

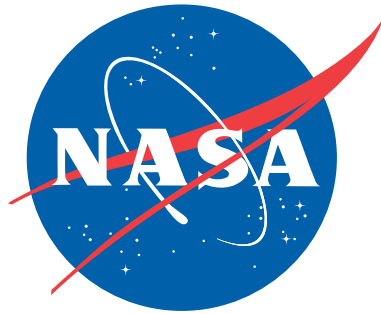
Part 3 – Project Program

Blast & Paint Facility

D/B RFP Preparation

Final Submittal

National Data Buoy Center Renovation and Expansion



John C. Stennis Space Center, Mississippi

prepared for



**Naval Facilities Engineering Command
Southeast
Charleston, South Carolina**

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Project Program

NDBC Renovation & Expansion
Blast & Paint Facility

Stennis Space Center
Mississippi

September 5, 2008

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1. PROJECT DESCRIPTION

The purpose of the project is to demolish Building 3209 and provide a space to apply a finish to new and existing buoy's of various sizes at Stennis Space Center, Mississippi for the National Data Buoy Center (NDBC). The new Blast and Paint structure will provide blasting and painting operations for steel and aluminum buoys. The Blast & Paint will provide a sheltered conditioned space for media blasting to the North and painting to the South. The facility shall be configured for a pull through type of operation. This facility will be a turn key design by a qualified blast and paint operations design build contractor. All equipment shall be located indoors in equipment enclosures along one or both sides of Blast & Paint Facility. These enclosures will include: Paint Storage, Paint Mixing/Separation and Equipment Storage. The finished building shall include all consumable items that are required for operation for one year such as filters, etc. and a full blast media hopper. The existing blast and paint area is to be demolished but must remain operational until the new Blast and Paint facility is operational.

2. PROJECT OBJECTIVES

2.1 Mission Statement

The National Data Buoy Center (NDBC) provides comprehensive, reliable systems and marine observations to support the missions of the National Weather Service (NWS) and National Oceanic and Atmospheric Administration (NOAA), promote public safety, and satisfy the future needs of our customers. NDBC designs, develops, operates and maintains a network of data collecting buoys and coastal stations.

2.2 Facility Function

The Blast & Paint shall be a 5,000 square feet (50 feet by 100 feet) pre-manufactured or modular building specifically designed to media blast then

paint two large nautical buoys (approximately 39 feet diameter and 60 feet high). Each bay for the buoys must be 50 feet wide by 50 feet deep by 60 feet high clear. Refer to Part 6: Attachments for Specifications.

2.3 Project Specific Priorities

The Blast and Paint shall be a temperature and humidity controlled sheltered space for the finish application of new and existing buoys. The facilities blast media is required to be recyclable. The media is to be filtered and reused. Specifications of the media to include: SSPC10 (near white) Specification with a surface profile of 2 mils. There will be zero emission, from this facility.

2.3.1 Sustainable Design

In accordance with Executive Order 13123 and other pertinent directives, integrate sustainable principles into the design, development and construction of the project. Reduce the total cost of ownership of the facility using a whole building, life-cycle approach.

Provide integrated sustainable design strategies and features to minimize the energy consumption of the facilities; conserve resources; minimize adverse effects to the environment; and improve occupant productivity, health, and comfort. In accordance with NAVFAC Instruction 9830.1 the facility and all site features shall be designed and constructed to the minimum requirement for building additions as certifiable for the US Green Building Councils (USGBC) "Leadership in Energy and Environmental Design (LEED) Rating System version 2.2". The constructed facility shall be certifiable by the USGBC as having met all LEED-NC (New Construction) requirements. The constructed facility shall be Self-Certified by USGBC as having met as many prerequisites and as many credits practical in the LEED-NC (New Construction) rating system.

2.3.2 Energy Conservation

All new facilities and major renovation projects shall conform to the latest edition of ASHRAE/IESNA Standard 90.1-2004 "Energy Standard for Buildings Except Low-Rise Residential Buildings", January 2004 International

Energy Conservation Code (IECC) 2004 Supplement Edition, January 2005. In addition, for new buildings, the Energy Policy Act of 2005 requires federal building designs achieve energy consumption levels 30% below the ASHRAE 90.1 IECC baseline building. The Designer of Record (DOR) shall perform and submit an energy analysis in accordance with Appendix G of ASHRAE Standard 90.1 showing the calculated baseline building performance and the proposed building performance on an energy consumption basis to document compliance with the Act. For the ASHRAE analysis, energy for receptacle and process loads should not be included the calculations for compliance. For the IECC analysis, energy consumption shall include space heating, space cooling, and domestic water heating. If the 30% reduction level is not life-cycle cost-effective based on the analysis, the Designer of Record (DOR) shall use an iterative procedure to find the lowest level of energy consumption that is life-cycle cost-effective. To determine if a feature is "life-cycle cost-effective", a life cycle cost analysis shall be performed in accordance with 10 CFR 436 Subpart A. Any of four methods are acceptable to determine LCC: (Lower LCC, Positive net savings, Investment Ratio (SIR) greater than 1, or an adjusted rate of return greater than discount rate).

2.4 Appropriate Design

The building must have clearance for the width and height of the largest buoy with transporter and clearance for the workers to move freely around buoys.

2.5 Workflow Process

The main purpose of the Blast & Paint Building is to provide an area to finish the exterior of new and existing buoys. The finish paint is needed before installing and testing of electronic equipment.

2.5.1 Hours of Operation

Normally the building will operate on a 0700 to 1700 schedule five days a week. Access to this building is for authorized personnel only.

2.5.2 Staffing/Occupancy

This building is not occupied except when in use with 2-4 persons total.

Type of Occupancy	No. of Persons	Description of Activity
Blast Booth	0	Media Blasting
Paint Booth	0	Painting
Maximum Occupancy	0	

2.6 Special Design Challenges

The greatest challenge for this building is the coordination of the site utilities with the modular building installer.

2.7 Adaptability And Flexibility

This building is only for media blasting and painting. It will be difficult to use for any other task.

3. SITE ANALYSIS

3.1 Existing Site Conditions

3.1.1 Natural Constraints

The site lies within Stennis Space Center (SSC) located in the southwest corner of Mississippi in Hancock County. It is about 50 miles northeast of New Orleans, Louisiana, and 30 miles from the Mississippi Gulf Coast. Stennis Space Center is NASA's largest rocket engine test facility. Within Stennis Space Center, the site is located to the east of Old MS Highway 43 or Road "H". Entrance into Stennis Space Center is located on MS-607. Security clearance is required to enter the area.

Topography:

The topography of the area is rural, very flat, and predominately covered with coniferous trees. A canal is located to the East and South of the site. The canal to the East is for the deployment of data buoys to be taken to and from sea.

Vegetation / Landscaping

The site has limited landscaping. The proposed Blast & Paint Facility has a grass lot to the west and a densely wooded area with mature timber to the East.

Wetlands:

A wetlands area is located to the west of the site across the grass field in the wooded area between Trent Lott Parkway and Old Highway 43.

Climate:

The climate is typical of southwest Mississippi with an average monthly high temperature of 91F in August, and an average monthly low temperature of 40F in January. The rainfall is plentiful; the driest month being December with an average of 3.1", the wettest month is September with an average of 6.7".

3.1.2 Man Made

Existing Vehicular Access & Circulation

The main arterial road into Stennis Space Center is state road MS 607 or Trent Lott Parkway. It runs north / south through the eastern half of SSC. The southern entrance into SSC is closest to the project site. Once through the security gate follow Trent Lott Parkway and turn right on Road "H" approximately 1.1 miles ahead at the first stop light. Building B3202 is approximately 1.0 miles on the left. The proposed Blast & Paint Facility location is northeast of B3202. Parking for the proposed Blast & Paint Facility is located along the east, south, and west side of Building B3202 in the existing parking lot.

Site Utilities

The existing site utilities include: water, sewer, natural gas, electric (above and below ground), underground communications, high temperate hot water (HTHW), high pressure air (HPA), and Nitrogen. See the NDBC Site Existing Utilities Plan and NDBC Existing Critical Systems Plan in Part 6 of this RFP for a more detailed layout of the site utilities.

Site Drainage & Storm Runoff

Drainage off the site is collected into open channel ditches and then is discharged into the canal to the east of the site. The main drainage ditch for the proposed Blast & Paint Facility will be relocated directly to the west of the facility. The ditch is approximately 4-foot deep, roughly has a 5-foot flat bottom, and 3:1 (x:y) side slopes. See the NDBC Site Existing Drainage Plan in Part 6 of this RFP for a more detailed layout of the existing drainage.

Existing Buildings

All building on the project site are of similar construction with a metal façade. See the Site Plan for a more detailed layout of the existing buildings.

Building B3202 is constructed of metal and partially surrounded by high security fencing topped with razor wire and completely surrounded by concrete filled steel bollards.

Building B3202 – North and East side



Building B3205 is a one story metal building that contains offices and an electrical assembly area. It is located directly south of Building B3203 and north of B3202 across the grass field.

Building B3205 – North and West side



Building B3203 is located north of B3205 and is the northern most building on the project site. It is constructed of metal and houses both offices and heavy machinery shop.

Building B3203 – West side



Building B3209 is the current paint and blast area for the NDBC buoys. It is located east of Building B3203.

Building B3209 – West side



Proposed location of new Blast & Paint Facility.

View from the North toward B3202



View from the South toward B3203



Existing Waterfront Facilities

A water front facility is located at the ramp of the canal southeast of the proposed Blast and Paint Facility. The facility serves the canal area where the larger buoys are stored and the smaller buoys are transported to and from the water.



Fencing

Building B3202 is partially surrounded by high security fencing with razor wire. It is also completely surrounded by steel bollards filled with concrete at approximately 4-foot intervals. Portions of both the fencing and bollards shall be removed in order for the new Blast & Paint Facility to operate.

3.2 Site Development Requirements

Building Footprint

The proposed location for the new Blast and Paint Facility is along the concrete drive north of B3202 and south of B3205 and B3203 where the concrete drive intersects with the B3202 facility. The new Blast and Paint Facility will be extended approximately 80-feet west into the existing grass field. The new facility shall be constructed on Portland Cement Concrete slab and the pavement around the new facility shall be rigid pavement only.

Anti-Terrorism / Force Protection

All Anti-Terrorism / Force Protection design criteria and standards shall be followed in the design of the NDBC Renovation and Expansion Project.

Existing Parking

Parking for the new Blast and Paint Facility shall be shared with B3202.

Service Access

Service access for the new Blast and Paint Facility shall be shared with B3202.

Pedestrian Access and Circulation

Pedestrian entrances into the new Blast and Paint Facility shall be served by the existing concrete paved area and sidewalks that serve B3202.

Landscaping

Landscaping shall be limited to providing seed and mulch to disturbed lawn areas.

Utilities

The construction of the new Blast and Paint Facility will require the relocation and addition of some site utilities. A 10-inch water line shall be relocated to the north from underneath the footprint of the new facility. On the east side of the Building B3202, a fire hydrant assembly shall be relocated to allow entrance into the new Blast and Paint Facility. For a more detailed layout of the utility relocations, refer to the NDBC Site Existing Utilities Plan, the NDBC Critical System Plan, and the NDBC Site Existing Utilities Connection Plan in Part 6 of this RFP. Sanitary sewer shall be brought to the new facility from the west side of the grass field. Natural gas shall be provided from the west side of Road "H" or Highway 43.

