STATEMENT OF WORK

DIRECTORATE OF PUBLIC WORKS

CAMP SANTIAGO JOINT TRAINING CENTER

Building 197 Swimming Pool Rehabilitation and Perimeter Fence

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Part 1

GENERAL INFORMATION

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STATEMENT OF WORK

FOR

Swimming Pool Rehabilitation and Perimeter Fence for Camp Santiago Salinas Puerto Rico

1. PROJECT INFORMATION

1.1. SYNOPSIS: This project is for the Camp Santiago Joint Training Center (CSJTC). The project consists of the complete rehabilitation of the CSJTC Swimming Pool (approximately 100' x 50', with depths ranging from 4 to 12 feet). The scope of work includes the refurbishment of the pool interior and surrounding deck, as well as the installation of all major mechanical components for the filtration system, including pumps. Also, the project encompasses the renovation of the adjacent latrines and shower areas. Finally, the project requires the removal and proper disposal of the existing perimeter fence, followed by the construction of a new 8-foot-high chain-link fence (estimated at 520 linear feet). This new fencing, which will include the installation of three (3) designated gates, will tie into the existing fence line to ensure complete perimeter closure and security.

1.2. JUSTIFICATION: The Puerto Rico National Guard Aviation Units requires a swimming pool in order to complete their training. The Program's mission is to intervene in the life of at-risk youth who are high school dropouts and produce graduates with the values necessary to succeed as adults. Therefore, a fence is necessary because it will protect and safeguard the swimming pool area. The fence mitigates the risks of unauthorized access to the area. Furthermore, the area is affected by horses and stray dogs that often roam the area at different hours of the day. This roaming wildlife often causes damage to utilities and equipment, often resulting in multiple repairs being needed to restore them.

1.3. LOCATION: The job site is located in Salinas, Puerto Rico, at coordinates latitude 18.0010 and longitude -66.1735. An orthophoto not to scale is provided below with the location of the job site in Fort Allen and marked with a red circle.



Figure 1 Camp Santiago ORTHOMAP NTS (UNCLASSIFIED///FOR OFFICIAL USE ONLY)

1.4. DELIVERY DATE: The period of performance shall not exceed a total of 150 calendar days upon issue of Notice to Proceed of which:

30 calendar days are used for submittal approval, documents, installation access procedures, and other administrative requirements.

90 calendar days are for execution of this scope.

30 calendar days for final inspections, required training, and closing requirements

1.5. PROPOSAL: The contractor must provide a base bid for the project described in Section 1.1 and in accordance with requirements set forth by the contracting organization.

1.6 EXISTING CONDITIONS: The soil composition of Camp Santiago Joint Training Center is well-graded, granular soil. Trimming vegetation, green areas may be required depending on the scope of the project and may be included in the proposal or as an option/alternative to the base bid.



Figure 2 Existing Conditions (UNCLASSIFIED//FOR OFFICIAL USE ONLY)



Figure *3* Existing Conditions (UNCLASSIFIED//FOR OFFICIAL USE ONLY)



Figure *4* Existing Conditions (UNCLASSIFIED//FOR OFFICIAL USE ONLY)



Figure *5* Existing Conditions (UNCLASSIFIED//FOR OFFICIAL USE ONLY)



Figure *6* Existing Conditions (UNCLASSIFIED//FOR OFFICIAL USE ONLY)



Figure 7 Existing Conditions (UNCLASSIFIED//FOR OFFICIAL USE ONLY)



Figure 8 Existing Conditions (UNCLASSIFIED//FOR OFFICIAL USE ONLY)



Figure *9* Existing Conditions (UNCLASSIFIED//FOR OFFICIAL USE ONLY)



Figure *10* Existing Conditions (UNCLASSIFIED//FOR OFFICIAL USE ONLY)



Figure *11* Existing Conditions (UNCLASSIFIED//FOR OFFICIAL USE ONLY)



Figure *12* Existing Conditions (UNCLASSIFIED//FOR OFFICIAL USE ONLY)



Figure *13* Existing Conditions (UNCLASSIFIED//FOR OFFICIAL USE ONLY)



Figure *14* Existing Conditions (UNCLASSIFIED//FOR OFFICIAL USE ONLY)



Figure *15* Existing Conditions (UNCLASSIFIED//FOR OFFICIAL USE ONLY)



Figure *16* Existing Conditions (UNCLASSIFIED//FOR OFFICIAL USE ONLY)



Figure 17 Existing Conditions (UNCLASSIFIED//FOR OFFICIAL USE ONLY)



Figure 18 Existing Conditions (UNCLASSIFIED//FOR OFFICIAL USE ONLY)



Figure 19 Existing Conditions (UNCLASSIFIED//FOR OFFICIAL USE ONLY)

1.1. Soil Conditions**:** The soil composition of Camp Santiago Joint Training Center site is mostly well-graded granular soil.

2. PROJECT DESCRIPTION

Fence

2.1. The contractor shall clean and remove all vegetation prior construction. The contractor shall verify measurements and location.

2.1.1. The contractor shall furnish equipment, materials, and non-personal services to execute the construction of approximately 8ft x 520 LF of Chain Link Fence Mesh Size 2in, 9 ga., **with top and bottom rails**, connecting to existing fencing barrier to complete the closure of the Camp Santiago Joint Training Center Swimming Pool. Install 3 gates.

2.1.2. Construction of approx. 1, double swing chain link vehicular gate, mesh size 2in, 9ga., covering for roads, and area entrances, of different dimensions. Construction includes hinge post and latch post with padlockable slide-bolts to allow securing of the gates in either locked or open position.

