SCOPE OF WORK: FOR THE REQUIRED WORKS TO VARIOUS HORSE RANCH LOCATIONS IN THE MUNICIPALITY OF DORADO BELONGING TO THE LAND AUTHORITY OF THE GOVERNMENT OF PUERTO RICO

Work to be completed:

The applicant will utilize contract and (or) force account for exterior repairs to Haras Turabo Horse Ranch (Potrero) (202-0703), Buildings 1, 3, 4, 5, 6 and 7, to restore these facilities to their pre-disaster design, function and capacity (in-kind) within the existing footprint, as described in FEMA Project #122241 / PW 8123, Version 3.

Note: Building-2 (Damage #313547; Equipment Storage and Garage) is included in the FEMA project but is NOT part of this solicitation. The Building-2 work was previously completed and is excluded from this Scope of Work.

Site Photo:



Damage # 219741; Building #1 (202-0703)

General Facility Information:

- Facility Type: Building
- Building Type: Other: Not Listed
- Facility: Haras Turabo - Horse Ranch - 202-0703
- Facility Description: Informal construction of masonry wall partitions, wood columns and beams and corrugated metal roof panels. The structure was built in 1980 and is used as a horse stable. Have an approximate roof dimension of 58ft x 46ft for an area of 2,668 sf.

- Approx. Year Built: 1980
- Location Description: PR# 696 and Del Potrero street, Higuillar, Dorado, PR 00646
- GPS Latitude/Longitude: 18.44794, -66.28681
- Number of Stories: 1

Scope of Work:

I. Related Damaged Items to be Protected:

A. Replace Building Exterior, 2,668 SF of Corrugated galvanized metal roof panels 22 Ga. 58 FT long x 46 FT wide.

B. Supply and install, 2,668 SF Wood frame, 58 FT long x 46 FT wide of Treated Wood purlins, 2" wide x 6" high, (24" of clearance) and Treated wood post 4" X 4".

a. Prepare shop drawing by Lic. Engineer.

C. Replace electrical system.

a. Supply and replace 12ea metal halide fixture, surface mounted, aluminum reflector, single unit, 400 W, including lamps, mounting hardware and connection.
b. Supply and replace electrical panel, exterior 75 amp (12ea breakers)
c. Supply and install, receptacle devices, 6 ea rain proof, 20 amp, including waterproof box and cover.
Note: use metallic tubing (EMT) and wire #12 copper 600

II. Hazard Mitigation Proposal (HMP) Scope of Work:

Roof:

A. **Exterior Metal Panel Fastening**
Supply and install additional non-corrosive screws with neoprene washers throughout approximately 2,668 square feet of corrugated galvanized metal roof panels (22 Ga.) to improve fastening resistance and prevent displacement during high-wind events.

a. Work includes surface preparation, installation of additional fasteners in accordance with manufacturer's recommendations, and verification of proper sealing to maintain watertight integrity.
b. All fasteners must be corrosion-resistant, compatible with existing roof materials, and installed to ensure uniform attachment strength across the entire roof area.

B. **Hurricane Ties Installation:**
Supply and install 1-1/2” x 1-1/2” x 6-1/2” G185 18-Gauge Hurricane Ties at all wood frame connections between rafters and beams to enhance structural load transfer and resistance to uplift forces. Estimated quantity (per FEMA HMP): 680 each.

a. Work shall include proper anchoring of each connector with approved fasteners.
b. Installation shall comply with applicable building codes and manufacturer specifications for high-wind zones.
c. Contractor shall verify alignment and tightness to ensure secure connections without damage to the treated wood elements.

C. **Roof Truss Clips Installation:**
Supply and install DTC 18-Gauge Roof Truss Clips at all junctions between roof trusses and wall plates to provide additional vertical and lateral restraint. Estimated quantity (per FEMA HMP): 116 each.

a. Installation shall follow the structural design layout and ensure full contact between clip surfaces and framing members.
b. Fasteners must be corrosion-resistant and installed with consistent torque to ensure uniform strength.
c. All clips shall be inspected for alignment and compliance with FEMA mitigation standards.