All non-metallic utilities shall include a metallic locator tracer wire. No utilities shall be placed beneath or in the concrete slab. The utilities shall be installed prior to construction and within five (5) feet of the proposed Blast & Paint facility. The installation and location of the utility connections shall be coordinated with the location of the new Blast & Paint facility. The utility connections for the new Blast & Paint facility shall be on the exterior of the facility. The designer of record shall confirm all existing utilities will have the capacity to accommodate the additional service.

Signage

Traffic and pedestrian signage shall meet Mississippi Department of Transportation (MDOT) standards, The Manual on Uniform Traffic Control Devices (MUTCD), and Stennis Space Center Signage Implementation and Control Plan.

Site Drainage & Storm Water Runoff

The existing open channel ditch to the north of Building B3202 shall be relocated around the new Blast and Paint Facility. The relocated drainage ditch shall have the same cross sectional dimensions as the existing drainage ditch. Refer to the NDBC Site Drainage Plan in Part 6 of this RFP for a more detailed layout. The Contractor is responsible for providing the final storm water plan that meets all NPDES, state, and local requirements.

Site Demolition

Existing steel bollards filled with concrete and fencing that interferes with the operations of the new Blast and Paint Facility around the north and east side of Building B3202 shall be completely removed and all rubbish removed from the site.

Building 3209, the existing paint / blast facility, will be partially demolished and some items shall be salvaged. All demolished structural steel shall be salvaged and become the property of NASA and delivered to Building 2204. The demolition includes, but not limited to CMU walls and steel paint/blast facility. Relocate the 20-foot paint storage container, cargo unit, and air compressor to area directed by the Contracting Officer or ROICC. The HAZMAT storage

building shall remain undisturbed. B3209 is to be demolished only after the new Paint and Blast Facility is operational.

Site Clearing

The topsoil will be stripped and stockpiled on the site before grade work begins. The topsoil will be redistributed during finish grading operations.

Construction Access / Lay Down Area

The Contractor shall coordinate material and equipment laydown areas on-site with the ROICC office.

Permits

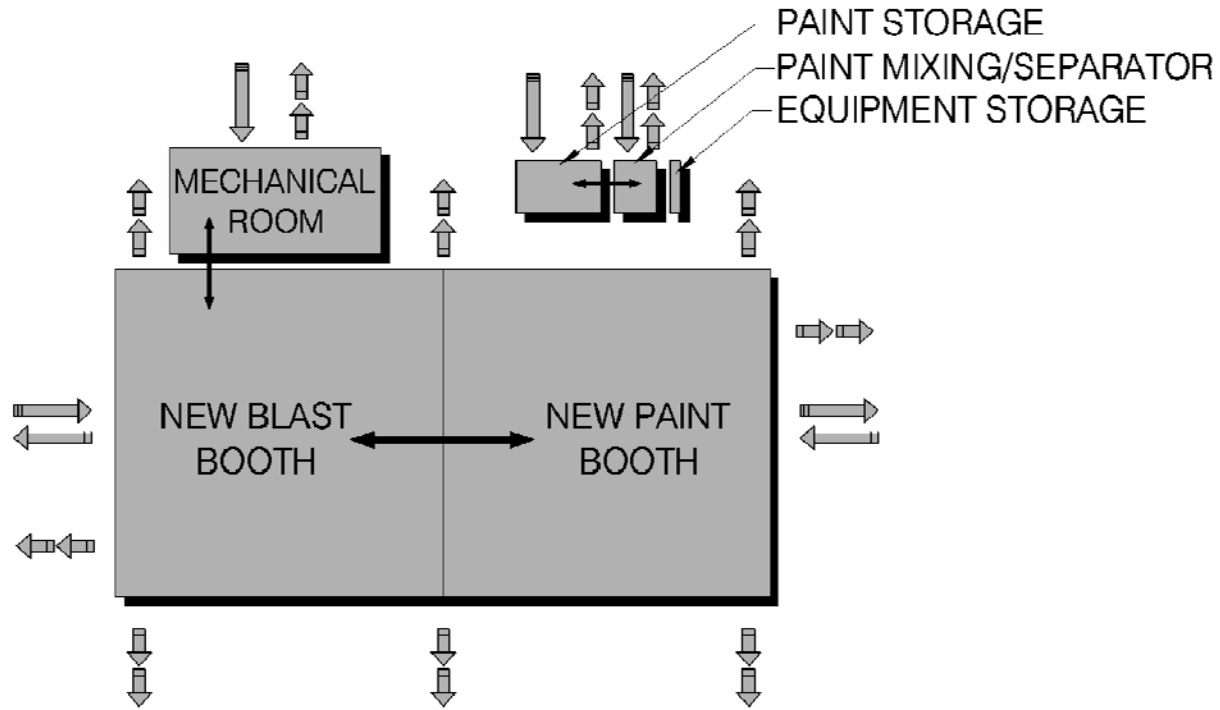
The Contractor shall be responsible for obtaining all applicable permits and paying associated fees (storm drainage, erosion control, grading, etc.) All utilities are owned and operated by NASA.

4. BUILDING REQUIREMENTS

4.1 Space Tabulation

Space Name	# of spaces	Unit SF (Net)	Total SF (Net)	Total SQM (Net)	Ideal Dimensions	Ceiling Height (ft)	Ceiling Height (cm)	# of Occupants	Remarks
Blast Booth	1	2500	2500	232.26		60	1828.8		
Paint Booth	1	2500	2500	232.26		60	1828.8		
Paint Storage	1	160	160	14.86		8	243.84		
Paint Mixing/Separator	1	64	64	5.95		8	243.84		
Equipment Storage	1	8	8	0.74		8	243.84		
Mechanical Room	1	800	800	74.32		10	304.8		
Subtotal Net Area			5232	486.07					
Net to Gross Factor			1.15	1.15					
TOTAL GROSS AREA			6000	557.37					
The design build contractor shall provide actual area in square feet in proposals.									

4.2 Space Relationships



LEGEND

- ↔ DIRECT RELATIONSHIPS
- ➡ ENTRY
- ⇨ EXIT



4.3 Exterior Character

This is a modular building. Refer to the enclosed information in Part 6.

The new Blast and Paint building should match the existing buildings on the site. Below are photos of the Building 2302 that is adjacent to this new building.



5. ROOM REQUIREMENTS

Refer to the enclosed information in Part 6: Attachments.

Blast Booth

Space Characteristics	Uniformat Level 4#	Uniformat Title	Description	Quantity	Size	Remarks
<p>Function: Pre-manufactured modular building designed to media blast buoys.</p> <p>Special Dimensions: 2500 SF</p> <p>Acoustics: N/A</p> <p>Occupancy: N/A</p> <p>Access:</p> <p>Other: Fresh air supply with one hundred percent filtered exhaust.</p>	D503001	Telecommunications Systems	Voice Outlets	1		Provide one telephone

Paint Booth

Space Characteristics	Uniformat Level 4#	Uniformat Title	Description	Quantity	Size	Remarks
<p>Function: Pre-manufactured modular building designed to paint buoys.</p> <p>Special Dimensions: 2500 SF</p> <p>Acoustics: N/A</p> <p>Occupancy: N/A</p> <p>Access:</p> <p>Other: Fresh air supply with one hundred percent filtered exhaust.</p>	D503001	Telecommunications Systems	Voice Outlets	1		Provide one telephone

Paint Storage

Space Characteristics	Uniformat Level 4#	Uniformat Title	Description	Quantity	Size	Remarks
<p>Function: Secure paint storage (flammable material storage)</p> <p>Special Dimensions: 160 SF Min.</p> <p>Acoustics: N/A</p> <p>Occupancy: N/A</p> <p>Access:</p> <p>Other: Temperature should be maintained between 40 and 100 degrees Fahrenheit. Provide ventilation.</p> <p>Fork Lift accessible</p> <p>This room is a modular unit separate from the Blast & Paint Booths</p>						

Paint Mixing/Separator

Space Characteristics	Uniformat Level 4#	Uniformat Title	Description	Quantity	Size	Remarks
<p>Function: Space where mixing paint and where the separating of thinner from old paint occurs. This should be located near the paint application equipment.</p> <p>Special Dimensions: 64 SF</p> <p>Acoustics: N/A</p> <p>Occupancy: N/A</p> <p>Access:</p> <p>Other: The paint thinner separator can be located anywhere but it must have ventilation.</p> <p>This room is a modular unit separate from the Blast & Paint Booths</p>	D201004	Sink	Service Sink	1	As Required	Cannot be adjacent to mixer or separator
	E109090	Equipment	Paint Thinner Separation Machine	1	3' x 3' x 4'	Requires 220V AC, 3ph. 60 Hz, 20 amps

Equipment Storage

Space Characteristics	Uniformat Level 4#	Uniformat Title	Description	Quantity	Size	Remarks
<p>Function: Space for the storage of Personnel Protective Equipment</p> <p>Special Dimensions: 8 SF</p> <p>Acoustics: N/A</p> <p>Occupancy: N/A</p> <p>Access:</p> <p>Other: Provide ventilation.</p> <p>This room is a modular unit separate from the Blast & Paint Booths.</p> <p>NOTE: The equipment can be included in with the Paint Mixing/Separator area if needed to save space.</p>	C103002	Accessories	Equipment Hooks	As Required		Provide Hooks for hanging gear

Mechanical Room

Space Characteristics	Uniformat Level 4#	Uniformat Title	Description	Quantity	Size	Remarks
<p>Function: Mechanical Room</p> <p>Special Dimensions: 800 SF</p> <p>Acoustics: N/A</p> <p>Occupancy: N/A</p> <p>Access:</p> <p>Other:</p>						

6. ENGINEERING SYSTEMS REQUIREMENTS

A10 FOUNDATIONS

SYSTEM DESCRIPTION

Provide the building foundation system in accordance with UFC 3-300-10N, *Structural Engineering*. Foundation shall be designed to suit subsurface conditions, and shall be capable of transmitting all building loads to the ground.

See Section B10 – Superstructure for additional loading criteria.

In addition, design the structure in accordance with the following loading criteria:

Importance Factors

Use Occupancy Category II in Table 1 of UFC 3-310-01 for determining Importance Factors for seismic, snow, and wind design. The corresponding Seismic Use Group is I.

Wind Exposure

Wind design shall be based on Exposure C.

A10 GENERAL

The Contractor shall commission the services of a geotechnical engineer registered as a Professional Engineer.

Subsurface soil information, including a geotechnical report is included in other portions of this RFP.

The successful bidder's Geotechnical Engineer shall perform borings and supplementary laboratory classification of soils encountered, on the building site to support the foundation design.

A site-specific seismic ground motion study is not required.

Engage a registered Professional Engineer to provide inspection of excavations and soil/groundwater conditions throughout construction.

A1010 STANDARD FOUNDATIONS

See "System Description" above. The foundation construction may include any foundation system meeting the requirements of this section. Do not use timber footings or wood foundations.

A1020 NOT USED

A1030 SLAB ON GRADE

Provide standard concrete slab on grade. Where slab on grade is below the existing adjacent exterior grade, provide a perimeter drainage system to remove ground water from the area immediately adjacent to the building.

--End of Section--

6. ENGINEERING SYSTEMS REQUIREMENTS

B10 SUPERSTRUCTURE

SYSTEM DESCRIPTION

Provide the building framing system in accordance with UFC 3-300-10N, *Structural Engineering*.