2.1.3. Grounding system for perimeter fence consisting of a copper rod.

2.1.4. Installation of 2ea gate posts for single leaf 4ft wide pedestrian gate.

2.1.5. Installation of approx. 220-line posts in a 3ft-4in deep x 16in DIA concrete base for line post every 10ft.

2.1.6. Remove waste fencing material and other debris from work site.

2.2. 3000 PSI Concrete**:** The contractor shall use a Qualified engineer with knowledge of the local soil conditions must design the concrete. Concrete mixture must obtain a minimum 28-day compressive strength of 3000 PSI.

Swimming Pool

2.3. The contractor shall furnish equipment, materials, and non-personal services to execute the rehabilitation of Camp Santiagos's swimming pool (approx. 100 feet long, 50 feet wide, from 4 feet deep to 12 feet deep, with water line depth of 10 feet at the deepest. The swimming pool has approximate capacity of 299,200 gallons.

2.4. The contractor shall ring the entire interior of the pool, remove and correct all hollow and cracked areas.

2.5. The contractor shall demolish all sidewalk around the swimming pool, to a 14 feet width.

2.6. Installation of 3/8 steel with 12" separation for the sidewalk around the swimming pool area.

2.7. Putting 4" of thickness cement around edges of entire sidewalk. The new sidewalk shall be leveled with the pool's edge to create a secure, safe, and uniform transition, eliminating any tripping hazards.

2.8. The sidewalk will have Cool Deck (4 feet) non-slippery material, in light gray tone, which keeps a cool temperature.

2.9. The contractor shall correct boarder line cracks, connect with the sidewalk and marble the pool with American marble, with blue quartz.

2.10. The sidewalks are approximately 1,944 square feet.

2.11. The contractor shall perform pressure test for all pipes. Must ensure a secure, leak-proof and compliant final assembly.

2.12. In compliance with current safety codes, the contractor shall furnish and install four (4) new drains, each 12 inches in diameter. Installation shall include all necessary technical work: excavation at the deepest point of the pool to the required depth and dimensions to house the new drains, setting and securing the drains in a new concrete encasement, and connecting them to the new 6-inch, sch. 40 filtration pipes (not exposed). The installation must ensure a secure, leak-proof, and compliant final assembly.

2.13. Hydrostatic Pressure Relief: The contractor must locate and open the hydrostatic relief valve at the bottom of the pool during the draining process.

2.14. Pressure Testing: Before pouring the new concrete encasement over the newly installed drains and plumbing, it is mandatory to perform a hydrostatic pressure test on the filtration lines. This ensures the final assembly is completely leak-proof before it is permanently sealed in concrete.

2.15. Installation of 10 skimmers with 2-inch pipes. Sch 40 individual from the skimmers to the equipment area.

2.16. Installation of 38 return jets, distributed around the entire pool, bringing already filtered water to the pool.

2.17. Installation of Pentair lubricated taps for each of the pipes in the equipment area (Approx. 50 valves).

2.18. The contractor shall prepare a platform inside the pool (deep part) to be able to work on removing clay from the water lines.

2.19. Installation of tiles for the water line with a width of 1 foot from the upper perimeter of the pool.

2.20. The contractor shall replace and install (4) four shower heads and mixing valves.

2.21. The contractor shall replace and install (4) four new toilets for men and women latrines with all the system components such as the donuts, hoses, valves, etc.

2.22. The contractor shall replace and install (4) four new toilets for men and women latrines with all the system components such as the donuts, hoses, valves, etc.

2.23. The contractor shall replace and install new plumbing fixtures in male and female bathrooms, including toilets, sinks and faucets.

2.24. The contractor shall install new tiles approximately 250 sqft on shower area including wall and floor. Install new shower heads, water mixer, and all plumbing and drain components. Wall Tiles: CNK Tile Grey Natural Stone/ Floor Tiles: Gowanus Triangle Lava Stone 11x14 anti-slip.

2.25. Bathroom Ceilings Paint Specification: The contractor shall prepare the surfaces and apply anti-condensation and anti-mold white paint to all bathroom ceilings to prevent moisture damage and ensure compliance with sanitary standards.

2.26. The contractor shall install 8 Pentair Intelli Flow 3 Smart Inverter Pumps with energy saver.

2.27. The contractor shall install 8 Filters Fullflow Commercial Pentair.

2.28. The contractor shall install voltage protector for each and every pump with ground bar.

2.29. The contractor shall professionally program each and every pump.

2.30. The contractor shall design and construct pools and spray pads of impervious and structurally sound materials, which provide a smooth, yet slip-resistant, easy cleanable, structure.

2.31. Provide corrosion-resistant metal pools constructed of type 304 or 316 stainless steel.

2.32. Provide only fully or semi-recessed overflow systems sized to provide the required surge volume. Where skimmers are used, provide an equalization fitting in accordance with TB MED 575.

2.33. The contractor shall clean, collect and dispose of all materials, debris, equipment from work area. Contractor is in charge of disposing all material outside of Camp Santiago.

2.34. The contractor shall comply with the Buy American Build American Act. All materials use in this project must come or made in USA. Rebar, Steel covers, Water meter, Etc.

2.34.1. The project end-product shall be free of defects and in accordance with acceptable parameters, specifications, and standards.

2.34.2. Recurrent findings of crass or negligent defects may incur in corrective actions set forth by governing contracting agency.

2.34.3. The contractor shall replace or re-do defective work at no additional cost to the Government when it is found that the defect resulted from negligence or evident disregard to technical guidance.

2.34.4. The contractor shall perform pressure test for all pipes.

2.35. LIST OF ATTACHMENTS/EXHIBITS: The contractor shall consider the following attachments/exhibits:

1. TABLE 3-2 TABLE OF ATTACHMENTS/EXHIBITS

Item	Name / Descriptions	Distribution	Provided By
1	Installation Access Guidance	Digital	COR
2	DD369 Police Record Check Template and Instructions	Digital	COR
3	Dig Permit	Digital	COR
4	Typical Drawings	Digital	DPW

2.36. REVIEW OF SUBMITTALS:

2.36.1. The Government's review will be limited to determination of the submittals' conformance with design concept and general requirements of the project. Approval by the Government shall not absolve the Contractor from his responsibilities for specific performance of the item or items

submitted. Time allowed for original and any subsequent reviews shall be ten (10) working days after receipt by the Contracting Officer, except for substitutions.

