this project, such as pipe columns for supporting wood frame construction and other items.
055000	Paragraph 2.1 – Is this paragraph needed, as no manufacturers are indicated in this section?
055000	Paragraph 2.6 - This paragraph refers to Section "High-Performance Coatings" in Division 09 that is not provided. Provide this section.
055000	Paragraphs 2.6 C., D., E. and all other references to painting in this section – Paint/coating systems described in this section do not comply with the requirements of RFP B201010, Paragraph 1.1, which indicates that "All paint shall be in accordance with the Master Painter Institute (MPI) standards…" or B201010 Paragraphs 1.2 through 1.5, which specify the MPI systems for various exterior surfaces.
055000	Paragraph 3.5.C - This paragraph refers to spec section "Joint Sealants" in Division 07 that is not provided. Provide this section.
055100	General – RFP requires concrete stairs or steel stairs with concrete filled pans.
055100	Paragraph 1.2.A and others throughout this section – Delete all references to materials that are not used on the project, such as ornamental steel framed stairs.
055100	Paragraph 1.2.B – This paragraph refers to spec sections, "Pipe and Tube Railings" and "Miscellaneous Rough Carpentry," in other divisions that are not provided. Please provide the indicated sections or delete the references from this paragraph. If railings and handrails are included in this section, as indicated in Paragraph 1.2.A, then why is a separate specification section dealing with pipe and tube railings required?
055100	Paragraph 1.3.A 1 and 2 – indicate source of these performance criteria.
055100	Paragraph 2.6. C, D, and E and all other references to painting in this section - Revise description(s) of painting to comply with RFP by referencing MPI systems.
055100	Paragraph 2.8 – Delete references that are not included in the RFP, such as "epoxy-resin filled treads." Stair treads shall be concrete per the RFP.
061000	Paragraph 1.2.A and others throughout this section – Delete all references to materials that are not used on this project, such as dimensional lumber, timber, laminated-veneer lumber, and prefabricated wood I-joists.

061000	Paragraph 2.5 – Comply with RFP C101001 1.7.5 for referenced standards for various fasteners.
062023	Paragraph 1.2.A and others throughout this section– Delete all references to materials that are not used on this project, such as interior standing and running trim, hardboard paneling, and ornamental wood columns.
062023	Paragraphs 1.3 B and C – where are MDF and MDO proposed on the project?
062023	General – Per the RFP, this project requires wall and base cabinets of natural-finish solid wood construction with 100% acrylic counter tops. This specification does not address either of these items. Revise the section to address the requirements of the RFP.
072100	Paragraph 1.2.A and others throughout this section– Delete all references to materials that are not used on this project, such as self-supported, spray-applied cellolosic insulation. Any spray-applied fire-resistive materials shall be inorganic.
072100	Paragraph 1.2.B – This paragraph refers to spec section "Sheathing" in Division 06 that is not provided. Provide the referenced section or delete the reference.
072100	Paragraph 2.2.D – Verify flame-spread rating of 75 complies with IBC for intended use.
072100	Paragraph 2.7 – Per RFP B201002 1.1, Vapor retarders shall comply with ASTM C755.
072100	General – Provide description of bituminous dampproofing and installation per RFP Paragraph B201002 1.1.1.
081113	Paragraph 1.2.B – This paragraph refers to spec section "Door Hardware" that is not provided. Provide the referenced section.
081113	Paragraph 2.3.B.1 – Delete this paragraph. RFP B2030 requires all exterior hollow metal doors to be heavy duty.
081113	Paragraph 2.3.C – Revise to comply with RFP C102001.1.1.1 requirements for Level 2 and Level 4 interior doors, depending on usage.
081113	Paragraph 2.3.C – Include requirements for sound insulated doors per RFP C102001.1.1.2.
08211	This section is listed in the Table of Contents, but is not provided.
084113	Paragraphs 1.3 and 1.6G (and others, as applicable) - This is a Department of Defense (DOD) project, and must comply with UFAS, not ADA.
084113	Paragraph 1.4.C – Verify that the stated structural load data complies with the RFP requirements (see also drawing comments regarding code analysis).
084113	Paragraph 2.5.B – Delete this paragraph.

084113	Paragraph 2.6. – Delete all hardware items that are not going to be installed on this door.
084113	Paragraph 2.9 - Delete all finishes that are not going to be used on this door.
085113	Paragraph 1.3.A – All windows shall be HC per RFP B2020. Delete reference to AW and C designations.
085113	Paragraph 1.4.B.1 – Verify that the stated loads and parameters comply with the requirements of the RFP.
085113	Paragraph 1.4.C – Please explain reference to "Alternate 3 to the basic contract."
085113	Paragraph 2.3 – Verify that all referenced standards included in these paragraphs comply with those indicated in the RFP. At least one (I – forced entry protection) deviates from the RFP.
085113	Paragraph 2.7.A – Revise this paragraph to comply with RFP B202001 1.1.1 that requires the aluminum windows to be factory finished with an 'organic coating', not an 'anodic finish'.
085113	Paragraph 3.1.A.1 – Delete reference to wood frame walls.
085113	General – add requirements for interior windows per the RFP.
088000	General – Edit this section to eliminate all glass, glazing products, and construction/installation methods that are not to be used on this project.
088000	Paragraph 1.5 – Add requirement for submitting a sample of exterior glazing materials in accordance with RFP B20 1.7 SD-04.
088000	Paragraphs 1.6 G and H – RFP B202004 1.1.3 requires that wire glass shall be tested in accordance with ASTM E 163, not NFPA 252 or 257 indicated in these paragraphs.
088000	Paragraph 2.6.A.3.a – The term "Azurlite" by PPG has been replaced by "Azuria" and is distinctly blue in color. Please correct and explain or eliminate the use of 'Bronze' in this paragraph.
088300	General – Mirrors are indicated in the RFP in Paragraph C103002, "Toilet and Bath Accessories." The submitted specification reads as though the mirrors will be supplied by other than a toilet and bath accessory manufacturer. This was not the intent of the RFP, since it is desirable to have all such accessories be products of one manufacturer's design line, so there is a cohesive appearance. Unless the designers intend to use mirrors in other areas, we suggest that this section be eliminated and that mirrors be included in "Toilet Accessories" section.
092900	General – Edit this section to eliminate all gypsum board products and construction/installation methods that are not to be used on this project.