In addition, design the structure in accordance with the following loading criteria:

Importance Factors

Use Occupancy Category II in Table 1 of UFC 3-310-01 for determining Importance Factors for seismic, snow, and wind design. The corresponding Seismic Use Group is I.

Wind Exposure

Wind design shall be based on Exposure C.

B1010 NOT USED

B1020 ROOF CONSTRUCTION

The roof construction may include any structural framing system meeting the requirements of this section.

--End of Section--

6. ENGINEERING SYSTEMS REQUIREMENTS

B20 EXTERIOR ENCLOSURE

SYSTEM DESCRIPTION

This system consists of the exterior facing of the facility, which includes all vertical and horizontal exterior closure such as exterior walls and exterior doors. This system excludes roofing (See System B30, Roof). Structural frame elements at exterior such as columns, beams, spandrels, etc., are included in Superstructure, with only the applied exterior finishes (metal panel) being included here. Finishes to the inside face of walls which are not an integral part of the wall construction will be included in System C30, Interior finishes.

GENERAL SYSTEMS REQUIREMENTS

B2010 EXTERIOR WALLS

The primary exterior material of the building shall be pre-finished insulated metal panels.

B201001 EXTERIOR CLOSURE

Provide metal prefabricated panel exterior wall closure. Wall closure shall have concealed fasteners.

B201002 EXTERIOR WALL BACKUP CONSTRUCTION

Provide Exterior Wall Construction System (back-up systems for wall veneer) including pre-finished metal liner panel.

B201003 INSULATION AND VAPOR RETARDER

Provide insulation and vapor barrier as required.

B201004 PARAPETS

Not Used

B201005 EXTERIOR LOUVERS & SCREENS

Provide exterior louvers and screens, where required, as appropriate to the design of the building.

B201006 BALCONY WALLS & HANDRAILS

N/A

B201007 EXTERIOR SOFFITS

Provide exterior soffit (pre-finished) system metal.

B201009 EXTERIOR COATINGS

Provide field applied exterior coatings for all items that are not pre-finished, and to prefinished items when required to provide a color other than a standard prefinished color.

B201010 JOINT SEALANTS

Provide exterior application of joint sealants to seal joints and prepare for finish material installation.

B201011 SUN CONTROL DEVICES (EXTERIOR)

Not Used

B201012 SCREEN WALL

Not Used

B2020 EXTERIOR WINDOWS

Not Used

B2030 EXTERIOR DOORS

Provide solid door assemblies other than at the main entrance. Exterior doors and frames shall be non-corroding pre-finished steel.

Doors shall be Extra Heavy Duty Doors -- ANSI /SDI A250.8, Level 3, physical performance Level A, Model 1.

Door hardware finish shall be chrome-plated brass or bronze, or stainless steel.

B203001 SOLID DOORS

Provide solid steel door assemblies other than at main entrance including pre-finished heavy-duty, non-corroding, insulated doors with frames and hardware.

B203002 GLAZED DOORS

Not Used

B203003 REVOLVING DOORS

Not Used

B203004 OVERHEAD AND ROLL-UP DOORS

Overhead and roll-up doors shall be NAGDM 102 Industrial designation.

Doors for buoy entrances shall be sectional overhead type or rolling service type. Doors shall have manual and automatic operation. Doors shall be operated by three-button electric power conforming to NEMA MG 1, NEMA ICS 1, NEMA ICS 2, and NEMA ICS 6. with auxiliary hand chain operation.

B203005 HANGAR DOORS

Not Used

B203006 BLAST RESISTANT DOORS

Not Used

B203007 GATES

Not Used

B203008 EXTERIOR DOOR HARDWARE

Provide the services of a certified door hardware consultant to prepare the door hardware schedule.

Provide hardware keying compatible with the existing NASA/Stennis Space Center keying system. Replacement interchangeable cores shall be compatible with NASA/Stennis Space Center preferred hardware.

Provide the services of a certified door hardware consultant to prepare the door hardware schedule.

B203090 OTHER EXTERIOR SPECIALTY DOORS

Not Used

--End of Section--

6. ENGINEERING SYSTEMS REQUIREMENTS

B30 ROOFING

B30 GENERAL SYSTEM DESCRIPTION

Roof systems shall be watertight and compatible with facility function, construction, and service conditions. Provide complete roof system design and construction services for the entire new facility roof system, including all ancillary and incidental work necessary for a complete, new, watertight roof system installation.

Submittal Requirements: Components of a minimum roof submittal shall include the roof plan, method of drainage, standard details and details unique to the project, wind load calculations and requirements.

Refer to UFC 3-310-01, UFC 3-100-10N, *Architecture*, IBC 2006 for 130mph design wind loads, and UFC 3-110-06, *Roofing*, for additional roofing requirements.

B3010 ROOF COVERINGS

B301001 STEEP SLOPE ROOFING SYSTEMS

Steep slope roofing systems are preferred over low slope roofing systems, where practical. Steep slope roofing systems that are acceptable include metal.

Metal roofing systems shall be designed to comply with a UFC 3-310-01, and IBC 2006 for 130mph design wind loads for wind uplift, and resist the negative pressure and uplift loads calculated in accordance with ASCE-7. Wind uplift resistance shall be validated by ASTM E 1592 testing.

Sub-purlins for the Structural Metal Roof System shall be galvanized and shop painted.

SSSMRS Warranty Certificate. At the completion of the project the Contractor shall furnish signed copies of the 5-year Warranty for Structural Standing Seam Metal Roof (SSSMR) System, a sample copy of which is attached to the PTS section [, and the 20-year Manufacturer's Material Warranties, and the manufacturer's 20-year system weather-tightness warranty.

B301002 LOW SLOPE ROOFING SYSTEMS

Not used.

B301003 ROOF INSULATION AND FILL

For fastening roof insulation on low-slope membrane roofs, fasteners shall be placed to withstand an uplift pressure as determined in accordance with UFC 3-310-01 and IBC 2006 for 130mph design wind load requirements.

--End of Section--

6. ENGINEERING SYSTEMS REQUIREMENTS

D40 FIRE PROTECTION

Refer to Part 4 Section D40 for performance requirements of the building elements included in the fire protection systems.

SYSTEM DESCRIPTION

Provide an integrated fire alarm and suppression system capable of notifying building occupants and controlling any fire that may start inside the facility. Paint Spraying Operations including enclosed spray booths and spray rooms shall be provided with means of egress that meet the requirements of NFPA 101, 2006 edition. Electrical and other sources of ignition and storage, handling and distribution of flammable and combustible liquids shall meet NFPA 33- 2007 edition. Fire suppression system shall be designed including seismic requirements per NFPA 13 and UFC 3-600-01 and 3-600-10N.

ANTI- TERRORISM.FORCE PROTECTION: To meet anti-terrorism and force protection requirements provide seismic restraints and supports on all sprinkler system components

GENERAL SYSTEM REQUIREMENTS

Provide working space around all equipment. Provide concrete pads under all equipment. Provide all required fittings, connections and accessories required for a complete and usable system. All equipment shall be installed per the criteria of RFP section D40 and the manufacturer's recommendations. Where the word "should" is used in the manufacturer's recommendations, substitute the word "shall".

All Design Documents, (i.e. Building Code/Life Safety Analysis, plans, specifications, calculations, etc.) developed for Section D40 shall be prepared by, or under the supervision of the design/build contractor's Registered Fire Protection Engineer, the Design Build Fire Protection Engineer (FPDOR).

The FPDOR shall have a firm contractual agreement with

- 1) the Design-Build Contractor and shall not be working for any of the subcontractors on the project he is reviewing .
- 2) The FPDOR shall have obtained professional registration in the field of fire protection and shall be working exclusively in this field.

ALL construction submittals, (i.e. shop drawings, calculations, catalog cuts, etc.) shall be reviewed and approved by the FPDOR.

The FPDOR and the NAVFAC Southeast FPE shall witness final acceptance tests for all systems installed for Section D40 and D5030.

The FPDOR is responsible for developing the hydraulic analysis, and developing a code analysis demonstrating compliance with all NFPA codes and the model building code utilized prior to initial design submittals.

The FPDOR is expected to verify provision and construction compliance of all passive fire protection systems in the facility (proper wall, floor, and ceiling rating, proper use of fireproofing and fire-stopping systems, protection of openings (coordination of door ratings, hardware, etc).

The FPDOR shall identify any special hazards in the facility (i.e. chemical use/storage, HAZMAT, flammable use/storage, etc.) and verify adequate protection (i.e. fire rated construction, explosion venting, alternate suppression, etc.) is provided.

Provide training for the active systems consisting of two (2) eight (8)-hour sessions to accommodate both shifts of the base fire department and allow for rescheduling for unforeseen fire department responses.

D4010 FIRE ALARM AND DETECTION SYSTEMS

Provide a complete, electrically supervised, addressable, intelligent, manual and automatic, annunciated combination fire alarm/mass notification system throughout the facility.

Provide an Individual Inhabited Facility/Building Subsystem type Mass Notification System (MNS) combined with the Fire Alarm System to meet mass notification requirements of UFC 4-021-01 Design and O&M: Mass Notification Systems. If required, the Mass Notification system shall be provided with amplifiers, speakers, microphone, zone paging adapter to interface with the telephone system. The MNS shall be a single zone; all call system that annunciates in all occupied spaces. The system shall be accessed via the telephone system by dialing a designated telephone extension.

Combine the fire alarm and mass notification System (MNS) Control systems notification appliances. Fire alarm system shall include voice evacuation system. Provide a voice evacuation microphone equipped announcement point for the facility.

Combination fire alarm/mass notification system shall include manual stations, system smoke detectors, duct smoke detectors, heat detectors, audio speakers, alarm strobes, textual devices, fire alarm radio transmitter, electrical supervision of all sprinkler system alarm and supervisory devices.

The system shall have the capability to take an external input from a remote microphone station and base wide mass notification message to provide real-time information to all building occupants or personnel in the immediate vicinity of a building during emergency situations

The system shall be capable of providing pre-recorded and live voice emergency messages to alert occupants and give specific instructions based on the emergency. At a minimum, there shall be a pre-recorded message for a fire emergency with instructions to evacuate the building, and a hazardous chemical release message with instructions to close all windows and doors, turn off all heating, air conditioning, and exhaust fans and to wait for further instructions. Coordinate with Stennis Space Center Fire Department during design.

Existing fire alarm systems on the installation use a Monaco radio alarm system. Building radio transceivers shall be compatible with the existing system. Stennis is currently installing the 'Siemens Firefinder (XLS) Fire Alarm Panel.' All new fire alarm panels must be the XLS or UL listed to be compatible with the 'Siemens Insight Life Safety System.' Coordinate with Stennis Space Center Fire Department during design.

D4020 FIRE SUPPRESSION WATER SUPPLY AND EQUIPMENT

Base hydraulic calculations on a static pressure of (63psig) with (1256 gpm) available at a residual pressure of (59 psig) at the junction with the water distribution piping system. The DBFPE shall conduct a flow test after award prior to any design submissions. The FPDOR shall determine the need for a fire pump based on building design and the available flow and pressure at the site.

The incoming sprinkler service shall be provided with a double check backflow preventer.

Depending on results of flow test, contractor may have to provide a horizontal split-case centrifugal, diesel and electric driven fire pumps with the minimum rated capacity based on results of the flow test.

D4030 STANDPIPE SYSTEMS

Not required.