2.36.2. Submittals consist of the following:

Shop Drawings
Catalogue Cuts and Manufacturer's Literature
Samples
Manufacturer's Installation Instructions

2.36.2.1. The KO shall specific the quantities and method of submission (digital or hard copy) of the submittals during the preconstruction meeting.

2.36.3. Submission: The contractor shall directly submit the submittals. Submittals shall not be accepted from subcontractors or suppliers. The contractor shall check submittals for completeness, accuracy for construction purposes, and conformance with contract requirements. The COR/TCOR shall verify submittals for completeness, accuracy for construction purposes, and conformance with contract requirements and recommend for approval. The KO is the only one authorized for final submittal approval and acceptance.

2.36.4. Shop Drawings: Shop drawings shall be prepared by persons competent and experienced in trade involved. Drafting skill is not a requirement but accuracy and completeness are. Drawings shall reflect field measurements and conditions and shall show the relationship of the item to adjacent materials.

2.36.5. Approval of Substitutions: With any request for approval of substitutions, the contractor shall submit to the Government the complete data including performance and chemical makeup for both specified and proposed item. Approvals of substitutions will require 20 working days for review after submittal to the Contracting Officer.

2.36.6. Trade Names: Trade names of specific products in this specification are used only for purposes of defining general quality and performances. They are not used to preclude the use of products or equal characteristics by other manufacturers. The Government reserves the right to determine equality. Physical dimensions, color, and texture will also be considered in determining equality. All items will be submitted one time for approval.

2.37. MILESTONES: The project requires three key milestone submissions in addition to other project milestone requirements specified in Table 3-1.

2.37.1. Submittal schedule - the contractor shall provide a list of products that fall into this "intended use of exact product specified" category along with the manufacturer's installation/application instruction for each product on the list. The contractor shall provide the list and manufacturer's installation/application instructions to the KO at the preconstruction conference for review and approval.

2.37.2. Project Schedule – the contractor shall provide a way to track the project advancement or schedule, and should be review and approve by the Contracting Officer.

2.37.3. Breakdown for Payment/Schedule of Values - the contractor shall provide ahead of performing the tasks and an invoice, a breakdown for payment that should match the project schedule, and should be review and approve by the Contracting Officer.

PART 3 ENVIRONMENTAL

3.0 Asbestos (Certification or Report)

N/A

3.1 Lead (Certification or Report)

See LBP Inspection Report

3.2 Permits / Endorsement

N/A

3.3 SHPO Requirements

N/A

3.4 Environmental Policy

The selected company must comply at all times with the GNPR's Environmental Preservation Policy during the development of the services. See document (Environmental Policy Statement). See Attachment B.

TABLE 3-1 PROJECT MILESTONES

Milestone	Occurrence	Coordinated By
Site Visit	Specified in Site Invitation Memo	Contracting Agency
Submittal Schedule	Initial, continuous review	Contractor
Project Schedule Review	Initial Plan, continuous review	Contractor
Breakdown for Payment	Initial	Contractor
Preconstruction Meeting	Prior to Start of Labor	COR
Quality Assurance Inspections	35%, 65%, 75% Progress Pre-Foundation construction, and after steel rods installation	COR and Contractor QC
Quality Control Inspections	Daily	Contractor Project Manager
Pre-Closeout Meeting	At 70% of period of performance	Contractor Project Manager
Punch List Inspection	100% Progress	Contractor Project Manager COR/TCOR
Completion of Project		KO/COR/TCOR Contractor
Project Acceptance Meeting	Upon Successful Punch List Inspection Evaluation	KO/COR/TCOR
Site Clearing	Upon Notification of Acceptance of Project	Contractor COR/TCOR
Site or Facility Turn-In	Upon cleaning and clearing of job site to acceptable standards set forth by Government Representative and Owner	Contractor Project Manager KO/COR/TCOR
Billing and Payment	In accordance with Payment Schedule	Contractor Project Manager

		KO/COR/TCOR Finance Officer

3.5 **ACCEPTANCE CRITERIA:** The contractor shall perform work in accordance with applicable local and national building codes, and the Unified Facility Criteria Program. The Unified Facilities Criteria (UFC) system (prescribed by MIL-STD 3007) provides planning, design, construction, sustainment, restoration, and modernization criteria; applicable to the Military Departments, the Defense Agencies, and the DoD Field Activities; in accordance with DoD Directive 4270.5, Military Construction. UFC documents are applicable to all DoD-led construction projects and are of two general types:

3.6 Planning and design requirements, which are divided into technical UFC documents (generally aligned by engineering or professional discipline) and functional UFC documents (aligned by facility type).