092900	General – The RFP requires all gypsum board products used on this project to be a minimum of 5/8" thick. Revise this section to eliminate any reference to gypsum board thinner than 5/8."
092900	Paragraph 2.2 – Include GA and ASTM requirements listed in C301003 of the RFP for all items specified.
092900	Paragraphs 2.3 and 3.4 – Delete these paragraphs, as there is no exterior gypsum board used on this project. Exterior soffits are to be metal per RFP B201008 1.1.
092900	Paragraph 2.4.C – Revise to indicate the minimum thickness of cementitious backer units to be 5/8" as required by RFP C301003 1.3.
092900	Paragraph 2.5.C – Delete this paragraph. Only corrosion resistant steel and plastic accessories are allowed per RFP C301003 1.7.
092900	Paragraphs 2.8 and 3.8 – Edit these paragraphs to delete 'textures' not included in RFP C301003 1.8. The majority of finishes should be smooth, NOT textured.
095123	Paragraph 1.6.D – Maximum flame spread as tested using ASTM E84 as allowed in RFP C303004 1.1 is 50, not 450 as indicated in this paragraph. Revise to comply with RFP.
095123	Part 2 – Revise to indicate size, type, edge treatment, NRC and CAC ratings required by RFP C303004.
095123	Paragraph 2.3 – Edit to only include the items and materials used on this project.
095123	Paragraph 2.4 – This paragraph does not specify anything. Revise to list items included.
096816	General – This section describes broadloom carpet. The RFP requires carpet tile. Delete this section in its entirety and provide a specification for carpet tile. Include such information as type/pattern, pile weight, backing ("Manufacturer's standard material" is not acceptable), yarn density, warranty, static control requirements, and all other requirements listed in the RFP.
099123	General – Delete all alkyd products and all products for interior use (except epoxy floor coating) with a VOC rating of E1 (or lower), as these will almost certainly not meet LEED requirements. Delete all products not used in this project – such as wood paneled walls. Revise this specification to comply with the requirements stated in C301005 of the RFP.
13125	Paragraph 1.6.J – Correct smoke developed rating to comply with RFP F101001 1.4.2.
13125	See C301005 1.5, which refers to B201010 for painting of steel structure.

13125	Provide detailed written verification that metal roof system complies with the requirements stated in RFP B30.
13125	Metal wall and roof panels are to have a high-performance factory-applied finish complying with the requirements indicated in RFP F101001 1.5.

Fire Protection	**Comments**
Basis of Design	The write-up included consists of a part of the proposal from Simplex Grinnell. As such, there were numerous references to items not included by Simplex Grinnell. The Contractor is responsible for the entire project and no references to items 'by others' should be included, as the Government is not concerned with the breakdown of work items between the Contractor and subcontractors.
Basis of Design	There is a note stating that maximum sprinkler coverage for light hazard is 225 sq ft or listing of sprinkler head. There are numerous sprinklers listed for extended coverage. They are not allowed.
Basis of Design	Ordinary hazard occupancies are noted as "Ordinary Group I & II". They should be noted as I or II as applicable.
Basis of Design	Under "Engineering Services" it is stated that Simplex Grinnell includes Professional of Record services from a fire protection engineer for the sprinkler system. RFP Part 3, D40 Fire Protection, General System Requirements is very clear that the Contractor must have a contract with a Design Build Fire Protection Engineer (DBFPE). It provides specific requirements for that individual. It also lists numerous duties for that person and specifically says it goes beyond reviewing sprinkler design. Having an engineer stamp sprinkler plans does not meet the intent or verbiage of the RFP. Having the subcontractor provide shop drawings signed by an engineer other than the DBFPE creates the potential for confusion over the role of "engineer of record". We strongly recommend this be resolved before moving forward.
Basis of Design	Numerous references were made that materials will be "selected by Simplex Grinnell" with no reference to the RFP documents. Review Section D40 of Performance Technical Specifications, UFC 3-600-01, and UFC 3-600-10N for specific requirements. All materials must be per RFP documents and approved by the DBFPE.
Basis of Design	RFP documents require the Design narrative be written by the DBFPE. Could not find any design narrative, or any evidence that a DBFPE has been retained for this project.
Drawings	No fire protection drawings were submitted for review and no utility plans were submitted showing the fire main and PIV. Please provide this for review prior to the 100% Submittal.
Drawings	Provide required fire extinguishers.

Drawings	Require painting of pipe in accordance with RFP documents.