D4040 SPRINKLER SYSTEMS

Provide wet pipe automatic sprinkler protection to provide complete coverage throughout the Paint and Blast Booth Facility. Paint spraying areas including paint booths and exhaust plenums and exhaust ductwork shall be designed, constructed and protected per the UFC 3-600-01 , NFPA 13, 2007 edition and NFPA 33, 2007edition. A separate, listed indicating valve(s), operable from floor level, shall be installed to control the sprinkler system protecting paint booths and mixing rooms. Stacks

and exhaust ducts shall be provided with access openings for inspection and cleaning of sprinklers.

The Paint Room, exhaust plenum and exhaust ductwork shall be designed for wet pipe sprinkler coverage for Extra Hazard Group 2 occupancy coverage per NFPA 13-2007. The design density shall be 0.40gpm /SF over an area of 3000SF with hose stream allowance of 750 gpm), the blast room shall be designed for Ordinary Group 2 Hazard occupancy with a wet pipe sprinkler system with a discharge density of 0.20gpm/SF over an area of 3000SF with hose stream allowance of 500 gpm).

Provide standard response sprinklers with ordinary temperature rating in areas with finished ceilings. Provide protection of sprinkler heads from paint overspray by either location or protective covering. Provide steel piping. Provide access openings in exhaust plenum and exhaust ductwork for inspection and replacement of sprinkler heads. Provide paint room with a separate O. S.& Y. shutoff valve, tamper and flow switches monitored by the building FACP

D4090 OTHER FIRE PROTECTION SYSTEMS

Portable fire extinguishers shall be provided and located in accordance with NFPA 10, 2007 edition

--End of Section--

6. ENGINEERING SYSTEMS REQUIREMENTS

D50 ELECTRICAL

SYSTEM DESCRIPTION

The electrical system shall be designed after a thorough site investigation and meeting with public works and the end users, and shall be in accordance with the most recent edition of the following applicable UFC design guides and design criteria: UFC 3-500-10N Design: Interior Electrical Requirements, UFC 3-530-01 Design: Interior and Exterior Lighting and Controls, UFC 3-550-03N Design: Power Distribution Systems, UFC 3-600-01 Design: Fire Protection Engineering for Facilities, UFC 4-010-01 Design: DoD Minimum Antiterrorism Standards for Buildings, UFC 4-021-01 Design: Mass Notification Systems, UFC 4-610-01N Design: Administration Facilities, and UFC 4-229-01N Design: General Maintenance Facilities. The Stennis Space Center Electrical Standards shall be followed.

Provide an interior electrical system including all accessories and devices as necessary and required for a complete and usable system. Electrical service is to be fed from substation 104 in B3202 to the Blast & Paint Facility, or from substation 164 located northwest of the project site (See Part 6 for site plan). The interior electrical shall consist of, but not be limited to, lighting and branch circuit systems, fire alarm/mass notification systems, lightning protection and grounding systems, and communications systems. Arrange the systems logically for easy testing and maintenance. Specify extremely durable components for a quality, low-maintenance installation. Electrical systems shall comply with program requirements, performance specification G40 and D50 and all applicable UFCs. This section covers installations out to the building 1.5 meter (5 foot) line.

GENERAL SYSTEM REQUIREMENTS

Provide an Electrical System complete in place, tested and approved, as specified throughout this RFP, as needed for a complete, usable and proper installation. All equipment shall be installed per the criteria of Section D50 and the manufacturer's recommendations. Where the word "should" is used in the manufacturer's recommendations, substitute the word "shall".

D5010 ELECTRICAL SERVICE AND DISTRIBUTION

D501001 MAIN TRANSFORMERS

Main transformer(s) are defined in Section G40, *Site Electrical Utilities*.

D501002 SERVICE ENTRANCE EQUIPMENT

The secondary service shall be terminated in the main service disconnecting means as soon as it enters the facility. Provide an interior distribution system consisting of insulated conductors in conduit for all equipment, plumbing systems, air conditioning and ventilation systems, fire alarm system, etc.

A detailed analysis of the electrical design shall be conducted. The electrical studies to be performed shall include, but not be limited to. Voltage drop, load flow, short circuit protection, and coordination. The method for performing these calculations shall be by computer programs designed for such purpose. Hand calculations for these complex computations shall not be used since hand calculations tend to require simplifying assumptions that limit accuracy and usefulness of the results.

Over-current protective devices in the system must be designed to isolate faults instantly with minimal equipment damage and minimal disruption to facility operations. If new service to the building is required, provide a main distribution panel as service equipment.

Feeders shall have over-current protection in accordance with NEC article 240.4 (latest edition), and service conductors shall be protected in accordance with NEC article 230.90 (latest edition).

D501003 INTERIOR DISTRIBUTION TRANSFORMERS

Provide energy efficient 80 degree rise, dry type transformers to step down secondary voltages for general-purpose outlets and other low voltage equipment.

The design shall provide a minimum of 20% allowance for growth.

D501004 PANELBOARDS

Provide distribution and branch circuit panelboards with bolt on type circuit breakers throughout the facility to serve loads as required. 480Y/277 volt, 3-phase, 4-wire panelboards shall be provided for distribution of large mechanical equipment and lighting loads. 208Y/120 volt, 3-phase, 4-wire panelboards shall be provided for distribution of small mechanical equipment and general receptacle loads. Panelboards shall be located throughout the facility to reduce voltage drop on branch circuit loads, efficiently serve equipment, and provide system flexibility. Panelboards shall be provided with a minimum of 20% space and 20% spare. Electrical equipment dedicated space and working clearance shall be in compliance with NEC (NFPA 70). Coordinate with other disciplines to avoid conflicts with other equipment.

D501005 ENCLOSED CIRCUIT BREAKERS

Provide enclosed circuit breakers for loads as required.

D501006 MOTOR CONTROL CENTERS

Provide motor control centers, individual motor starters with disconnect switches, combination motor starters, variable speed drives, reduced voltage controllers, manual motor starters, and combination motor starters for motor controls as required by mechanical equipment in accordance with NEC. Provide all circuits and connections for all motors and mechanical equipment.

120-volt motors will be specified to have integral thermal overload protection when available. If integral thermal overload protection is not available, provide manual thermal overload starters. Provide combination motor starter-disconnect controllers for poly-phase motors. Provide reduced voltage starters for motors over 25 HP. Coordinate type with motor design and starting torque requirements.

Provide horsepower-rated manual starters for 120-volt motors with integral thermal overload protection. The manual starter may serve as the disconnect means for 120-volt motors without integral thermal overload protection when properly located. Combination motor starter-disconnect controllers may serve as the disconnecting means for poly-phase motors when properly located. Provide additional non-fused disconnect switches within sight of the motor when the starter disconnect cannot be placed within sight of the motor.

D501090 OTHER SERVICE AND DISTRIBUTION

Provide transient voltage surge suppressors (TVSS) at the service entrance.

D5020 LIGHTING AND BRANCH WIRING

Provide lighting and general-purpose receptacles throughout all spaces as required. All general-purpose receptacles shall be 20 amp, NEMA WD 1. Receptacles for general purpose shall be circuited such that no more than six duplex (or three quad-duplex) receptacles are placed on one 20 amp, single-pole breaker. Quad-duplex receptacles for communications equipment shall be circuited such that one quad-duplex receptacle is placed on one 20 amp, single-pole breaker. Each new receptacle homerun shall have a dedicated neutral, multi-wire branch circuits (shared neutrals) shall not be used. Contractor shall provide ground fault circuit interrupting receptacles as required by the NEC (latest edition).

Provide receptacles and/or hard-wired power connections as required for any special equipment or furnishings included in sections E-10 and E-20 and Part 6 of this document.

D502001 BRANCH WIRING

All branch wiring shall be per UFC 3-500-10N. At a minimum, provide conductors with type THHN/THWN insulation for conductor sizes #12 through #1/0, and type XHHW insulation for conductor sizes #2/0 and larger. All conductors shall be copper and shall be routed in RGS conduit. All conductor sizes shall be #12 minimum.

D502002 LIGHTING EQUIPMENT

Provide a complete lighting system including emergency lighting, LED exit lights, and emergency egress lighting (either integral to the fixture or through stand-alone emergency packs). Building lighting shall consist of fluorescent and HID lighting including switches. All lighting control design, fixture layout, luminaire wattage requirements, lighting power allowance, etc. shall be in compliance with ASHRAE 90.1, 2004 Version.

Lighting design at a minimum shall consist of a combination of static fluorescent troffers, fluorescent high bays, fluorescent industrials, HID, and fluorescent down lights to meet the required foot-candle levels needed for the desired areas.

Lighting methods and foot-candle levels shall be in accordance with the Illuminating Engineering Society of North America (IESNA) or applicable UFC. Design to highest recommended foot-candle level. Illumination shall meet the requirements of the visual tasks being performed. General illumination requirements shall be determined in a plane of 30 inches above the floor.

Fluorescent fixtures shall utilize T5 or T8 lamps and electronic energy efficient, high frequency ballasts. Design shall employ multi-lamp standard ballasts with total harmonic distortion less than 10 percent.

Automatic shut-off systems, dimming ballast, and multi-level switching shall be used along with occupancy and daylight sensors to help reduce energy cost. Contractor shall coordinate all possible light fixture types and layout designs along with any control design requirements with the user and applicable design guides.

Exterior fixtures shall be dark sky cutoff type.

D5030 COMMUNICATIONS AND SECURITY

D503001 TELECOMMUNICATIONS SYSTEMS

Provide a complete building entrance facility for incoming service for 6 pairs of copper. Service and connection to the facility will be provided by others. In the event that the runs of category 6 cable exceed 295 feet to serve the new outlets, a new hub will need to be provided. Provide a backbone distribution system, and horizontal distribution system including, but not necessarily limited to, all wiring, pathway systems, grounding, backboards, connector blocks, protectors for all copper service entrance pairs, patch panels, outlet boxes, telephone jacks, data jacks and cover plates.

Provide a minimum of 1 voice/data outlet with location to be determined by the user.

D503002 PUBLIC ADDRESS SYSTEM

The Blast & Paint Facility shall be integrated in the NDBC and SSC mass notification/public address system and comply with applicable UFCs and SSC Standards.

D503090 OTHER COMMUNICATIONS AND ALARM SYSTEMS

See section D40 of this RFP for Fire Alarm/Mass Notification Systems

D5090 OTHER ELECTRICAL SERVICES

D509001 GENERAL CONSTRUCTION ITEMS (ELECTRICAL)

Provide General Construction Items (Electrical) including, but not necessarily limited to, all connections, fittings, boxes and associated equipment needed by this and other sections of this RFP as required for a complete and usable system.

Conduits, cable trays and busways that penetrate fire-rated walls, fire-rated partitions, or fire-rated floors shall be firestopped in accordance with Section C10, *Interior Construction*.

D509002 EMERGENCY LIGHTING AND POWER

Provide power and wiring for emergency lights and exit lights throughout the facility. Emergency light fixtures and all exit lights must be self-contained utilizing internal and external battery packs. Luminaires that provide normal and emergency lighting within the same enclosure are permitted, however emergency lights shall be on independent circuits to allow for testing. Fixtures with wall-mounted battery packs are prohibited.

Emergency lighting and exit lights shall be installed in accordance with NFPA 70, NFPA 101 and all applicable local and state codes. The system must be maintained and tested in accordance with NFPA 111, Stored Electrical Emergency and Standby Power Systems.

Batteries for emergency lighting fixtures, exit lights and battery fluorescent ballasts shall have a minimum warranty of five years and minimum expected battery life of 10 years. Battery fluorescent ballasts shall provide a minimum of 1100 lumens (or as required to meet emergency egress illumination criteria per NFPA 70 and 101) continuously for 90 minutes.