3.7 Guide specifications, which provide material requirements for the selection of components or systems. Guide specifications shall follow the Unified Facility Guide Specifications. Unified Facilities Guide Specifications (UFGS) are a joint effort of the U.S. Army Corps of Engineers (USACE), the Naval Facilities Engineering Command (NAVFAC), the Air Force Civil Engineer Center (HQ AFCEC) and the National Aeronautics and Space Administration (NASA). UFGS are for use in specifying construction for the military services

3.8 The list below provides examples of applicable laws, regulations, criteria, building codes and regulatory agencies. The list is not all inclusive and shall be updated accordingly to the scope of the project:

AR 190-11 Physical Security of Arms, Ammunitions, and Explosives 01/07/2019
Regulation num. 7796 for the Certification of Renewable Energy Systems

UFC 4-750-07, Aquatic Facilities 04/20/2020

UFC 1-200-01, DoD Building Code, 10/01/2019

UFC 1-200-02

UFC 4-010-01, DoD Minimum Antiterrorism Standards for Buildings, 08/19/2020

UFC 4-020-01, DoD Security Engineering Facilities Planning Manual, 09/11/08

UFC 1-200-02 High Performance and Sustainable Building Requirement, 10/01/2019

UFC 3-400-01 Energy Conservation,

UFC 3-420-01 Plumbing Systems, 11/01/2019

UFC 3-530-01 Interior and Exterior Lightning Systems and Controls, 11/01/2019

ACI, American Concrete Institute

AISC M018 & M019, American Institute of Steel Construction Steel Construction Manual,

Manual of Steel Construction Load & Resistance Factor Design - Volume I Structural

Members, Specifications, & Codes; Volume II Connections, 2017

ASSE 1264.1, American Society of Safety Engineers, Safety requirements for workplace floor and wall openings, stairs and railing systems, 03/23/2017

ASCE 7-98, American Society of Civil Engineers, Minimum design loads for buildings and other structures, 03/26/2013

ASTM, American society for Testing and Materials, 09/2015

AWS, American Welding Society, 2020

EPA, Environmental Protection Agency

FAR, Federal Acquisition Regulation

IESNA, Illuminating Engineering Society of North America, Lighting Handbook Reference & Application, 2011

NEC, National Electric Code

NESC, National Electric Safety Code

NFPA 70, National Electric Code

Occupation Safety and Health Administration (OSHA) Safety and Health Standards (29 CFR 1910).

International Building Code (IBC)

American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE)

3.9 The contractor shall follow performance requirements set forth in Table 4-1, Table of Performance Requirements, in addition to the guidance set forth by the KO, COR and TCOR.

TABLE 4-1 TABLE OF PERFORMANCE REQUIREMENTS

Performance Objective	Performance Standard	Acceptable Quality Levels (AQL)	Surveillance Method / By Whom
Project Oversight	Contractor has a project supervisor on site at all times	Meets Standards	COR/Government
Payment/Invoices	Contractor submits complete and accurate invoices Invoice are submitted within 10 days of completion of work Submitted digitally and 2 Original Copies	Invoice Evidence of Insurance Copies of applicable taxes and patents Progress pictures	COR/Government
Management	The contractor uses project schedule for planning and progress	Gantt Chart Provides schedule in PDF format Discusses schedule with COR Schedule is complete and detailed	COR/Government
Quality Control	Contractor has an appointed QC Manager Contractor follows industry standards Contractor has a QC Plan	Contractor conducts QC Inspections QC Inspections are documented	COR/Government Contractor
Safety	Contractor is OSHA1926 Trained Contractor has a Job Site Safety Plan and Medical Evacuation Plan	Complies with OSHA/PROSHA and installation Safety Program Requirements	Contractor

	Cranes and lifts have load tests and certifications Safety PPE is used at all times Contractor has a Job Site Safety Plan approved by Government	Job is executed with PPE Job Site boundaries are marked	
Environmental	Contractor complies with PRNG Environmental Guidance Attends vehicle breakdowns and spills immediately Has a Spill Prevention Plan Has a Spill Kit on site Protects environment from chemical agents	Complies with organizational and installation regulations and policies	COR Environmental Officer
Mobilization Demobilization	Contractor coordinates location for materials and route of entry Contractor interference with regular operations is within acceptable parameters Movement to and out of the job site is free of accidents	Minimized interference with installation operations	Contractor

4 GENERAL CONDITIONS

4.0 **GENERAL PROVISIONS:** The contractor shall follow Public Law General Provisions provided by the contracting organization, state or territory in which the contractor performs the project. Refer to General Provisions Guidelines.

4.1 **RESPONSIBILITY:** The contractor shall furnish sufficient labor, technical, supervisory, and administrative personnel to ensure the expeditious accomplishment of the work specified within this Statement of Work (SOW).

- The contractor shall furnish all materials, installation, supplies, and equipment required in connection with this SOW, provided technical documents, and material specifications.

- All systems, equipment, repairs, constructions, installations must comply with all construction and applicable State and Federal codes. The system must also comply with the Federal Energy Conservation Regulation.

4.2 **DIRECTION:** The contractor shall accept direction from the Contracting Officer (KO) and the appointed Contracting Officer Representative (COR) and/or Technical Contracting Officer Representative (TCOR).

- The COR/TCOR is not authorized to request, accept, or instruct changes to project scope or any other provisions of the SOW and/or contract. Requests, desires, or recommendations made by the user or using agency shall be requested in writing through the COR/TCOR through the established Change Scope Plan or Change Order Request Process.

- Changes not approved may result in an Unauthorized Commitment and may or may not be paid upon examination and approval or disapproval by the KO. The KO is the only contractual authority that can legally bind the Government in the form of a contract, change order, or other contractual defining actions.

4.3 **PAYMENT:** The contractor shall follow the payment procedures set forth by the contracting agency. The recommendations are to request at minimum the following:

3.6.1. Breakdown of Payments
3.6.2. Invoice Certification
3.6.3. Evidence of Quality Control Inspections (pictures or reports)
3.6.4. Other requirements set forth by the governing contracting agency

5 SPECIFICATIONS: The contractor shall follow all material specifications specified in the SOW, the specification guidance manual, and applicable Unified Facility Criteria (UFC), and Unified Guide Specifications (UFGS).