Mechanical Drawings	**Comments**
General	Provide a gas-fired hot water boiler for hydronic heating in accordance with RFP ESR D3020. The submittal basis of design recommends electric heat because of the small heat load required by small zones or offices. No mention is made of the heat load required by the Maintenance/Staging Area, which may have a significant heat load requirement?
General	Provide a constant volume pumping system in accordance with RFP ESR D303001. The submittal basis of design recommends a primary variable volume pumping system. Primary variable volume pumping systems are not typically provided for single chiller applications and the energy savings provided by variable volume for such a small system may be negligible.
General	Only a primary pump is indicated on the plans. Provide a back-up pump in accordance with ESR D304006.G.
General	Provide split systems for all Communication and Server Rooms in accordance with RFP ESR D3203002.A. None are shown.
General	Provide wall hydrants along the building exteriors in accordance with ESR D202002.A.

Electrical Drawings	**Comments**
E1.0	Electrical Legend: Identify floor outlets as a combination of duplex receptacles, SIPRNet, and NIPRNet outlets.
E1.0	Electrical Legend: use symbol legend as indicated in UFC 3-500-10N, Attachment 6 "Electrical Guide Legend Interior".
E1.0	Telecommunications Legend: provide 2-port faceplate for 2-port jacks, not 4-port faceplates.
E1.0	Lighting Fixture Schedule: provide as required by UFC 3-500-10N, Attachment 23 "Lighting Fixture Schedule".
E1.0	Lighting Fixture Schedule: provide fixture type "F5A" with wire guard.
E1.1	Provide panelboard or switchboard as service entrance equipment as required by UFC 3-500-10N, Chapter 2 "Design Requirements", 2-3.1.1.
E1.1	Provide a main breaker for each service entrance equipment as required by UFC 3-500-10N, Chapter 2, 2-3.1.
E1.1	Dry-type transformers should not be larger than 40% of the service transformer as indicated in UFC 3-500-10N, Appendix B "Best Practices", B-3.2.
E1.1	Provide One-Line Diagram for the Boat Storage Building.

E1.1	Provide transient voltage surge suppression for service entrance equipment as required by the National Electrical Code.
E2.1	Provide building names for the new buildings in the project.
E2.1	Provide call out for the street name "Lower Gainesville Road".
E3.1	Provide room names and numbers.
E3.1	Cages 105: Coordinate lighting fixtures alignment with revised cage layout.
E3.1	Armory 107: provide exit sign as required.
E3.2	Provide exit signs as required.
E3.2	Provide dedicated electrical room as required by UFC 3-500-10N, Chapter 2, 2-3.1.
E3.2	Janitor 214: identify fixture type.
E3.2	North Stairs: verify lighting layout and provide lighting fixtures above stair landing area.
E3.3	Identify fixture type F14 in the Lighting Fixture Schedule on Drawing E1.0.
E4.1	Provide retractable reel in accordance with RFP, Part 3, D502001.W.4.
E4.1	Provide room names and numbers.
E4.1	Provide a duplex receptacle at each of the columns in accordance with RFP, Part 3, D502001.X.2.
E4.1	Cages 105: provide a duplex receptacle in each cage in accordance with RFP, Part 3, D502001.BB.
E4.1 & 4.2	Provide separate floor plans for power and communications devices.
E4.2	Verify receptacle spacing in the corridors with UFC 3-500-10N.
E4.3	Indicate mounting height for receptacles as 48" above finished floor in accordance with RFP, Part 3, D502001.X.3.
E7.1 & E7.2	Photometrics Floor Plan: show lighting fixture locations.
E7.1 & E7.2	Calculation Summary: average footcandles seem high in some of the spaces. Verify with UFC 3-530-01 for average footcandle recommendations in each space. Provide UFC recommended average footcandles in the calculation summary table for comparison of recommended and calculated average footcandle values.
E7.2	Calculation Summary: Average/Minimum and Maximum/Minimum values should be 4:1 and 10:1, respectively, in accordance with IES recommendations.
E7.4	Calculation Summary: verify minimum footcandle values for site lighting with UFC 3-500-10N recommendations.

E7.1 thru E7.4	Photometrics data can be submitted along with the Basis of Design instead of including in the construction drawings.
Basis of Design	Instant start ballasts should only be used as indicated in UFC 3-530-01.
General	Provide graphic scales for all floor plans.
General	Submit calculations in accordance with UFC 1-300-09N, Chapter 10 "Design Submittal Requirements".
General	Submit fire alarm/mass notification, lightning protection, intercommunications, and grounding systems for review.
General	Provide electrical site plan for power.

Electrical Specs	**Comments**
16010	Provide specifications for dry-type transformer.
16500	Page 3, delete incandescent lamp requirements.
16700	Provide specifications for cable trays, racks, cabinets, and communications backboard.
16700	Telecommunications Cable Plant Material Cut Sheets: Provide center spline cable trays instead of basket type cable trays in accordance with RFP Part 3, D503003.S.
General	Change all Architect and Engineer references to Contracting Officer.
General	Provide UFGS specifications for Electronic Security System as required by RFP Part 4, D503008.1.1.1
General	Provide UFGS specifications for closed circuit television system as required by RFP Part 4, D503008.1.1.2.
General	Provide UFGS specifications for data transmission media as required by RFP Part 4, D503008.1.1.3.
General	Provide UFGS specifications for intrusion detection system as required by RFP Part 4, D503008.1.1.4
General	Provide UFGS specifications for generator as required by RFP Part 4, D509002.1.2.
General	Provide UFGS specifications for automatic transfer switch as required by RFP Part 4, D509002.1.3.
General	Provide UFGS specifications for service transformer as required by RFP Part 4, G401002.
General	Provide specifications for public address, intercom, lightning protection, cable television, and fire alarm/mass notification systems for review.