Exit signs shall utilize LED with illuminated letters displayed on an opaque background.

D509003 GROUNDING SYSTEMS

Provide a complete grounding system for the facility electrical and telecommunications systems.

D509004 LIGHTNING PROTECTION

Provide a complete lightning protection system (utilizing air terminals) including, but not necessarily limited to, strike termination devices, conductors, ground terminals, interconnecting conductors, surge suppression devices, and other connectors and fittings required for a complete and usable system. System shall be designed and provided per NFPA 780 and UL 96. The system shall bear a UL Master Label when complete. All criteria for obtaining the Master Label, such as surge protection on the electrical and communications service, shall be met. The Lightning protection system shall bond to the building structural steel for a completely, electrically continuous, structure. The systems mounting procedures and techniques shall be such that the warranty for the roof is not voided

D509005 ELECTRIC HEATING

Provide power wiring and connections as required for all electric heating systems and equipment.

--End of Section--

6. ENGINEERING SYSTEMS REQUIREMENTS

E10 EQUIPMENT

GENERAL SYSTEMS REQUIREMENTS

E1010 COMMERCIAL EQUIPMENT

The contractor shall obtain the services of blast and paint facility design build contractor specialists to provide all critical elements of the Blast and Paint Facility including the structure. The new Blast & Paint structure will provide blasting and painting operations for steel and aluminum buoys. The facility shall be configured for a pull through type of operation. This facility will be a turn key design by a qualified blast and paint operations design build contractor. All equipment shall be located indoors in equipment enclosures along one or both sides of Blast & Paint Facility.

This facility shall be a **ZERO** emissions facility as pertains to Mississippi Dept of Environmental Quality standards, with no air quality permit required.

All specialty equipment will be installed by qualified installers regularly engaged in installing the specialty equipment.

Foundations

Refer to Section F10, *Special Construction*

Superstructure

Refer to Section F10, *Special Construction*

Exterior Enclosure

Refer to Section F10, *Special Construction*

Roofing

Refer to Section F10, *Special Construction*

Interior Construction

Refer to Section F10, *Special Construction*

Interior Finishes

Refer to Section F10, *Special Construction*

Plumbing

Coordinate all interfaces with other contractors pertaining to Blast and Paint Facility.

Domestic Water Distribution

Provide Copper tubing piping and fittings for above ground and buried piping.

Provide isolation valves at supply to each area. Provide hose bibbs in mechanical equipment areas.

Provide reduced pressure principle type backflow preventer at service inlet to building and at make-up water lines supplying mechanical equipment.

Provide emergency shower and eyewash with tempered water in the blast and paint facility in accordance with OSHA. Provide with alarms and appurtenances for service within NEMA type 3 or 4 enclosures.

Provide gas fired water heater for the Blast and Paint Facility to provide hot water to stainless steel utility sink located next to paint mixing room and tempered water to emergency fixtures.

Provide tempered water mixing valve at emergency fixtures.

Provide mineral fiber insulation with vapor barrier on domestic water (hot and cold) supply and recirculation piping. Provide identification for piping and equipment.

Provide piping supports in accordance with the IPC. Provide inspections, disinfection, and testing in accordance with the IPC

Compressed Air

System shall provide clean dry air of adequate capacity for painting, abrasive blasting and tool operations that meet the blast and paint facilities needs. System shall include but not be limited to air compressors, compressed air receivers, dryers, valves and piping. The following types of compressed air system will be required for this facility: abrasive blast operations air, painting operations air, tool air, and breathing air. Consider using rotary screw air compressors with variable speed drive design.

Abrasive blast operations; provide air compressor along with all related components for two operators. Provide four abrasive blast stations; locate two on each side of blast bay. Provide all compressed air piping and operations related items required to perform intended blast operations including blast media delivery equipment.

Compressed air for all other operations; rotary oil-free compressors are recommended since this compressed air may be used as a source for breathing air at lower life cycle costs.

Provide low-pressure compressed air at 40 percent to 60 percent humidity and at 125 psig for painting and shop use. Air should be oil free to prevent paint contamination. Air outlets supplying tools requiring lubrication should be equipped with an in-line lubricator. Provide painting and tool compressed air and all related components including paint delivery equipment required to perform necessary operations and task.

Provide low-pressure compressed air at 40 percent to 60 percent humidity for breathing air in the both bays. Breathing air may be obtained from the oil-free shop air source through final purifiers in each bay or from a separate breathing air compressor and piping system that meets requirements by OSHA for minimum Grade D air. Breathing air from the

oil-free shop air source is preferred because of lower cost. Provide all compressed air piping and operations related items required to perform task.

The air outlets (quick connect fittings) for oil-free shop air, lubricated tool air, and breathing air should be different for each service and should not be compatible with each other.

Typical outlet quantities for each bay are: four breathing and four oil-free shop air and two lubricated tool air. Typically, two oil-free shop air outlets are required per ancillary space. Verify actual requirements for each space.

Locate the intake for breathing air in an uncontaminated area.

Provide piping supports in accordance with the IPC. Provide inspections, disinfection, and testing in accordance with the IPC

Sanitary Waste and Vent

Provide cast iron hub and spigot pipe and fittings with rubber compression gasket joints for above and below ground installation.

Provide floor drains in mechanical equipment spaces for general clean up and to receive condensate from equipment.

Provide piping supports in accordance with the IPC. Provide inspections, cleaning and testing in accordance with the IPC

Natural Gas

Connect to natural gas service at the meter/regulator for this facility and provide piping, fittings, valves and all related items as required providing a complete and functional system.

Provide piping supports in accordance with the IPC. Provide inspections, cleaning, and testing in accordance with the IPC

HVAC and other Mechanical Systems

Abrasive Blast Bay

The blasting operation bay shall be provided with heating, ventilating, and humidity control systems.

The blast room shall consist of a floor sidewall type abrasive reclaim system. The reclaim system shall collect the used abrasives, separate reusable abrasive from waste and return clean abrasive to the abrasive storage hopper while sending removed waste to a dust collector with waste storage container. The dust collector shall provide a cleaning efficiency of 99.9% down to a particle size of .5 micron or less to meet guidelines for particle emissions. Dust collector shall consist of cartridge filters with a pulse jet cleaning system that will automatically cleans the filter elements while the dust collector is in operation, eliminating any production down time for a filter cleaning cycle.

Consider re-circulating exhaust air back into air handling system. See ANSI Z-9.7, Recirculation of Air from Industrial Process Exhaust Systems and ASHRAE-95 after-filter assembly to allow the air exhausted from the dust collector to be circulated back into the blast room's air handling systems.

Blast media shall be a recyclable type for use on aluminum and steel buoys. Blasting operations shall provide a SSPC-SP 10 (near white) surface with a minimum surface profile of 2 mils. Media shall be readily available. When the building is completed and accepted the blast media hopper shall be full of the media recommended by the Contractor/ Equipment Manufacturer following all acceptance testing.

Paint Bay

Paint spraying areas shall be provided with heating, ventilating, and humidity control systems. See Part 6; Paint Specifications. Systems shall be of adequate size to remove flammable vapors, mists, or powders to a safe location and to confine and control combustible residues. Mechanical ventilation shall be kept in operation at all times while spraying operations are being conducted and for a sufficient time thereafter to allow vapors from drying coated articles and drying finishing material residue to be

exhausted. The location of filters in a spray booth shall be so as to not reduce the effective booth enclosure of the articles being sprayed.

Consider recirculation of airflow in accordance with requirements of NFPA-33 and ANSI Z-9.7.

Paint Mix Room

Paint mix room shall be provided with heat and ventilation air system of adequate size to accommodate the pre-engineered paint mixing room exhaust system for remove of flammable vapors. Systems shall be kept in operation at all times while mixing operations are being conducted and in accordance with OSHA and NFPA requirements.

Equipment Rooms

Mechanical equipment rooms shall be provided with heating, ventilating and exhaust systems. Provide propeller wall type exhaust fans and outside air intake louvers with motorized dampers for ventilation of mechanical equipment areas. Provide gas-fired unit heaters to serve the heating requirements of mechanical equipment areas.

General Requirements:

Provide working space around all equipment. Provide all required fittings, connections and accessories required for a complete and usable system.

Provide seismic restraints and Comply with the Force Protection Criteria.

All equipment shall be installed per the criteria in RFP Section E10 and the manufacturer's recommendations. Where the word "should" is used in manufacturer's instructions, substitute the word "shall".

Provide air conditioning and heating for spaces as indicated and for the following Design conditions:

Outside Conditions					
Summer	33.3	Degrees C dry bulb	Winter	+0.6	Degrees C
	92	Degrees F dry bulb		33	Degrees F
	27.2	Degrees C wet bulb			
	81	Degrees F wet bulb			

Paint Area Inside Conditions					
Summer	32.2	Degrees C dry bulb	Winter	18.3	Degrees C
	90	Degrees F dry bulb		65	Degrees F
	50	%RH <u>Maximum</u>			

Blast Area Inside Conditions					
Summer	32.2	Degrees C dry bulb	Winter	18.3	Degrees C
	90	Degrees F dry bulb		65	Degrees F
	50	%RH <u>Maximum</u>			

Mech. Equipment and Other Areas Inside Conditions					
Summer	5.6	Degrees C dry bulb above ambient	Winter	18.3	Degrees C
	10	Degrees F dry bulb Above ambient		65	Degrees F

Blast area shall be a separate zone, humidity control, heating and ventilation shall be provided.
Paint area shall be a separate zone, humidity control, heating and ventilation shall be provided.

Material and Equipment Qualifications: All materials and equipment shall have been in satisfactory commercial or industrial use for 2 years prior to the bid opening. The 2-year use shall include applications of equipment and materials under similar circumstances and of similar size. The product shall have been for sale on the commercial market through advertisements, manufacturer's catalogs, or brochures during the 2-year period.

Motors: Single-phase fractional-horsepower alternating-current motors shall be high efficiency types corresponding to the applications listed in NEMA MG 11. Select polyphase motors based on high efficiency characteristics relative to the applications as listed in NEMA MG 10. Additionally, all polyphase squirrel-cage medium induction motors with continuous ratings shall meet or exceed energy efficient ratings per Table 12-10 of NEMA MG 1. Provide controllers for 3-phase motors rated 0.75 kW (1 hp) and above with phase voltage monitors designed to protect motors from phase loss and over/under-voltage. Provide means to prevent automatic restart by a time adjustable restart relay. For packaged equipment, the manufacturer shall provide controllers including the required monitors and timed restart. Provide reduced voltage starters for all motors 25 hp and larger.

Provide housekeeping pads and vibration isolators under all floor-mounted equipment.

All mechanical equipment that must be located outdoors shall have painted finishes that pass a salt-spray test conducted per ASTM B117 for duration of at least 500 hours.

Consider the use of energy recovery units in the industrial air handling systems for Blast and Paint areas.

The facility including all systems shall be in accordance with all related federal, state and local regulations including but not limited to the following: UFC 3-410-04N *Industrial Ventilation Systems*, NFPA 33, NFPA 90A, NFPA 101, OSHA, EPA, ANSI Z9.3 *Exhaust Systems- Spray Finishing Operations - Safety Code for Design, Construction and Ventilation* and ANSI Z9.4 *Abrasive-blasting operations – Ventilation and Safe Practices*. Provide Ventilation rates and systems per the latest edition of ASHRAE Standard 62, *Ventilation for Acceptable Indoor Air Quality*.