Ref: Unified Facilities Criteria (UFC) 4-022-3 03 Security Fences and Gates | WBDG - Whole Building Design Guide

STD 872-90XX Standard details for Chain-Link Security Fences and Farm Style F and Double Cable Barrier

Unified Facilities Criteria (UFC) 4-750-07 Aquatic Facilities | WBDG - Whole Building Design Guide

5.1 Chain Link Fence Fabric: Contractor shall use a fabric consisting of No. 9-gauge wires woven into a 2-inch diamond mesh with dimensions of fabric and wire conforming to ASTM A116, with 2.0 ounces per square foot zinc galvanizing. Fabric shall be one-piece fabric widths for fence heights of 6ft.

5.2 Top and Bottom Selvages: Provide knuckled selvages at top and bottom for fabric with 2-inch mesh and up to 60 inches high, and if over 60 inches high, provide twisted and barbed top selvage and knuckled bottom selvage.

5.3 Posts, Rails and Braces: Line posts shall be of Grade-A galvanized steel pipe, DN50 2.5-inches O.D. pipe weighing 3.65 pounds per linear foot. End corner and pull posts shall be DN70, 2.875 inches O.D and weighing 5.79 pounds per linear foot. Posts shall be spaced equidistantly apart, not exceeding 10 feet on center. Provide gate posts as necessary for size of gate openings. Do not exceed 500 feet on straight runs between braced posts. Provide corner or pull posts, with bracing in both directions for changes in direction 15 degrees or more or for abrupt changes in grade. **Submit drawings showing location of gates, corner, end, and pull posts.**

Sleeves shall be provided for setting into concrete construction of the same material as post sections, sized 1inch greater than the diameter or dimension of the post.

Top rails shall be a minimum of DN40 1.660 inches O.D. pipe rails, Grade-A, weighing 2.27 pounds per linear foot, with expansion couplings 6 inches long at each joint in top rails.

Bottom rails shall be provided conforming to minimum sizes specified in FS RR-F-191/R for each class and grade unless members are to be oversized.

Post-brace assembly shall consist of DN40 1.660 inches O.D pipe Grade-A weighing 2.27 pounds per linear foot and 3/8inch adjustable truss rods and turnbuckles.

Stretcher bar are to be one-piece length equal to the full height of the fabric with a minimum cross section of 3/16inch by 3/4inch in accordance with ASTM F626. Stretcher bar bands for securing stretcher bars to posts are to be spaced not over 15 inches on center. Bands may be used in conjunction with special fittings for securing rails to posts. Provide bands for projecting edges chamfered or eased.

Post tops are to be steel, wright iron, or malleable iron designed as weathertight closure cap. One cap per each post, provide caps with an opening to permit through passage of the top rail.

5.4 Gates: Post tops are to be steel, wright iron, or malleable iron designed as weathertight closure cap. One cap per each post, provide caps with an opening to permit through passage of the top rail.

Gate leaves up to 8 feet high, provide a perimeter gate frame of DN32 1.66inch O.D. pipe Grade-A weighing 2.27 pounds per linear foot. Provide gate frame assembly that is welded or assembled with special malleable or pressed-steel fittings and rivets to provide rigid connections. Install fabric stretcher bars at vertical edges; stretcher bars may also be used at top and bottom edges. Attach stretcher bars and fabric to gate frames on all sides at intervals not exceeding 15 inches. Attach hardware with rivets or by other means which provide equal security against breakage or removal. Provide diagonal cross-bracing, consisting of 3/8-inch diameter adjustable-length truss rods on welded gate frames, where necessary to obtain frame rigidity without sag or twist. Provide non-welded gate frames with diagonal bracing.

Provide gate hardware and accessories that conform to ASTM A116 and ASTM F626 with latch that permits operation from either side of the gate, with a padlock eye

provided as an integral part of the latch. Provide malleable iron, forged or pressed steel hinges to suit gate size, non-lift-off type, offset to permit 180-degree opening. Gate stops and holders of a malleable iron for vehicular gates and stops that automatically engage the gate and hold it in the open position until manually released.

5.5 Wire ties: Wire ties shall be of the same material as the fencing fabric with minimum 2 wire ties.

5.6 Zinc-Coating: Provide hot-dip galvanized after fabrication ferrous-metal components and accessories unless otherwise specified. Zinc-coating shall weight no less than 1.94 ounces per square foot as determined from the average results of two specimens when tested with ASTM A90/A90M. Provide zinc coating for the following:

5.6.1 Pipes, Hardware, and Accessories: Pipes: FS RR-F-191/4 Class 1 Grade A in conformance with ASTF1083. Hardware and accessories: ASTM A153/A153M, Table 1. Surface: ASTM F1043

External: Type B-B surface zinc with organic coating 0.97 ounce per square foot minimum thickness of acrylated polymer.

5.6.2 Concrete Cast for Posts and Gates: Provide concrete conforming to ASTM C94/C94M and obtaining a minimum 28-day compressive strength of 3,000 PSI.

Grout portions one part-Portland cement to three parts clean, well-graded sand, and a minimum amount of water to produce a workable mix. Concrete casts for posts shall be no less than 3ft-4in deep and 16 inches diameter or as specified in provided details. For Gate Posts foundations, the contractor shall use the following criteria:

Table 2-3 Gate Post Foundations (UFC 4-022-03, Table 3-1)

Steel Post Diameter	Foundation Hole Diameter	Gate Leaf Length
2.875 in (73 mm)	18 in (450 mm)	0 - 6 ft (0 - 1.8 m)
4.000 in (101.6 mm)	24 in (609.6 mm)	6 - 12 ft (1.8 - 3.7 m)
6.625 in (168.3 mm)	36 in (914.4 mm)	12 - 18 ft (3.7 - 5.5 m)
8.625 in (219 mm)	40 in (1016 mm)	18 - 24 ft (5.5 - 7.3 m)

5.7 Clearing and Grading: Clear fence line of tees, brushes, and other obstacles to install fencing for 3 feet inside the fence and 3 feet outside the fence, with established graded, compacted, fence line prior to fencing installation.