Electrical Calcs	**Comments**

Calculations	Electrical Load Analysis: Indicate reference source(s) where diversity values are obtained from.
Calculations	Short Circuit and Voltage Drop Calculations: Indicate the name of the software used for the short circuit and voltage drop calculations.
Calculations	Short Circuit and Voltage Drop Calculations: Indicate reference source where the secondary short circuit amps value is obtained from for transformer "T1".

DESIGN COORDINATION AND REVIEW - COMMENTS

PROJECT MANAGER: **Terry Artrip, NAVFACSE**			
COMMENTS BY: **URS Group, Inc.**	CODE:	PHONE: **813-286-1711**	DATE: 3 April 2009
PROJECT TITLE AND LOCATION: **MILCON P210, SOF RIVERINE & COMBATANT CRAFT OPS FACILITY (SBT-22) STENNIS SPACE CENTER, MS**			TYPE OF REVIEW: **Early Start Submittal Slab on Grade at Boat Storage Building**

NO.	DWG.NO. or SPEC.SECT.	COMMENTS	A-E RESPONSE
1	Specification General	Specification section headers and format should be consistent.	Will comply.
2	Specification General	Are specs being edited in SpecsIntact? If not, you cannot use automatic functions for confirming references, coordinating submittals, generating bracket reports, etc., and will need to do such manually.	Specs are being edited in SpecsIntact.
3	Specification General	A submittal register and verification of submittal approvals is needed before any construction work can proceed.	Register was initiated 1.7.09 and will be provided.
4	Specification General	We suggest a proposed specification list be generated and submitted for comment before starting any more sections related to main design.	Current Table of Contents will be forwarded.
5	Specification General	Please make sure submittal review and approval stamps and signing conventions conform to Navy standards. Several appear in these documents and they are not consistent.	Use of Navy standard stamps is being implemented.
6	Specification General	Please coordinate construction submittals as to which are for Government, Designer of Record, or CQ Manager review. The submittals for Government approval are those listed in 01332N along with administrative submittals listed elsewhere in the RFP Part 2 sections.	Construction submittals will be coordinated in accordance with RFP.
7	Section 03 31 00.00 10	This is not the section typically used for Navy projects. Please consider using 03 30 00, Cast-in-Place Concrete.	Will comply.
8	Section 03 31 00.00 10	With this Spec there are references to other sections that are not included in this submittal.	Other sections will be provided.
9	Concrete Mix Design	The Designer of Record should review and approve the concrete mix design package and associated backup.	DOR has complied with review and requested backup.
10	Concrete Mix Design	Water cement ratio is not per page 6 of specification section 03 31 00.00 10.	Mix design is being revised to conform with specification.
11	Concrete Mix Design	Test records or trial mix results should be included with mix design per paragraph 1.7 of specification section 03 31 00.00 10.	Records or results will be included.

12	Section 22 00 00	This section does not appear to have been fully edited. There are numerous brackets, blanks, and decision items still within the document.	Response by Mechanical Engineer.
13	Section 22 00 00	This section appears to allow many different materials for various uses. Please edit out items as necessary to specify requirements intended for this job.	Response by Mechanical Engineer.
14	Drawing S2.1	Provide thickness and reinforcing for level landing.	Corrected by designer, detail added on Sht. S2.1.
15	Drawing S2.1	Provide slab control joint location and detail in both directions.	Control joint location and detail added on Sht. S2.1. Note: One direction only.
16	Drawing S2.1	Section 1/S2.1 shows the plan of footing at column please coordinate.	Corrected by designer.
17	Drawing S2.1	Column anchor bolts are not shown. Is metal building manufacturer responsible for the design and location of the anchor bolt? If not please provide the anchor bolt location and detail.	Metal building manufacturer is responsible for location of anchor bolts. Design of anchor bolts has been coordinated between A-E and MBM.
18	Drawing S2.1	Construction joint details and locations are not shown. Please provide construction joint details and locations.	Contractor does not intend to use construction joints at Boat Storage Bldg. 2442.
19	Section 26 00 00.00 20	Edit this section to delete paragraphs not applicable to this project, for example we think 2.7.1.2, 2.10.3, 2.12.2, 2.1.12.6 and 3.1.9.1 should be removed.	Response by Electrical Engineer.
20	Drawing E4.3	Please indicate mounting height for receptacles, we believe it is 48" AFF.	Response by Electrical Engineer.
21	General	A code analysis with accompanying drawings should be prepared for this building prior to construction being allowed to commence.	Code analysis will be provided and is being coordinated by the DOR and DBFPE.
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30			

Dammon Engineering

From: Dammon Engineering [dammoneng@bellsouth.net]
Sent: Thursday, February 26, 2009 3:31 PM
To: cseals@broadmoorllc.com; Jeff Collins; Joshua Jenkins
Cc: dammoneng@bellsouth.net
Subject: RE: FW: Stennis Riverine - C2.1 Site Drainage Plan

February 26, 2009

Craig,

I am writing to respond to Charlie's questions below, as follows:

1. Drainage calculations have been added to Sht. C2.1.
2. Topo drawings not in the RFP and provided post CDW meeting indicate a low area and natural drainage both toward the project site and toward Endeavor Blvd. Natural drainage onto the project site has been included in the calculations.
3. Swale sections, inverts, and T.O.B. elevations are now on the plans.
4. Bottom of swale inverts are shown on plans. During a 10 year storm event, the swale will not hold any water. Discharge pipe (24" arch pipe), is oversized to achieve full drainage of watershed, post development.
5. The existing ditch along the gravel road is being improved to accomodate existing and new flows.

Robert Wiltse
Chief Architect
Dammon Engineering, Inc.