The cooling, heating, and ventilating systems shall provide each zone (area) with the choice of heating or cooling year round unless otherwise indicated. Each area shall have its own limited range of control, as allowed by the control system central workstation.

Zone the HVAC system as follows:

Each area shall be a separate zone.

Controls

Provide a complete Direct Digital Control (DDC) system for the facility.

The direct digital control (DDC) system shall communicate with the existing DDC systems and EMCS system. The DDC system shall be Siemens Apogee with Ethernet communication.

Provide electronic controls for the HVAC systems and equipment.

All air systems, critical component failure, etc. should be monitored by the building automated control system. All critical alarms, notifications and status points shall also be indicated on a control panel either within the Blast and Paint Facility or at an operator monitoring station located in Building 3202.

Systems Testing Adjusting and Balancing

Provide complete Testing and Balancing (TAB) of all air and water distribution systems and HVAC equipment.

Mechanical Systems Commissioning

Provide commissioning for all mechanical systems prior to building occupancy.

Commissioning procedures shall be in accordance with ASHRAE Standards.

Fire Protection

Refer to Section D40, *Fire Protection*.

Electrical

Refer to Section D50, *Electrical*.

E1020 INSTITUTIONAL EQUIPMENT

Not Used.

E1030 VEHICULAR EQUIPMENT

Not Used.

E1040 GOVERNMENT FURNISHED EQUIPMENT

Not Used.

E1090 OTHER EQUIPMENT

Not Used.

--End of Section--

6. ENGINEERING SYSTEMS REQUIREMENTS

F10 SPECIAL CONSTRUCTION

SYSTEM DESCRIPTION

Special Construction shall include special structures such as pre-engineered buildings. (Including foundation and slab).

GENERAL SYSTEMS REQUIREMENTS

F1010 SPECIAL STRUCTURES

F101001 PRE-ENGINEERED METAL BUILDINGS

Provide the building foundation and other systems in accordance with UFC 3-300-10N, *Structural Engineering*.

This building can be provided in many ways. It can be a pre-engineered structure, conventionally framed, or modular. The contractor must determine the highest quality structure at the lowest price.

The facility must be 5,000 square feet (50 feet by 100 feet) with an eave height of 70 feet high (60' Clear). It is preferred that the structure and skin be of metal.

The framing system for the steel structure shall be in accordance with AISC M016, except that end frames may be of rigid frame or beam and column design.

In addition to the design loads determined in accordance with ASTM 7-05, design the structure in accordance with the following loading criteria:

Importance Factors

Use Occupancy Category II in Table 1 of UFC 3-310-01 for determining Importance Factors for seismic, snow, and wind design.

Wind Exposure

Wind design shall be based on Exposure C.

Provide framed openings for doors. The door openings shall integrate with the wind bracing system for the building.

F101002 PRE-ENGINEERED HAZARDOUS MATERIAL STORAGE BUILDING

Secure Paint Storage (Hazardous Material / Flammable Liquids Storage) Building shall be designed for outdoor storage of paint, thinner, hazardous waste and paint thinner recycle machine. Building shall be a minimum of 220 square feet x 8 foot high with two personal doors and with one roll-up door located on one end. Unit shall be FM approved, include UL listed electrical accessories, and be EPA, OSHA, and NFPA 30 compliant. Unit shall include as a minimum but not be limited to the following:

Double wall interlocking or all-welded construction (3" air space with insulation between walls and roof)

Sump: steel liquid tight, continuously welded.

Removable galvanized steel safety floor planking or grating

Forklift accessible: Ramp w/ Skid-Resistant Finish

Shelving, 25 inches wide

Explosion Proof interior lights w/switch

Explosion Proof interior receptacle for paint thinner recycle machine

NFPA & OSHA Compliant Grounding: Static ground connection inside and out

Labeling: NFR warning label, Hazard Ratings System, Instructions

Environmentally Controlled to maintain temperature between 55 and 95 deg. F

Portable Eyewash Station (6 Gal.)

Explosion Relief Panels

Chemical/corrosive/ultraviolet impact resistant paint

Fire rating based on location: If a building is to be located more than 10 feet but less than 75 feet from a main building or property line, a **2 Hour Fire Rating is required**. If a building is to be located 10 feet or less from a main building or property line, a **4 Hour Fire Rating** is required.

Restraints: a minimum of 4 bolt down points and secured to concrete foundation for wind and seismic bracing.

F101003 PRE-ENGINEERED PAINT MIXING ROOM

Provide a packaged pre-engineered 64 square foot paint mixing room complete with all necessary hardware to meet the applicable national requirements established by OSHA and the NFPA for mixing room construction. Unit shall be located inside the Blast and Paint facility near paint application equipment.

6. ENGINEERING SYSTEMS REQUIREMENTS

F20 SELECTIVE BUILDING DEMOLITION

GENERAL SYSTEMS REQUIREMENTS

Perform all off-site work necessary to meet the requirements of the project, local codes, reference standards, technical specifications and performance criteria.

Identify and obtain all permits to comply with all federal, state, and local regulatory requirements associated with this work. The contractor shall submit complete the "Permits Record of Decision" (PROD) form with the first design submittal package. A blank PROD form is in the UFC 3-200-10N, *Civil Engineering*. Contractor shall determine correct permit fees and pay said fees. Copies of all permits, permit applications, and the completed PROD form shall be forwarded to the EFD Environmental Reviewer.

Coordinate and obtain approval from the Contracting Officer for proposed haul routes, work site access points, employee parking locations and material laydown and storage area).

F2010 BUILDING ELEMENTS DEMOLITION

Building 3209, the existing paint / blast facility, will be partially demolished and some items shall be salvaged. All demolished structural steel shall be salvaged and become the property of NASA and delivered to Building 2204. The demolition includes, but not limited to CMU walls and steel paint/blast facility. Relocate the 20-foot paint storage container, and cargo unit to area directed by the Contracting Officer or ROICC. The HAZMAT storage building shall remain undisturbed. B3209 is to be demolished only after the new Paint and Blast Facility is operational.

Selective demolition of support buildings in this general location is also required. The support buildings consist of the paint storage container (20' container approximately 100 feet to the northwest of B3209), the cargo

unit and the air compressor from the building to the south of B3209. B3209 and the support buildings are to remain operational until the new Blast and Paint facility is operational.

A 150 HP air compressor will be disconnected and re-located per the direction of the ROICC.

F2010 1.1 GENERAL DEMOLITION

Building 3209, the existing paint / blast facility, will be demolished and some items shall be salvaged. All demolished structural steel shall be salvaged and become the property of NASA and delivered to Building 2204. The demolition includes, but not limited to CMU walls and steel paint/blast facility. B3209 is to be demolished only after the new Paint and Blast Facility is operational. Verify with NASA for additional items to be salvaged.

F2010 1.2 UTILITIES

Utilities must be coordinated with on-site personnel for planned outages.

F2010 1.3 DUST CONTROL

Prevent the spread of dust and debris to occupied portions of the building and avoid the creation of a nuisance or hazard in the surrounding area.

F2010 1.4 TRAFFIC CONTROL

Removal of debris will be via North on Road H.

F2010 1.5 WEATHER PROTECTION

Not Used.

F2010 1.6 BURNING

Burning will not be permitted.

F201001 SUBSTRUCTURE & SUPERSTRUCTURE

The steel for this building is to be dismantled and hauled to Building 2204 Stennis Space Center.

F201002 EXTERIOR CLOSURE

The steel siding for this building is to be dismantled and hauled to Building 2204 Stennis Space Center.

F201003 ROOFING

The metal roof for this building is to be dismantled and hauled to Building 2204 Stennis Space Center.

F201004 INTERIOR CONSTRUCTION & FINISHES

Not Used.

F201005 CONVEYING SYSTEMS

Not Used.

F201006 MECHANICAL SYSTEMS

Refer to Part 3 Section D20 and D30 for the description of mechanical systems to be demolished.

F201007 ELECTRICAL SYSTEMS

Refer to Part 3 Section D50 for the description of electrical systems to be demolished.

F201008 EQUIPMENT & FURNISHINGS

Not Used.

F201090 OTHER NON-HAZARDOUS SELECTIVE BUILDING DEMOLITION

Disconnect and remove the 150 HP air compressor. Deliver to a site at Stennis Space Center. The location will be determined by the ROICC.

F2020 HAZARDOUS COMPONENT ABATEMENT

A report prepared by BAT Associates, Inc. for each of the following: asbestos and lead based paint is provided to support this project and these reports are included in Part 6 of this RFP.

F2020 1.1 PRIVATE QUALIFIED PERSON (PQP)

The General Contractor is required to hire as a first tier subcontractor a PQP to ensure compliance with the approved work plans and perform independent inspections, testing and verification of the hazardous components work including: asbestos, lead containing paint, cadmium containing paint, chromium containing paint, mercury & LLR components, PCBs ODS, animal droppings and molds and spores.

F2020 1.2 FURNISHINGS

Not Used.

F2020 1.3 ASBESTOS

The Asbestos test report by BAT Associates, Inc. did not determine that there were less than 1% asbestoses CH detected. This would indicate that no special requirements are required for removal. See report in Part 6 Attachments.

F2020 1.4 LEAD BASED PAINT

The work includes removal of components that are painted with Lead base paint. The substrates and items that contain lead base paint can be found in the test report by BAT Associates, Inc. See report in Part 6 Attachments.

F2020 1.5 PAINT RELATED WORK

The work will require disturbance of paint containing lead. Paint related work includes: removal of components with lead base paint. For more detailed information regarding concentrations, locations, etc. of existing paints please refer to the test report by BAT Associates, Inc. See report in Part 6 Attachments.

F2020 1.6 MERCURY & LLR COMPONENTS

Not Used.

F2020 1.7 PCB'S

Remove all light ballasts, transformers, capacitors, and STC without markings regarding PCB content ("NO PCB", etc.) as PCB containing and deliver to NASA Building 2204.

**F2020 1.8 OZONE DEPLETING
SUBSTANCES (ODS)**

Not Used.

F2020 1.9 ANIMAL DROPPINGS

Not Used.

F2020 1.10 MOLDS AND SPORES

Not Used.

F2020 1.11 DISPOSAL

The structural steel salvage shall become the property of NASA and shall be transported to Building 2204 at Stennis Space Center. Verify with NASA what other materials are required for salvage prior to demolition.

--End of Section--

6. ENGINEERING SYSTEMS REQUIREMENTS

G10 SITE PREPARATION

SYSTEM DESCRIPTION

The site preparation system consists of site clearing, demolition, salvage, relocation, earthwork, and hazardous waste remediation necessary to ready the site for other work associated with the project.

GENERAL SYSTEM REQUIREMENTS

Develop the project site and perform all off-site work necessary to meet the requirements of the project, antiterrorism criteria, local codes, reference standards, technical specifications and performance criteria.

A topographic survey of the existing site has been performed. Prior to starting work, physically verify the location of all existing utilities and obtain all additional survey data required to provide a quality final design.

A geotechnical survey of the existing site has been performed. Subsurface soil information, including the geotechnical report, is included in other portions of this RFP. This information is included for the Contractor's information only, and is not guaranteed to fully represent all subsurface conditions. The data included in this RFP are intended for proposal preparation and preliminary design only. Contractor shall perform, at his expense, such subsurface exploration, investigation, testing, and analysis as his Designer of Record deems necessary for the design and construction of the requirements of this RFP.