5.8 Grounding: Grounding and bonding of the perimeter systems must be in

accordance with the National Electric Safety Code (NESC) - IEEE C2. Fences that are required to be grounded by NESC must be designed to limit touch, step, and transferred voltages in accordance with industry practices.

Ground all fences crossed by overhead power lines in excess of 600 volts, and all electrical equipment attached to the fence. Ground fences on each side of all gates, at each corner, at the closest approach to each building located within 50 feet of the fence, and where the fence alignment changes more than 15 degrees. Grounding locations cannot exceed 400 feet. Bond each gate panel with a flexible bond strap to its gate post. Ground fences crossed by power lines of 600 volts or more at or near the point of crossing and at distances not exceeding 150 feet on each side of crossing. Provide ground conductor consisting of No. 6 AWG solid copper wire. Provide copper-clad steel rod grounding electrodes 19 mm 3/4 inch by 3.05 m 10 foot long. Drive electrodes into the earth so that the top of the electrode is at least 152 mm 6 inches below the grade. Where driving is impracticable, bury electrodes a minimum of 12 inches deep and radially from the fence, with top of the electrode not less than 2 feet or more than 8 feet from the fence. Clamp ground conductor to the fence and electrodes with bronze grounding clamps to create electrical continuity between fence posts, fence fabric, and ground rods. Total resistance of the fence to ground cannot exceed 25 ohms.

6 **MATERIALS:** As specified in general provisions, all materials are subject to restrictions of procurement set forth by guidelines and procedures set forth in 41 USC Ch. 83: BUY AMERICA BUILD AMERICAN ACT also known as “Buy American Act (BAC)”, the Trade Agreement Act (TAA), the American Iron and Steel Requirements (AIS), as preferences for procurement of domestically available products.

6.0 The contractor will provide submittals for all materials used for this SoW, to include technical data sheets, safety data sheets, specifications, drawings, and user guides and manuals.

7 **WARRANTY:** The contractor shall provide factory and offered warranties. The contractor shall provide new, free of defects, materials, locally or internationally procured, this SOW and per governing contracting agency additional guidelines. The installation requires 3 years of warranty for parts and equipment, and 1 year of warranty for labor.

8 INSTALLATION RULES AND GUIDELINES:

8.0 **INSTALLATION ACCESS REQUIREMENTS:** In accordance with Homeland Security Presidential Directive 12 and Army Regulation 190-13, **all visitors and uncleared contractors desiring unescorted access to Camp Santiago Joint Training Center**, will be vetted through the National Crime Information Center Interstate Identification Index (NCIC III).

- Each contractor or subcontractor requiring unescorted access during the period of performance of the contract shall fill a DD369 Police Record Check (see attached form) and legible copy of state issued ID to be used to gain access.

- You need to provide as specified by contract or installation requirements the list of the names (full name, ID Number, ID State of Issue, ID Type) as depicted below in addition to a DD369 filled for each individual:

CONTRACTOR REQUIRED ACCES LIST

Contractor (Company Name or Entity)	**Last**	**Name**	**MI**	**ID Number (Driver's License, State Issued ID, or Passport)**
Sample Company	SMITH	JOHN	G	123-2223444

8.1 **DEMOLITION, REMOVALS, AND EXCESS MATERIALS:**

- All materials, equipment, and refuse generated through the demolition work required by this contract shall become the property of the contractor and shall be disposed of by the contractor off base at the contractor's expense unless specifically listed otherwise in the demolition section of the specifications.

- Hazardous material removal and disposal shall be accomplished in accordance with all applicable codes and regulations and shall be the sole responsibility of the contractor. The contractor will be responsible to submit copy of all applicable Hazardous Waste disposal manifests and/or proofs of compliance of safe disposal.

8.2 **UTILITY OUTAGES:** Outages for utility tie-ins/shut downs require prior approval of the Contracting Officer. All requests for outages shall be submitted in writing to the Contracting Officer at least 5 calendar days in advance of the proposed date unless specifically indicated otherwise elsewhere in the contract documents.

8.3 **CONTRACTOR'S STORAGE AREA:** At the time of contract award, the Government may assign an outside area to the contractor for the storage of his supplies and equipment. Missing or damaged material shall be replaced by the contractor, at no additional cost to the Government at the completion of the contract. The location of the contractor storage area will be determined by the COR/TCOR in direct coordination with the site.

8.4 **PROJECT SIGN:** If requested or required by the installation, the contractor shall provide an identification sign posted at the area, stating contract title, contract number,

contractor's name and emergency phone number. The contractor shall be responsible for his own security and weatherproofing.

8.5 **CONTRACTOR WORK TRAILER (ON SITE OFFICE**): The contractor may provide an onsite office trailer as necessary for the accomplishment of the work. The trailer shall conform to the following criteria: Trailer shall be well maintained, and not appear in a condition requiring extensive repair. In no case shall a trailer be permitted on the work site unless approved by the Contracting Officer and the end user. The Contracting Officer must approve location of the contractor work trailer.

8.6 **WORKING HOURS**: In addition to General Provisions, the contracting agency shall consider that regular working hours at Camp Santiago are 7:30 a.m. to 4:00 p.m., Monday through Friday, excluding Federal Legal Holidays and/or days not worked by the Government in observance of such Federal Legal Holidays.

- Working outside the regular Camp Santiago's working hours may be permitted but should be requested 5 calendar days in advance through to the COR/TCOR with the approval of the KO, the installation and the end-user.

8.7 **FIRE PREVENTION**: Responsibility: The end-user, Safety Officer and the KO and/or COR/TCOR will attend pre-performance conferences to brief contractor on pertinent fire regulations and to provide guidance for fire safe operations during contract performance.

- Fire prevention guidance will be furnished to the contractor for briefing his personnel. All hot work requires a DA 5383 Hot Work Permit request approved by the Installation Fire Department. The contractor shall coordinate through the COR/TCOR for the required fire hazard/safety inspection prior to any hot work.