-----Original Message-----
From: cseals@broadmoorllc.com [mailto:cseals@broadmoorllc.com]
Sent: Tuesday, February 10, 2009 9:45 AM
To: Dammon Engineering
Subject: Fw: FW: Stennis Riverine - C2.1 Site Drainage Plan

Sent from my BlackBerry® smartphone with Nextel Direct Connect

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From: cseals@broadmoorllc.com
Date: Tue, 10 Feb 2009 15:07:48 +0000
To: Dammon Engineering<dammoneng@bellsouth.net>
Subject: Fw: FW: Stennis Riverine - C2.1 Site Drainage Plan

Sent from my BlackBerry® smartphone with Nextel Direct Connect

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From: "Mullins, Paul A CIV NAVFAC SE"
Date: Tue, 10 Feb 2009 09:54:35 -0500
To: Craig Seals<cseals@broadmoorllc.com>
Subject: FW: FW: Stennis Riverine - C2.1 Site Drainage Plan

Craig, please see the below email regarding the drainage plan and the geotech report. Please send responses to me and I will forward to Charlie.

Thanks,
Paul

-----Original Message-----
From: Charlie_Evans@URSCorp.com [mailto:Charlie_Evans@URSCorp.com]
Sent: Tuesday, February 10, 2009 8:50 AM
To: Mullins, Paul A CIV NAVFAC SE
Cc: Susan_Nute@URSCorp.com; Sherri_Eriksen@URSCorp.com
Subject: Re: FW: Stennis Riverine - C2.1 Site Drainage Plan

Paul,

I need a couple items answered on the drainage plan you just sent to help with a quick review.

1. Are there any drainage calculations available yet to go with this plan?
2. There is existing surface drainage coming across the site from the northeast to southwest which is at elevations lower than anything indicated in this plan. How does the designer plan to accommodate this? I brought this issue up at the concept design workshop.
3. The swale line I see in plan represent what ... bottom or top of swale? What is the typical bottom width and side slope for the swales? Again my concern as discussed at the concept workshop is how deep/wide these swales will be.
4. Are the elevations with arrows pointing to the swales bottom of swale grades? Also, how deep will the water be in the swales for the 10-year storm?
5. There is an existing culvert under the gravel road northwest of the site which presently drains through the site. This plan show this drainage being accommodated by an existing ditch along the road edge. Has the designer confirmed this ditch has adequate grades/size to accommodate this? The original survey did not indicate a ditch this deep along the road.

I appreciate it if these can be answered.

I will look over the geotechnical and get comments to you.

Regards,

-Charlie-

Charlie Evans, P.E.
URS <<graycol.gif>> Group, Inc.
7650 W. Courtney Campbell Cswy
Tampa, Florida 33607-1462
Tel (Main): 813.286.1711
Tel (Direct): 813.636.2453
Fax: 813.636.2400
charlie_evans@urscorp.com

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DAMIEN W. SERAUSKAS, P.E.
PROFESSIONAL ENGINEERING SERVICES

15 CYPRESS POINT LANE NEW ORLEANS, LA 70131
VOICE: (504)-866-2600 FAX: (504)-218-8480

Stennis Riverine ROF Mechanical Comments Responses
50%-65% Design Submittal Phase

Mechanical comments were received from two reviewing entities, Sam Martindale, P.E. and URS. The following list includes the reviewer's original comment and the response from the design professional / DB contractor team.

Martindale Comments

Dwg P 1.1 Where is the grease interceptor for the trench drain and where is the associated piping? Is this to be shown on the P-drawings or the C-drawings?

The required oil/water separator will be provided, and will be referenced in the P-drawings, however the design and final location will be indicated on the C drawings.

Dwg P 1.2 Does the hallway coffee counter need a sink and disposal?

The River Ops Control Watch Station shall include a sink and residential garbage disposal as outlined in the RFP.

URS Comments

Mechanical Drawings	Comments
General	Provide a gas-fired hot water boiler for hydronic heating in accordance with RFP ESR D3020. The submittal basis of design recommends electric heat because of the small heat load required by small zones or offices. No mention is made of the heat load required by the Maintenance/Staging Area, which may have a significant heat load requirement? *The accepted Design Basis documentation and proposal specifically addressed a change from the original RFP Basis of Design. All areas will be heated using electric resistance heaters in lieu of hydronic heating systems due to the relatively small heat load requirements for the various buildings and long-term maintenance and reliability concerns relating to gas-fired hydronic heating systems for this application.*
General	Provide a constant volume pumping system in accordance with RFP ESR D303001. The submittal basis of design recommends a primary variable volume pumping system. Primary variable

	volume pumping systems are not typically provided for single chiller applications and the energy savings provided by variable volume for such a small system may be negligible. *The accepted Design Basis documentation and proposal specifically addressed a change from the original RFP Basis of Design. In order to meet or exceed the efficiency / energy consumption objectives of the project, the use of a variable primary pumping scheme was proposed for use on this project. This system uses significantly less energy, allows for excellent full-load and part-load performance, and extends pump motor life due to the soft-start and coast-down capabilities of the VFD pump controllers.*
General	Only a primary pump is indicated on the plans. Provide a back-up pump in accordance with ESR D304006.G. *A back-up primary will be provided.*
General	Provide split systems for all Communication and Server Rooms in accordance with RFP ESR D3203002.A. None are shown. *The User Group identified during the Concept Design workshop that a dedicated split system unit is not required for the Communication and Server Rooms, therefore it was removed from the Scope.*
General	Provide wall hydrants along the building exteriors in accordance with ESR D202002.A. *Wall hydrants will be provided along the building exteriors.*

END OF REVIEW RESPONSES.