Photos Bldg #1:











Damage #313550; Haras Turabo Horse Ranch (Potrero) (202-0703) Building-3

General Facility Information:

- Facility Type: Building
- Building Type: Other: Not Listed
- Facility: Haras Turabo Goat Stable Building 3
- Facility Description: A one-story simply structure of galvanized metal corrugated panels and wood frames used as a goat stable. The structure was built approx. in 2016 and has roof dimensions of 20ft long x 11ft wide and a metal fence of 53 lineal feet, for a roof area of 220 sf.
- Approx. Year Built: 2016
- Location Description: PR# 696 and Del Potrero street, Higuillar, Dorado, PR 00646
- GPS Latitude/Longitude: 18.44760, -66.28672
- Number of Stories: 1

Scope of Work:

I. Related Damaged Items to be Protected:

A. Building Exterior, 220 SF of Galvanized steel corrugated panel with wood frame, 20 FT long per 11 FT wide.

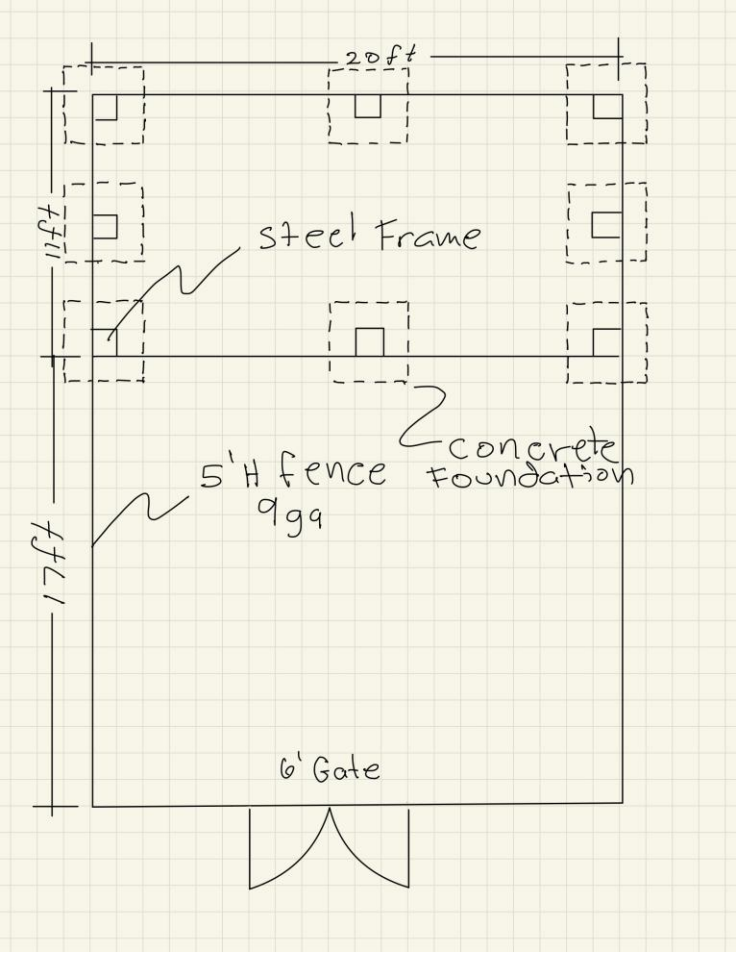
1. New Construction:

a. Construct a new steel structure 11 FT wide x 20 FT long x 10 FT H.
b. Supply and install new 4”x4” square pipe for columns (8 ea)
c. Supply and install 220 SF of Corrugated galvanized metal roof panels 22 Ga., 10 FT long per 10 FT wide.
d. Supply and install 100 SF of wood frames for the roof (use 3x3 and 2x2 steel pipes).
e. Prepare a shop drawing (approved by a structural Engineer) for approval and final construction.