- Smoking: Use of cigars, cigarettes, matches, and mechanical lighters is prohibited in buildings used for storage, repair, processing, or servicing except in areas designated as "Authorized Smoking" as approved by the PRARNG or his designated representative. Areas so designated shall be marked by suitable signs.

- Discarded smoking materials shall be placed in special noncombustible receptacles. At the close of business, or upon cessation of operations each day, these receptacles shall be removed from the building and the contents disposed of in a fire-safe manner. Smoking is prohibited in any facility or area where any painting is being done.

- Fire Reporting: Any person who discovers a fire shall report it immediately, even when it is extinguished without the aid of the Fire

Department. The facility or installation shall provide specific guidelines for fire reporting and notification.

8.8 **ELECTRICAL HAZARDS/POWER TOOLS:** During Fire Prevention inspections, all appliances deemed unsafe and connected to an electrical distribution system shall be disconnected from the electrical system until approved by a licensed electrician. In buildings where volatile liquids are used and/or stored, only vapor-proof type drop cords shall be used. All flexible cords on appliances shall be continuous lengths and shall be kept in good condition without splice tape.

8.9 **HOUSEKEEPING:** Trash shall not be allowed to remain in any area or building overnight. Only non-combustible trash containers and wastepaper containers shall be used. Trash shall not be allowed to accumulate on the floors, in attics, or underneath stairwells or buildings.

- Attics and the area underneath stairwells shall not be used for storage without prior written approval of the PRARNG or designated person.

- Outdoor trash receptacles shall be located at a reasonable safe distance from buildings. Trash and litter, including scrap lumber, shall not be stacked less than twenty (20) feet from any building. Rags shall be kept in a metal container with metal lid.

- Oily rags shall be removed from the building at the end of each workday. All containers shall be properly labeled with contents.

8.10 **JOB SITE MAINTENANCE:** During the construction period, all vegetation at the construction site and the storage area shall be maintained by the contractor. Maintenance shall include mowing grass and/or weeds at least weekly. All damaged or dead vegetation shall be replaced as directed by the Contracting Officer at no additional cost to the Government. Contractor shall maintain grass no taller than 2 inches.

8.11 **LIQUID POWERED EQUIPMENT:** In all areas where an accumulation of explosive gases is likely to occur from the use of power equipment, adequate ventilation shall be maintained. Privately owned vehicles shall not be parked in any building or structure other than those designated and approved in writing for this purpose.

8.12 **ARC TORCH WELDING, CUTTING AND BRAZING:** Welding, cutting, or brazing within or around any structure, other than approved welding shops, will require permission from the PRARNG Safety Officer and the Installation Fire Marshall.

- Backflow protection shall be provided by an approved device that shall prevent oxygen from flowing into the fuel gas supply system or fuel gas from flowing into the oxygen supply system.

- Flashback protection shall be provided by an approved device that shall prevent the flame from passing into the fuel gas supply system. Only certified welders shall operate welding equipment.
- All equipment shall be inspected daily for damage, loose connections, and unsafe conditions. Repair or replacement shall be made if required.

- When precautionary measures have been taken and fire hazards continue to exist, a fireguard provided with suitable fire extinguishing equipment shall be stationed near the welding location.

- During any work in which a concentration of flammable vapors or dust is likely, all open flames shall be extinguished and the building shall be adequately ventilated.

- Precautions shall be taken to ensure that electrical circuits are not activated. Do not shut off water mains and fire hydrants or perform any maintenance that will interfere with the water supply on the facility without first notifying the DPW Office or representative.

- For all potential fire hazards and actual emergencies not specifically covered in this section, the exercise of good common sense will usually suffice. When in doubt, contact the facility manager or DPW.

8.13 **EXCAVATION/TRENCHING REQUIREMENTS:** The contractor shall submit a Dig Permit request in accordance with installation requirements through the COR/TCOR in order to clear the area for underground infrastructure. The contractor shall be responsible to preserve Government infrastructure and coordinate clearance of underground infrastructure through the COR/TCOR with the installation. At minimum, the contractor shall consider:

Underground electrical utilities such as electrical, potable water, communication, gas, etc.

Underground storm water lines.

Other critical underground infrastructure.

Archeological or protected flora or fauna in the area.

Other environmental considerations as prescribed by the Puerto Rico National Guard (PRNG) Environmental Office.

- The contractor is responsible for repairs of all damaged utilities. Although the installation may issue a clearance of underground utilities, the age of some of them predates existing records and may or may not be located. It is recommended to include a study using a Ground Penetrating Radar to conduct a utility survey in the absence of current as-built drawings.

8.14 **CONNECTION TO INSTALLATION UTILITY INFRASTRUCTURE:** The Government does not provide telephones/facsimiles, bathrooms/restroom facilities, or any other utility. Approval may be granted for utilization of certain utilities as described below:

- **ELECTRICAL UTILITY CONNECTION:** The contractor shall not connect to any Government Owned electrical infrastructure without authorization from DPW.
    - The contractor shall coordinate connection to utilities upon approval by the Director of Public Works and with the consent of the KO.
    - Submit request for connection no later than two weeks in advance. Failure to do so may result in denial of request.
    - The contractor is responsible to maintain utility connections in accordance with state and local regulatory agencies, building and safety codes.
    - The contractor is responsible for supplying an electric meter in compliance with state and federal regulatory agencies such as the Puerto Rico Electric Power Authority (PREPA/AEE).
    - The Government shall generate a bill of consumption through the installation, which shall be paid in full by the contractor, unless the contract authorizes use of utilities at no cost.
- **POTABLE WATER SUPPLY/CONNECTION:** The contractor shall not connect to any Government Owned water infrastructure without authorization from DPW.
    - The contractor shall coordinate connection to utilities upon approval by the Director of Public Works and with the consent of the KO. Submit request for connection no later than two weeks in advance. Failure to do so may result in denial of request.
    - The contractor is responsible to maintain utility connections in accordance with state and local regulatory agencies, building and safety codes.