Should you have any questions or comments regarding these or other matters, please don't hesitate to call.

Sincerely,

Professional Engineering Services

Damien W. Serauskas, P.E.
Owner / Principal

SCHLAFLY ENGINEERING LLC

121 SOUTH GENOIS STREET, NEW ORLEANS, LA 70119
PHONE: 504-415-3347 FAX: 504-482-7943

Broadmoor Construction
2740 North Arnoult Road
Metairie, LA 70002

March 11, 2009

ATTN: Craig Seals

RE: SOF Riverine
50% review comment response - Everett

Dear Sir:

In response to comments provided by Dave Everett, dated February 12, 2009, we offer the following, with respect to the electrical discipline:

Bldg 2440:

Comment 2: User requests four cameras in Armory (107(are, one directed at entry doors and one in each of the three subdivision/caged areas.

Answer: We will provide cameras as requested.

Comment 9: User requests inclusion of floor outlets (if not already specified by Mr. Herve Lara), central in each of the divisible areas on the Briefing Room (203).

Answer: We will use symbol legend from Attachment 6.

Bldg 2441:

Comment 2: Overhead 110V, Air and Water service connections. Users requests two overhead hose and reel style service stations that can be dropped/pulled down to provide quick turnaround service without trip hazards in the maintenance floor area.

Answer: We will provide 110V cord reels as requested.

Comment 3: 110V, Air and Water service connections throughout the staging area and water hose bibs at six locations (2 per elevation) on the exterior of the building.

Answer: We will coordinate the locations of numerous receptacles already provided inside and outside of the maintenance/staging building.

This completes our responses to all electrical items provided by Dave Everett, dated February 12, 2009. If you have any questions, please feel free to call.

Sincerely,

Schlafly Engineering, L.L.C.

Per: _____
Kimball Schlafly, P.E.

CC: Pat Russo, HTE Contractors
Robert Wiltze, Dammon Engineering

SCHLAFLY ENGINEERING LLC

121 SOUTH GENOIS STREET, NEW ORLEANS, LA 70119
PHONE: 504-415-3347 FAX: 504-482-7943

Broadmoor Construction
2740 North Arnoult Road
Metairie, LA 70002

March 11, 2009

ATTN: Craig Seals

RE: SOF Riverine
50% review comment response - Martindale

Dear Sir:

In response to comments provided by Sam Martindale, P.E., dated November 5, 2009, we offer the following, with respect to the electrical discipline:

Item 24: Nicely done electrical discipline title sheet. Good layout and very comprehensive. Good Job!!!

Answer: Thank you. We will adjust symbol legend and lighting fixture schedule per comments submitted by URS.

Item 25: Recommend adding a double head fixture (a fixture on opposite side of the pole) to the F11A light pole near the pedestrian walkway between the parking lot and the Riverine Compound.

Answer: We will review the layout of pole lights and adjust accordingly to provide enhanced lighting at the pedestrian gate. This may include adding a shorter pole which is more appropriate for walkway lighting.

Item 26: Need to increase the number of outlets in the walls around the perimeter of the SEAL cage room. Need both for now with access from the rear of the cages. Also go for the future in case the room's occupancy is changed. Need a NP outlet in the Armory. Need a NP and SP outlet in the CSS office.

Answer: We will provide additional receptacles along accessible walls in cage area. Installation of receptacles for cages is part of bid option #6. We will provide NP and SP outlets in the armory and CSS office upon receipt of equipment/furniture plans.

Item #27: I don't see any NP or SP outlets on the second floor. Coordinate with the occupant to determine the best placement and provide an adequate number per the RFP and to provide coverage throughout the floor.

Answer: We will provide NP and SP outlets on the second floor upon receipt of equipment/furniture plans.

This completes our responses to all electrical items provided by Sam Martindale, P.E., dated November 5, 2009. If you have any questions, please feel free to call.

Sincerely,

Schlafly Engineering, L.L.C.

Per: _____
Kimball Schlafly, P.E.

CC: Pat Russo, HTE Contractors
Robert Wiltze, Dammon Engineering

SCHLAFLY ENGINEERING LLC
121 SOUTH GENOIS STREET, NEW ORLEANS, LA 70119
PHONE: 504-415-3347 FAX: 504-482-7943

Broadmoor Construction
2740 North Arnoult Road
Metairie, LA 70002

March 11, 2009

ATTN: Craig Seals

RE: SOF Riverine
50% review comment response - URS

Dear Sir:

In response to comments provided by URS, we offer the following, with respect to the electrical discipline:

Item E1.0:

Comment: Electrical Legend: Identify floor outlets as a combination of duplex receptacles, SIPRNet, and NIPRNet outlets.

Answer: Floor boxes shall be combination type with power and telecommunications, with recessed pocket for plugs, and provided with appropriate flange for carpet/tile.

Comment: Electrical Legend: use symbol legend as indicated in UFC 3-500-10N, Attachment 6 "Electrical Guide Legend Interior".

Answer: We will use symbol legend from Attachment 6.

Comment: Telecommunications Legend: provide 2-port faceplate for 2-port jacks, not 4-port faceplates.

Answer: We recommend standardizing on 4-port faceplates to provide ease of upgrade in the future. However, upon receipt of equipment/furniture plans, we will provide faceplates equal to the number of jacks, which will most likely be a combination of 2 and 4-port devices.

Comment: Lighting Fixture Schedule: provide as required by UFC 3-500-10N, Attachment 23 "Lighting Fixture Schedule".