B. Remove galvanized steel fence.

C. Install Cyclone Fence, 96 LF long x 5 FT High with a 6 FT long x 5 FT High access gate.

Floor Plan Drawing:





II. Hazard Mitigation Proposal (HMP) Scope of Work

A. Exterior Metal Panel Fastening:

Supply and install additional non-corrosive screws with neoprene washers on approximately 220 square feet of corrugated galvanized metal roof panels (22 Ga.), to improve fastening resistance and prevent displacement during high-wind conditions.

a. Work shall include surface preparation, installation of additional fasteners in accordance with manufacturer recommendations, and verification of proper sealing to maintain watertight integrity.
b. All fasteners shall be corrosion-resistant and compatible with existing roof materials.
c. Ensure uniform fastening spacing and alignment across all roof panels.

B. Hurricane Ties Installation

Supply and install 1-1/2” x 1-1/2” x 6-1/2” G185 18-Gauge Hurricane Ties at all wood frame or steel-to-wood connections to enhance uplift resistance and improve the load transfer between roof members. Estimated quantity (per FEMA HMP): 56 each.

a. Work shall include secure anchoring of each tie with approved fasteners and alignment to structural members.
b. Installation shall comply with applicable building codes and manufacturer specifications for high-wind exposure zones.
c. Verify tightness and proper seating to ensure consistent structural reinforcement.

C. Roof Truss Clips Installation

Supply and install **DTC 18-Gauge Roof Truss Clips** at all structural junctions between roof trusses and wall plates to provide additional vertical and lateral restraint. Estimated quantity (per FEMA HMP): 10 each.

a. Installation shall follow the engineer-approved shop drawings.
b. All clips must be corrosion-resistant and properly torqued to ensure uniform connection strength.
c. Inspect each installed clip for alignment and compliance with FEMA mitigation standards.

Damage # 313551; Building #4 (202-0703)

General Facility Information:

- Facility Type: Building
- Building Type: Other: Not Listed
- Facility: Haras Turabo - Building 4

- Facility Description: A one-story single structure of metal deck purling frame, pipe columns and (CMU) masonry walls partitions used as horses stable. The structure was built approx. in 1980 and has a roof dimension of 171.5ft L x 34ft W for an area of 5,831 SF.
- Approx. Year Built: 1980
- Location Description: PR# 696 and Del Potrero street, Higuillar, Dorado, PR 00646
- GPS Latitude/Longitude: 18.44746, -66.28693
- Number of Stories: 1

Scope of Work:

I. Related Damaged Items to be Protected:

A. Supply and install 5,831 SF of Galvanized corrugated metal roof panels, 22Ga., Type B, 171.5 FT long x 34 FT wide.

B. Supply and install, Steel purlins, C type, 6in, 2,390.5 LF long, each purlins was spaced at 5ft in a vertical and horizontal direction.

C. Replace electrical system.
   a. Supply and replace 20ea LED lighting fixture, surface mounted, aluminum reflector, single unit, 200 W, include lamps, mounting hardware and connection.
   b. Supply and replace electrical panel, exterior 75 amp (12 ea breakers 20 amp and 3ea 30 amp)
   c. Supply and install, receptacle devices, 6 ea rain proof, 20 amp, including waterproof box and cover.
      Note: use metallic tubing (EMT) and wire #12 copper 600V.

D. Supply and install steel framing for 5,831 SF (prepare shop drawing by Lic. Structural Engineer).

II. Hazard Mitigation Proposal (HMP) Scope of Work:

Roof Strengthening:

A. Exterior Metal Panel Fastening - Metal Roof, Siding, and Flashing.
   Note:
   a. Improve exterior metal panel fastening by including additional fasteners protect the building envelope and prevent flexure, displacement and subsequent water infiltration damages.
   b. Add 3 additional non-corrosive screws w/neoprene washers every 12 SF on 5,831 S.F. of damaged metal panels to reinforce fastening pattern thus protecting the building envelope.

B. Purlin's Connectors.
   Note:
   a. Add 90 degrees metal angle connector, 3"x3"x3/8". Add 2 angles for each purlin. to strengthen purlins to supports connections.
   b. Use 4 hex head bolts, plain steel, 3/8" dia x 2" to anchor angle to purlin. Install 35 angles and 280 bolts for a 171.5 FT long x 34 FT wide roof.