A registered Professional Engineer shall provide inspection of excavations and soil/groundwater conditions throughout construction. The Engineer shall be responsible for performing pre-construction and periodic site visits throughout construction to assess site conditions. The Engineer, with the concurrence of the Contractor and the Contracting Officer or ROICC Officer, shall update the excavation, sheeting, shoring and dewatering plans as construction progresses to reflect actual site conditions and shall

submit the updated plan and a written report (with professional stamp) at least monthly informing the Contractor and ROICC Officer of the status of the plan and an accounting of Contractor adherence to the plan; specifically addressing any present or potential problems. The Engineer shall be available to meet with the ROICC Officer at any time throughout the contract duration. The Contractor shall bear all costs of the Engineer.

For illustrative purposes, a concept sketch has been prepared and included in Part 6 Attachments. These sketches are intended solely as an aid to the designer.

Minimize the impact of construction activity on operations and neighboring facilities.

Identify and obtain all permits to comply with all federal, state, and local regulatory requirements associated with this work. The contractor shall submit a complete "Permits Record of Decision" (PROD) form with the first design submittal package. A blank PROD form can be obtained at the Download Tab of Part 6 of the NAVFAC Design-Build website at the following link
<http://www.wbdg.org/ndbm/Download/Download.html?Tab=Download>. Contractor shall determine correct permit fees and pay said fees. Copies of all permits, permit applications, and the completed PROD form shall be forwarded to the Government's Civil Reviewer and Environmental Reviewer.

Coordinate and obtain the Resident Officer In Charge of Construction's (ROICC) approval for proposed haul route(s), work site access point(s), employee parking location(s) and material laydown and storage area(s).

Refer to Site Analysis and Building Requirements Sections for additional site preparation functional program information.

G1010 SITE CLEARING

G101001 CLEARING

All timber on the project site noted for clearing shall become the property of the Contractor, and shall be removed from the project site and disposed of off station.

Burning will not be allowed.

G101002 TREE REMOVAL

Remove and dispose of all trees as required for project construction.

G101003 STUMP REMOVAL

Remove and dispose of all tree stumps as required for project construction.

G101004 GRUBBING

Grub all tree stumps as required for project construction.

G101005 SELECTIVE THINNING

Not used.

G101006 DEBRIS DISPOSAL

All grubbing and clearing residue, demolished material, rubbish and debris generated by this project shall be hauled off-site and off station by the Contractor.

G1020 SITE DEMOLITION & RELOCATIONS

Refer to G102001 for salvaged and relocated items. Steel bollards filled with concrete and fencing that interferes with operations of the new Blast & Paint Booth shall be removed and disposed of off-site.

G102001 BUILDING MASS DEMOLITION

Building 3209, the existing paint / blast facility, will be partially demolished and some items shall be salvaged. All demolished structural steel shall be salvaged and become the property of NASA and delivered to Building 2204. The demolition includes, but not limited to CMU walls and steel paint/blast facility. Relocate the 20-foot paint storage container, cargo unit, and air compressor to area directed by the Contracting Officer or ROICC. The HAZMAT storage building shall remain undisturbed. B3209 is to be demolished only after the new Paint and Blast Facility is operational.

Refer to Section F20 for additional information.

G102002 ABOVEGROUND SITE DEMOLITION

The demolition includes, but not limited to CMU walls and steel paint/blast facility.

G102002 1.1 ABOVEGROUND STORAGE TANKS

Not used.

G102003 UNDERGROUND SITE DEMOLITION

Abandonment of utility systems shall be done in a manner that conforms to applicable installation codes and regulations. Utilities shall not be abandoned in place underneath or within 10 feet of any new facilities.

All conduits to be abandoned shall have wiring removed.

All piping to be abandoned shall be filled with flowable fill. Piping shall be filled with flowable fill under pavements subject to potential vehicle loadings.

Remove existing utility structures to 3 feet below existing or new adjacent grade, whichever is greater. Break up bases to permit drainage. Fill with clean sand.

G102003 1.1 UNDERGROUND STORAGE TANKS

Not used.

G102004 BUILDING RELOCATION

Not used.

G102005 UTILITY RELOCATION

Locate utilities and relocate in order to ensure that none are under the buildings footprints. The designer shall take safety and maintenance into consideration during the design of utilities and relocation of utilities.

G102006 FENCING RELOCATION

Not used.

G102007 SITE CLEANUP

At the conclusion of the project, ensure that all construction debris and rubbish is removed from the site and disposed of off station.

G102090 OTHER SITE DEMOLITION & RELOCATIONS

Relocate the 20-foot paint storage container, cargo unit, and air compressor to area directed by the Contracting Officer or ROICC.

G1030 SITE EARTHWORK

G103001 GRADING

Finish floor elevations for new facilities shall be at least 1 foot above the 100 year flood elevation. Provide elevations for mechanical/electrical equipment pads at least 1 foot above the 100 year flood elevation.

G103002 COMMON EXCAVATION

Minimize cut and fill whilst ensuring positive drainage and observing the recommendations of the geotechnical investigation.

G103003 ROCK EXCAVATION

Blasting will not be permitted.

G103004 FILL & BORROW

Borrow and select fill shall come from off-base sources.

G103005 COMPACTION

All soil shall be compacted in accordance with the recommendations of the geotechnical investigation.

G103006 SOIL STABILIZATION

Provide soil stabilization using geosynthetics, such as geotextiles and geogrids designed to function as required by site conditions.

G103007 SLOPE STABILIZATION

Provide slope stabilization through appropriate grading and site design for a minimum factor of safety of 1.5 or slope that does not exceed the

maximum slope per local code requirements. Where necessary, use the following techniques for slope stabilization: geogrids, gabions, or riprap or concrete.

G103008 SOIL TREATMENT

Treat the area around the entire foundation of each building for termite control in accordance with manufacturer's instructions.

G103009 SHORING

Provide shoring in accordance with federal state and local codes in order to ensure worker safety. Refer to G103002.

G103010 TEMPORARY DEWATERING

Ensure that all excavations are dewatered to the degree necessary to ensure worker safety and sound construction in accordance with both federal and state laws and regulations.

G103011 TEMPORARY EROSION & SEDIMENT CONTROL

Construct temporary measures including but not limited to filter barriers, silt fence, tree protection, inlet protection, culvert protection, construction entrance, dust suppressors, temporary seeding, and erosion control matting to reduce on-site erosion and off-site runoff and sedimentation. All temporary erosion control measures shall conform to the requirements of the authority having jurisdiction.

G1040 HAZARDOUS WASTE REMEDIATION

Not used.

G1040 1.1 EXCAVATION

Not used.

G1040 1.2 STOCKPILED SOILS

Not used.

G1040 1.3 CLEAN FILL

Not used

G1040 1.4 SPILLS

Not used.

G1040 1.5 DISPOSAL

Not used.

--End of Section--

6. ENGINEERING SYSTEMS REQUIREMENTS

G20 SITE IMPROVEMENTS

SYSTEM DESCRIPTION

The site improvements system consists of pavements and pavement related features, landscaping and other exterior site development work related to this project.

GENERAL SYSTEMS REQUIREMENTS

Provide site improvements as required to make a useable facility that meets functional and operational requirements, incorporates all applicable anti-terrorism, force protection and physical security requirements and blends into the existing environment.

Provide site improvements in conformance with applicable requirements of the Uniform Federal Accessibility Standards.

Identify and obtain all permits to comply with all federal, state, and local regulatory requirements associated with this work. The contractor shall complete the "Permits Record of Decision" (PROD) form with the first design submittal package. A blank PROD form can be obtained at the Download Tab of Part 6 of the NAVFAC Design-Build website at the following link
<http://www.wbdg.org/ndbm/Download/Download.html?Tab=Download>. Contractor shall determine correct permit fees and pay said fees. Copies of all permits, permit applications, and the completed PROD form shall be forwarded to the Government's Civil Reviewer.

Provide improvements as required to conform to all applicable anti-terrorism and physical security requirements.

Minimize the impact of construction activity on operations and neighboring facilities.

Locate new site improvements at locations indicated on the drawings in another part of this RFP. If specific locations are not provided, site the improvements to develop appropriate and positive relationships with other facilities and to conform to existing development patterns.

Refer to Site Analysis and Building Requirements Sections for additional site improvement functional program information.

G2010 ROADWAYS

Provide roadways, as required, to allow for safe, convenient and logical circulation, while discouraging through traffic. The design of pavements shall take into consideration the anticipated daily traffic of all types of the NDBC buoys and the carriers over the life of the project 20 years as well as the existing soil conditions at the site.

Provide roadways of Portland Cement Concrete rigid pavement where indicated on the drawings in another part of this RFP.

G201001 BASES & SUBBASES

The base and subbase of the Blast & Paint Facility shall follow all state, federal, and installation design criteria as well as the recommendations of the Geotechnical Survey.

G201002 CURBS & GUTTERS

Not used.

G201003 PAVED SURFACES

The paved surface of the Blast & Paint Facility shall follow all state, federal, and installation design criteria as well as the recommendations of the Geotechnical Survey.

G201004 MARKING & SIGNAGE

Provide pavement markings to match existing.

Provide signage to comply with Stennis Space Center Signage Implementation and Control Plan.

Provide temporary pavement markings and signage throughout construction to meet phasing requirements indicated in the project program. Provide temporary signage in accordance with the MUTCD.

G201005 GUARDRAILS & BARRIERS

Not used.

G201006 RESURFACING

Not used.

G201090 OTHER ROADWAYS

Not used.

G2020 PARKING LOTS

Not used.

G202001 BASES & SUBBASES

Not used.

G202002 CURBS & GUTTERS

Not used..

G202003 PAVED SURFACES

Not used.

G202004 MARKING & SIGNAGE

Provide signage to comply with Stennis Space Center Signage Implementation and Control Plan.

G202005 GUARDRAILS & BARRIERS

Not used.

G202006 RESURFACING

Not used.

G202007 MISCELLANEOUSE STRUCTURES AND EQUIPMENT

Not used.

G202090 OTHER PARKING LOTS

Not used.

G2030 PEDESTRIAN PAVING

Not used.

G203001 BASES & SUBBASES

Not used..

G203002 CURBS & GUTTERS

Not used.

G203003 PAVED SURFACES

Use materials and place them in accordance with the Mississippi Department of Transportation (MDOT) design manual.

G203004 GUARDRAILS & BARRIERS

Not used.

G203005 RESURFACING

Not used.

G203006 OTHER WALKS, STEPS & TERRACES

Not used.

G2040 SITE DEVELOPMENT

G204001 FENCING & GATES

Not used.

G204002 RETAINING AND FREESTANDING WALLS

Not used.

G204003 EXTERIOR FURNISHINGS

Not used.

G204004 SECURITY STRUCTURES

Not used.

G204005 SIGNAGE

Provide signage in accordance with Stennis Space Center Signage Implementation and Control Plan.

G204006 FOUNTAINS & POOLS

Not used.

G204007 PLAYING FIELDS

Not used.

G204008 TERRACE AND PERIMETER WALLS

Not used.

G204009 FLAGPOLES

Not used.

G204090 OTHER SITE IMPROVEMENTS

Not used.

G2050 LANDSCAPING

Provide landscaping consisting of seeding all disturbed areas and mulch required areas while complying with all applicable anti-terrorism, force protection and physical security requirements.

Provide shrubs or small growing trees for screening of mechanical equipment/wall, dumpster enclosures, and other obstructions that do not present an aesthetic view from the street.