Answer: We will replace the lighting fixture schedule with that provided in attachment 23.

Comment: Lighting Fixture Schedule: provide fixture type "F5A" with wire guard.

Answer: Fixture type F5A will be deleted, and replaced with type F5.

Item E1.1:

Comment: Provide panelboard or switchboard as service entrance equipment as required by UFC 3-500-10N, Chapter 2 "Design Requirements", 2-3.1.1.

Answer: **The ATS is the service entrance rated piece of equipment, and will contain the neutral-to-ground bond. Panel MDP will not be service-entrance rated. At the request of others during our design meetings, a main breaker will be added to MDP for convenience of maintenance, provided there is no coordination issue between breakers.**

Comment: Provide a main breaker for each service entrance equipment as required by UFC 3-500-10N, Chapter 2, 2-3.1.

Answer: **The ATS has a main breaker. Panel HS (boat storage bldg) has a main breaker. We neglected to show the panelboards (HS and LS) and transformer T3 on drawings E3.3 and 4.3. See note above regarding main breaker in MDP.**

Comment: Dry-type transformers should not be larger than 40% of the service transformer as indicated in UFC 3-500-10N, Appendix B "Best Practices", B-3.2.

Answer: **Size of transformers T1 and T2 are only estimated at this time. Upon receipt of all mechanical and architectural loads, transformers shall be sized in accordance with requirements of UFC 3-500-10N.**

Comment: Provide One-Line Diagram for the Boat Storage Building.

Answer: **One-line diagram for Boat storage bldg was included in one-line diagram for OPS bldg. We neglected to show the panelboards (HS and LS) and transformer T3 on drawings E3.3 and 4.3. Per discussion at review meeting, one-line diagram for Boat storage bldg will remain a part of the overall one-line diagram.**

Comment: Provide transient voltage surge suppression for service entrance equipment as required by the National Electrical Code.

Answer: **TVSS shall be provided in accordance with UFC 3-500-10N, and installed in accordance with NEC 285.**

Item E2.1:

Comment: Provide building names for the new buildings in the project.

Answer: **Building names shall be identified.**

Comment: Provide call out for the street name "Lower Gainesville Road".

Answer: **Street names shall be identified.**

Item E3.1:

Comment: Provide room names and numbers.

Answer: **Room names and numbers shall be provided.**

Comment: Cages 105: Coordinate lighting fixtures alignment with revised cage layout.
Answer: In Cages 105, light fixtures have been positioned to provide maximum light into the cages, while still being accessible from the aisle. Corrections to fixture locations at the rear entry door shall be made.

Comment: Armory 107: provide exit sign as required.
Answer: **Exit signs shall be added in Armory 107 and coordinated with life safety egress.**

Item E3.2:
Comment: Provide exit signs as required.
Answer: **Exit signs shall be added and coordinated with life safety egress.**

Comment: Provide dedicated electrical room as required by UFC 3-500-10N, Chapter 2, 2-3.1.
Answer: **A dedicated electrical room shall be provided on the second floor by providing and additional wall and door dividing the space and creating a separate space for mechanical and electrical.**

Comment: Janitor 214: identify fixture type.
Answer: **Janitor 214 will have a type F5 fixture.**

Comment: North Stairs: verify lighting layout and provide lighting fixtures above stair landing area.
Answer: **We will verify lighting levels in North Stair. Landing fixture is shown on E3.1 (type F9, wall-mounted above landing).**

Item E3.3:
Comment: Identify fixture type F14 in the Lighting Fixture Schedule on Drawing E1.0.
Answer: **We will add type F14 to fixture schedule. Cut sheet is attached for your review.**

Item E4.1
Comment: Provide retractable reel in accordance with RFP, Part 3, D502001.W.4.
Answer: **We will provide retractable reel as requested.**

Comment: Provide room names and numbers.
Answer: **Room names and numbers shall be provided.**

Comment: Provide a duplex receptacle at each of the columns in accordance with RFP, Part 3, D502001.X.2.
Answer: **Refer to sheet E4.3. Receptacles have been provided on each side of column. Please note that wire mesh partitions are being installed on the centerlines of the columns. Per meeting discussion, mesh partitions are being deleted, therefore one receptacle shall now be provided at each column.**

Comment: Cages 105: provide a duplex receptacle in each cage in accordance with RFP, Part 3, D502001.BB.

Answer: RFP, Part 3, D502001.BB is at variance with the rest of the RFP. Reference Part 3, room Requirements, page 17, and Amendment 0001, price item #7 (Option 6). Per request of Mr. Martindale, a change order proposal shall be submitted for adding a receptacle to all cages located on the perimeter of the building. We will assume one circuit for a maximum of eight receptacles, with receptacles install flush in CMU wall. We are presuming that the receptacles will be used for battery chargers, boot dryers, and other such minimal loads. Also per request of Mr. Martindale, a change order proposal shall be submitted for adding a receptacle to all cages located on the interior of the building. We assume the same receptacle loading, and that bracing will be required to attach the receptacle to the cage frame.

Item E4.1 & E4.2

Comment: Provide separate floor plans for power and communications devices.

Answer: Separation of floor plans for power and special systems shall occur for the pre-final submission.

Item E4.2

Comment: Verify receptacle spacing in the corridors with UFC 3-500-10N.

Answer: We will verify receptacle spacing, and adjust according to any equipment installations as required.

Item 4.3

Comment: Indicate mounting height for receptacles as 48" above finished floor in accordance with RFP, Part 3, D502001.X.3.

Answer: Mounting height shall be adjusted to 48" above floor or catwalk as appropriate.