- The contractor is responsible for supplying a water meter in compliance with state and federal regulatory agencies such as the Puerto Rico Aqueducts and Sewer Authority (PRASA/AAA).

- The Government shall generate a bill of consumption through the installation, which shall be paid in full by the contractor, unless the contract authorizes use of utilities at no cost.

8.15 **DISCHARGE OF WATER IN STORM WATER SYSTEM:** The contractor shall not discharge in any way or form in any Government Owned storm water infrastructure without authorization from DPW.

- The contractor shall coordinate connection to utilities upon approval by the Director of Public Works and with the consent of the KO.

- Submit request for connection no later than two weeks in advance. Failure to do so may result in denial of request.

- The contractor is responsible to maintain utility connections in accordance with state and local regulatory agencies, building and safety codes.

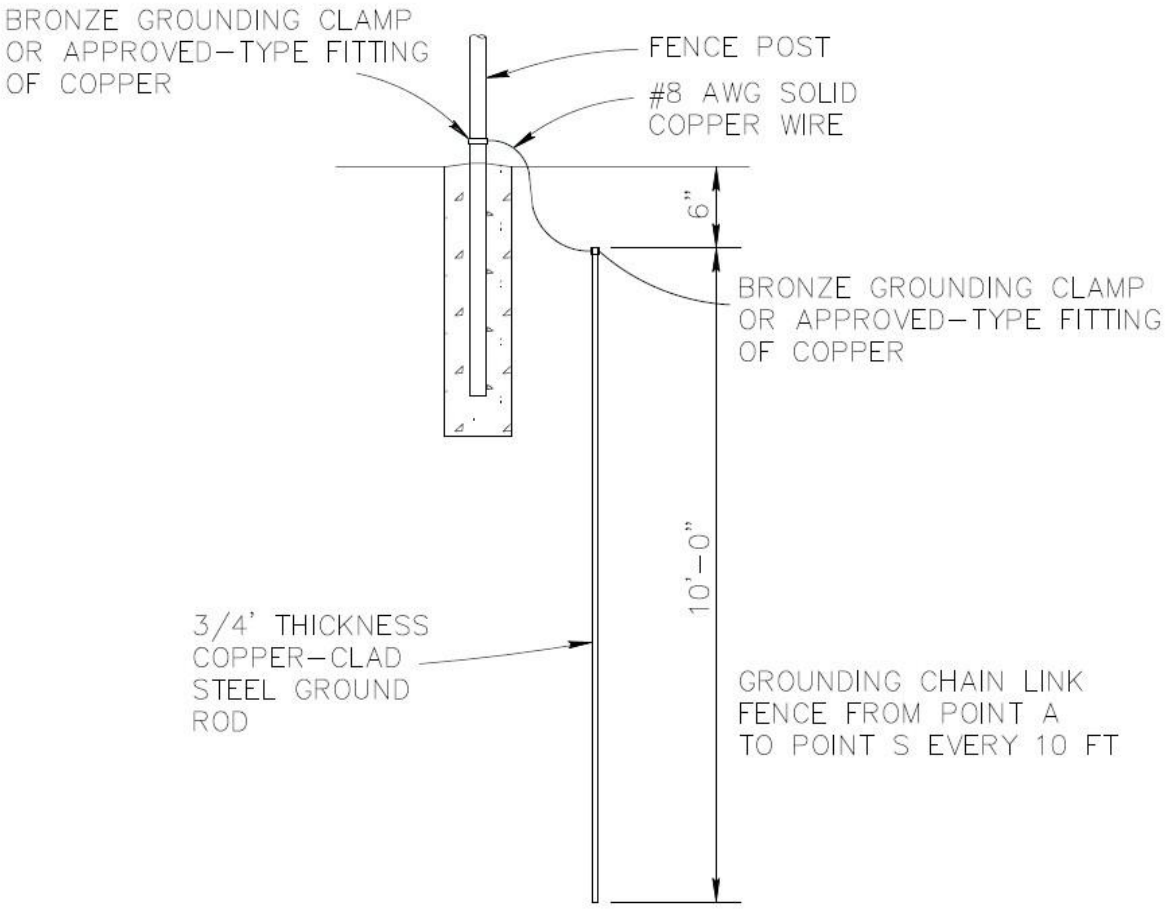
- The contractor is responsible disposing in compliance with state and federal regulatory agencies such as the Puerto Rico Aqueducts and Sewer Authority (PRASA/AAA), Environmental Protection Agency, Puerto Rico Environmental Quality Board (EQB/"Junta de Calidad Ambiental de Puerto Rico").

8.16 **SAFETY/JOB SITE SECURITY:** The contractor shall comply with all applicable regulations for standards of labor, performance by trade, state and federal regulations, and installation and organizational policies. The contractor shall assign a competent person trained with the minimum 29 CFR 1926 OSHA CONSTRUCTION 30 HRS course to function as the Safety Inspector/Officer of the project. The contractor shall prepare and submit a Safety Plan in accordance with governing contracting agency and general provisions for public works.

- **CONTRACTOR SECURITY OF JOB SITE:** Despite the fact that the Camp Santiago has its own security, the contractor is responsible of securing its storage area and materials. The PRNG is not responsible of missing parts or materials. Once the job is finished the contractor will:

    - Remove all temporary fences and structures that the contractor uses to protect materials his equipment.

- The storage area shall be cleaned of all debris and demolition material and repaired as required to bring the site back to its



GROUNDING_DETAIL FROM POINT A TO POINT S

N.T.S.