G205001 FINE GRADING AND SOIL PREPARATION

Provide fine grading and soil preparation that will ensure positive storm drainage and support the establishment and growth of the landscaping.

G205002 EROSION CONTROL MEASURES

Prevent erosion from occurring by providing erosion control measures as required by city, state and federal requirements.

G205003 TOPSOIL AND PLANTING BEDS

See G205005 Plantings.

G205004 SEEDING SPRIGGING AND SODDING

Seed all disturbed areas.

G205005 PLANTINGS

Preserve existing trees to the greatest extent possible.

G205006 PLANTERS

Not used.

G205007 IRRIGATION SYSTEMS

Not used.

G205090 OTHER LANDSCAPING

Not used.

--End of Section--

6. ENGINEERING SYSTEMS REQUIREMENTS

G30 SITE CIVIL/MECHANICAL UTILITIES

SYSTEM DESCRIPTION

The site civil/mechanical utility systems include water supply systems, sanitary sewer systems, storm drainage systems, heating distribution systems, cooling distribution systems, fuel distribution systems and associated appurtenances which are more than 5 feet outside the building.

GENERAL SYSTEM REQUIREMENTS

Develop the site to provide water, fire protection, sanitary sewer, storm drainage, heating, cooling and fuel distribution services that meet the requirements of each applicable regulatory agency that governs and issues permits for the construction and operation of these systems.

Provide each system complete and ready for operation.

Physically verify the location of existing above and below ground utilities prior to starting work.

Identify and obtain all permits to comply with all federal, state, and local regulatory requirements associated with this work. The contractor shall complete the "Permits Record of Decision" (PROD) form with the first design submittal package. A blank PROD form can be obtained at the Download Tab of Part 6 of the NAVFAC Design-Build website at the following link
<http://www.wbdg.org/ndbm/Download/Download.html?Tab=Download>. Contractor shall determine correct permit fees and pay said fees. Copies of all permits, permit applications, and the completed PROD form shall be forwarded to the Government's Civil/Mechanical Reviewer.

Minimize the impact of construction activity on facility operations and neighboring facilities.

Utility connection points are indicated on the drawings in another part of this RFP. These connection points are conceptual only. They are subject to change during design. Obtain final approvals from the Government's Civil/Mechanical Reviewer and the Contracting Officer or ROICC Officer for all utility connection points associated with this work.

Coordinate with the local utility providers and pay any fees or charges required to connect to their utility.

Refer to Site Analysis and Building Requirements Sections for additional site civil/mechanical utilities information.

Provide all required fittings, connections and accessories required for a complete and usable system. All equipment shall be installed per the criteria of RFP Section G30 and the manufacturer's recommendations. Where the word "should" is used in the manufacturer's recommendations, substitute the word "shall". Any non-metallic utility shall include metallic locator tracer wire. No utilities shall be located under any new concrete slabs. The designer shall confirm the existing utilities are able to handle the capacity of the new expansions, buildings, and renovations.

G3010 WATER SUPPLY

The new water system is a relocation of the existing water system. The existing water system serving the project site is owned, operated, and maintained by the installation. Provide the new water system and connections to the existing water system in accordance with UFC 3-200-10N *Civil Engineering*; UFC 3-230-03A Water Supply, the American Water Works Association (AWWA) Standards and Manuals of Water Supply Practices, the utility provider's requirements; and the state waterworks' regulations; whichever is more stringent.

Notify the utility provider of the additional demand generated by the proposed facility. Provide a copy of all correspondence with the utility provider to the Government's Civil/Mechanical Reviewer.

Provide connection to the existing water distribution system at the point indicated on the drawings in another part of this RFP.

G301001 WELL SYSTEMS

Not used.

G301002 POTABLE WATER DISTRIBUTION

Connect the new potable water distribution system to the distribution system at the point indicated on the drawings in another part of this RFP.

A water meter on each proposed service line is not required.

Fire hydrants shall be painted per the installation standards.

Where backflow prevention is required, backflow preventers will not be allowed aboveground outside the building.

G301003 POTABLE WATER STORAGE

Not used.

G301004 FIRE PROTECTION WATER DISTRIBUTION

Provide a connection and sufficient supply to ensure a fully functioning fire protection system that meets all the fire fighting and code requirements both inside and outside the building. Provide hydrants, valves, and fire department connections. All fire protection shall follow the criteria of NFPA 24.

G301005 FIRE PROTECTION WATER STORAGE

Not used.

G301006 NON-POTABLE WATER DISTRIBUTION

Not used

G301007 PUMPING STATIONS

A package booster pump station will not be required.

G301008 PACKAGED WATER TREATMENT PLANTS

Not used.

G301090 OTHER WATER SUPPLY

Not used.

G3020 SANITARY SEWER

The new sanitary sewer system is an extension of the existing sanitary sewer collection system. The existing sanitary sewer collection system serving the project site is owned, operated, and maintained by the installation. Provide the new sanitary sewer system and connections to the existing sanitary sewer collection system in accordance with UFC 3-200-10N, *Civil Engineering*; the utility provider's requirements; the state sewerage regulations, and the Recommended Standards for Wastewater Facilities (known as the Ten State Standard); whichever is more stringent.

Notify the utility provider of the additional wastewater flow generated by the proposed facility. Provide a copy of all correspondence with the utility provider to the Government Civil Reviewer.

Provide connection to the existing sanitary sewer collection system at the point indicated on the drawings in another part of this RFP. In identifying a suitable point of connection, provide consideration of the capacity of the existing collection system

G302001 SANITARY SEWER PIPING

Construct the sanitary sewer piping using PVC piping with gasketed joints.

G302002 SANITARY SEWER MANHOLES & CLEANOUTS

Provide precast concrete manholes only.

G302003 LIFT STATIONS AND PUMPING STATIONS

A wastewater pump station will not be required.

G302004 PACKAGED SANITARY SEWER TREATMENT PLANTS

Not used.

G302005 SEPTIC TANKS

Not used.

G302006 DRAIN FIELDS

Not used.

G302090 OTHER SANITARY SEWER

Not used.

G3030 STORM SEWER

The new storm sewer ditch system is a relocation of a section of the existing storm sewer ditch system. The existing storm sewer system serving the project site is owned, operated, and maintained by the installation. Provide the new storm sewer system and connections to the existing storm sewer system in accordance with UFC 3-200-10N, *Civil Engineering*; the utility provider's requirements; and the state stormwater management laws and regulations; whichever is more stringent.

Provide relocation to the existing storm sewer ditch system at the point indicated on the drawings in another part of this RFP. Confirm that the existing outfall has adequate capacity to receive the additional stormwater flow generated by the project.

G303001 STORM SEWER PIPING

Not used.

G303002 STORM SEWER STRUCTURES

Not used.

G303003 LIFT STATIONS

Not used.

G303004 CULVERTS

Not used.

G303005 HEADWALLS

Not used.

G303006 EROSION & SEDIMENT CONTROL MEASURES

Construct measures including but not limited to filter barriers, silt fence, tree protection, inlet protection, culvert protection, construction entrance, dust suppressors, temporary seeding, and erosion control matting to reduce on-site erosion and off-site runoff and sedimentation. All erosion control measures shall conform to the requirements of the authority having jurisdiction.

G303007 STORMWATER MANAGEMENT

A stormwater management facility will not be required for this project.

G303090 OTHER STORM SEWER

Not used.

G3040 HEATING DISTRIBUTION

Not used.

G304001 OVERHEAD HOT WATER SYSTEMS

Not used.

G304002 OVERHEAD STEAM SYSTEMS

Not used.

G304003 UNDERGROUND HOT WATER SYSTEMS

Not used.

G304004 UNDERGROUND STEAM SYSTEMS

Not used.

G304005 CONCRETE MANHOLES & VALVE BOXES

Not used.

G304090 OTHER HEATING DISTRIBUTION

Not used.

G3050 COOLING DISTRIBUTION

G305001 OVERHEAD COOLING SYSTEMS

Not used.

G305002 UNDERGROUND COOLING SYSTEMS

Not used.

G305090 OTHER COOLING DISTRIBUTION

Not used.

G3060 FUEL DISTRIBUTION

G306001 LIQUID FUEL DISTRIBUTION PIPING

Not used.

G306003 LIQUID FUEL STORAGE TANKS

Not used.

G306004 LIQUID FUEL DISPENSING EQUIPMENT

Not used.

G306006 NATURAL GAS DISTRIBUTION PIPING

The new natural gas system is an extension of the existing natural gas system. The existing natural gas system serving the project site is owned, operated, and maintained by the installation. Provide the new natural gas system and connections to the existing natural gas collection system in accordance with UFC 3-200-10N, *Civil Engineering*; the utility provider's requirements; and state regulations; whichever is more stringent.

Notify the utility provider of the additional demand generated by the proposed facility. Provide a copy of all correspondence with the utility provider to the Government Civil Reviewer.

Provide connection to the existing natural gas system at the point indicated on the drawings in another part of this RFP.

G306007 GAS STORAGE TANKS

Not used.

G306009 OTHER GAS DISTRIBUTION

Not used.

G306090 OTHER FUEL DISTRIBUTION

Not used.

G3090 OTHER SITE MECHANICAL UTILITIES

G309001 NITROGEN & HIGH PRESSURE AIR (HPA) PIPING

Not used.

-- End of Section --

6. ENGINEERING SYSTEMS REQUIREMENTS

G40 SITE ELECTRICAL UTILITIES

SYSTEM DESCRIPTION

The site electrical utility system consists of all power and telecommunications and fiber optic cabling from the existing distribution system point of connection including all connections, accessories and devices as necessary and required for a complete and usable system. This section covers installations up to within 5 feet (1.5 meters) of new Blast & Paint Facility.

GENERAL SYSTEM REQUIREMENTS

Limited site investigation has determined the existing Electrical System in substation 104 in B3202 and substation 164, northwest of the project site, appears to be in good condition and should handle the loads needed for the addition of the Blast & Paint Facility. Communications shall be provided to this facility by others. Test and approve, as specified throughout this RFP, as needed for a complete, usable and proper installation. All equipment shall be installed per the criteria of RFP Section G40 and the manufacturer's recommendations. Where the word "should" is used in the manufacturer's recommendations, substitute the word "shall".

G4010 ELECTRICAL DISTRIBUTION

Service shall be derived from substation 104 in building B3202 or substation 164, located northwest of the site (see Part 6 for the 13.8kV Site Electrical Distribution Plan). The service shall be extended to the Blast & Paint project site underground in a concrete encased ductbank, and terminated at the Blast & Paint disconnecting means. The point of connection and final terminations are to be coordinated with the Blast & Paint manufacturer/contractor.

The available fault current at the point of connection shall be assumed to be an infinite bus.

G401006 UNDERGROUND ELECTRIC CONDUCTORS

Provide a 600 volt secondary underground electrical power distribution systems to meet the connection requirements as indicated in paragraph G4010 "Electrical Distribution". Provide foil backed underground marking taped to allow for easy location of the ductbank in the future.

G401008 GROUNDING SYSTEMS

Provide a complete grounding system for the electrical power distribution system.

G401009 METERING

Provide a separate Kilowatt Demand Meter for this building. Stennis currently uses Siemens Series 2000 Digital Energy Monitors. Provide this model or a model that is UL listed as compatible.

G4020 SITE LIGHTING

Provide site lighting for the Blast & Paint Facility per the SSC Facility Electrical Standard for a complete and usable system.

-- End of Section --