Item E7.1 & E7.2

Comment: Photometrics Floor Plan: show lighting fixture locations.

Answer: Light fixtures shall be added to the photometric plan on next submittal.

Comment: Calculation Summary: average footcandles seem high in some of the spaces. Verify with UFC 3-530-01 for average footcandle recommendations in each space. Provide UFC recommended average footcandles in the calculation summary table for comparison of recommended and calculated average footcandle values.

Answer: Column for recommended lighting level shall be added. Cage area has a high level to allow for penetration into cages.

Item E7.2

Comment: Calculation Summary: Average/Minimum and Maximum/Minimum values should be 4:1 and 10:1, respectively, in accordance with IES recommendations.
Answer: **We will review accordingly.**

Item E7.4
Comment: Calculation Summary: verify minimum footcandle values for site lighting with UFC 3-500-10N recommendations.
Answer: We will review and verify per UFC 3-500-10N.

Item E 7.1 thru E7.4
Comment: Photometrics data can be submitted along with the Basis of Design instead of including in the construction drawings.
Answer: **Photometric design plans shall be submitted with basis of design.**

Basis of Design
Comment: Instant start ballasts should only be used as indicated in UFC 3-530-01.
Answer: Use of instant start mode of operation will be in accordance with UFC 3-530-01, paragraph 5-3.4.3.

General
Comment: Provide graphic scales for all floor plans.
Answer: **Graphic scales shall be added for all floor plans.**

Comment: Submit calculations in accordance with UFC 1-300-09N, Chapter 10 "Design Submittal Requirements".
Answer: All information shall be provided as requested, and upon receipt of all load information as needed to generate the calculations.

Comment: Submit fire alarm/mass notification, lightning protection, intercommunications, and grounding systems for review.
Answer: Fire alarm/mass notification, lightning protection, intercommunications, and grounding systems shall be provided on pre-final submittal.
Comment: Provide electrical site plan for power.
Answer: **Site plans showing all power distribution shall be provided on pre-final submittal.**

Electrical specifications:

Comments:
16010 Provide specifications for dry-type transformer.
Answer: **We will use UFGS 26 20 00 specification.**

16500 Page 3, delete incandescent lamp requirements.
Answer: **Concur.**

16700	Provide specifications for cable trays, racks, cabinets, and communications backboard.
Answer:	**Concur. We will use UFGS 27 10 00 specification.**
16700	Telecommunications Cable Plant Material Cut Sheets: Provide center spline cable trays instead of basket type cable trays in accordance with RFP Part 3, D503003.S.
Answer:	**Concur. We will coordinate with user.**
General	Change all Architect and Engineer references to Contracting Officer.
Answer:	**We change all references to Contracting Officer.**
General	Provide UFGS specifications for Electronic Security System as required by RFP Part 4, D503008.1.1.1.
Answer:	**Concur. We will use UFGS 28 20 00.00 20 specification.**
General	Provide UFGS specifications for closed circuit television system as required by RFP Part 4, D503008.1.1.2.
Answer:	**Concur. We will use UFGS 28 16 00.00 20 and 28 20 00.00 20 specifications.**
General	Provide UFGS specifications for data transmission media as required by RFP Part 4, D503008.1.1.3.
Answer:	**Concur. We will use UFGS 28 16 00.00 20 and 28 20 00.00 20 specifications.**
General	Provide UFGS specifications for intrusion detection system as required by RFP Part 4, D503008.1.1.4
Answer:	**Concur. We will use UFGS 28 16 00.00 20 and 28 20 00.00 20 specifications.**
General	Provide UFGS specifications for generator as required by RFP Part 4, D509002.1.2.
Answer:	**Concur. We will use UFGS 26 32 13.00 20 specification.**
General	Provide UFGS specifications for automatic transfer switch as required by RFP Part 4, D509002.1.3.
Answer:	**Concur. We will use UFGS 26 36 23.00 20 specification.**
General	Provide UFGS specifications for service transformer as required by RFP Part 4, G401002.
Answer:	**We will use UFGS 26 12 19.10 specification.**
General	Provide specifications for public address, intercom, lightning protection, cable television, and fire alarm/mass notification systems for review.

Answer: **We will use UFGS 27 21 00.00 20 (Intercommunication), 26 41 00.00 20 (Lightning Protection), 27 54 00.00 20 (Cable TV), 28 31 76 (Fire Alarm/mass notification) specifications.**

Calculations Electrical Load Analysis: Indicate reference source(s) where diversity values are obtained from.

Answer: **Diversity values are obtained from those used by the local utility, from the NEC 220, and an analysis of the occupancy, functions and types of load.**

Calculations Short Circuit and Voltage Drop Calculations: Indicate the name of the software used for the short circuit and voltage drop calculations.

Answer: **Fault current and voltage drop calculations during early design are obtained from personal software modeling the formulas provided by Cooper Bussman. Final calculations will be provided by the gear manufacturer. Information on that software package will be provided.**

Calculations Short Circuit and Voltage Drop Calculations: Indicate reference source where the secondary short circuit amps value is obtained from for transformer "T1".

Answer: **We have presumed an infinite bus on the primary side, and during early design, assigned a nominal value for the transformer impedance. Upon selection of transformer, accurate values for impedance, X/R, etc., will be used by the manufacturer to calculate the available fault current at T1.**

This completes our responses to all electrical items provided by URS. If you have any questions, please feel free to call.

Sincerely,

Schlafly Engineering, L.L.C.

Per: _____
Kimball Schlafly, P.E.

CC: Pat Russo, HTE Contractors
Robert Wiltze, Dammon Engineering