Photos Bldg #4:






Damage # 313552; Building #5 (202-0703)

General Facility Information:

- Facility Type: Building
- Building Type: Other: Not Listed
- Facility: Haras Turabo - Building 5 (Dwelling)
- Facility Description: This informal construction consists of (CMU) concrete masonry walls with a wood roof structure (beams and purlins) and corrugated galvanized metal roof panels. The construction could be classified as informal, very little uniformity can be observed in the materials, elements and layouts used. The structure was built in 1980 and has a dimension of 47.5ft long x 21ft wide for an area of 997.5 SF. Approx. Year Built: 1980
- Location Description: PR# 696 and Del Potrero street, Higuillar, Dorado, PR 00646
- GPS Latitude/Longitude: 18.44767, -66.28697
- Number of Stories: 1

Scope of Work:

I. Related Damaged Items to be Protected:

A. Supply and install 997.5 SF of Corrugated galvanized metal roof panels type B, 22ga, 47.5 FT long x 21 FT
B. Supply and install 997.5 SF of Treated Wood purlins, 2" wide x 6" high, (24" of clearance). Treated wood post 4" X 4" (prepare shop drawing by Lic. Engineer).
C. Supply and install 997.5 SF of Treated wood panels, 47.5 FT long x 21 FT wide.
D. Replace 1 each of electrical system:

a. Remove and replace, receptacle devices, 6 ea rain proof, 20 amp, including waterproof box and cover.
b. Replace 1 SF of concrete plaster to protect breaker box panel.
c. Verify all electrical wiring, switches, breakers and electrical panel (must be according with current electrical code)

II. Hazard Mitigation Proposal (HMP) Scope of Work:

Roof Strengthening:

A. Exterior Metal Panel Fastening:

Supply and install additional non-corrosive screws with neoprene washers throughout approximately 997.5 square feet of corrugated galvanized metal roof panels (22 Ga.) to improve fastening strength and prevent displacement during high-wind events.

a. Work shall include surface preparation, installation of additional fasteners in accordance with manufacturer's recommendations, and verification of proper sealing to maintain watertight integrity.
b. All fasteners shall be corrosion-resistant, compatible with existing roof materials, and installed with consistent spacing and alignment to ensure uniform attachment.

B. Hurricane Ties Installation:

Supply and install 1-1/2" x 1-1/2" x 6-1/2" G185 18-Gauge Hurricane Ties at all roof framing connections between rafters and beams or trusses to enhance structural resistance to uplift and lateral wind forces. Estimated quantity (per FEMA HMP): 288 each.

a. Work shall include proper anchoring of each tie with approved fasteners, ensuring secure and aligned connections.
b. Installation shall comply with applicable building codes and manufacturer specifications for high-wind exposure zones.
c. All components shall be inspected for tightness and alignment to ensure full structural performance.

C. Roof Truss Clips Installation

Supply and install DTC 18-Gauge Roof Truss Clips at all junctions between roof trusses and wall plates to provide additional lateral and vertical restraint. Estimated quantity (per FEMA HMP): 42 each.

a. Installation shall follow structural design layouts approved by a licensed engineer.
b. Fasteners must be corrosion-resistant and installed to the manufacturer's specified torque.
c. Conduct a final inspection to verify proper clip placement and compliance with FEMA mitigation standards.

Photos Bldg #5:





Damage # 313554; Building #6 (202-0703)

General Facility Information:

- Facility Type: Building
- Building Type: Other: Not Listed
- Facility: Haras Turabo - Building 6
- Facility Description: This facility consists in CMU wall structure with metal roof panels, wood beams and purlins. The structure has an approximate area of 204 SF
- Approx. Year Built: 1980

- Location Description: PR# 696 and Del Potrero street, Higuillar, Dorado, PR 00646
- GPS Latitude/Longitude: 18.44768, -66.28725
- Number of Stories: 1

Scope of Work:

I. Related Damaged Items to be Protected:

A. Supply and install 1,456 SF of Corrugated galvanized metal roof panels 22 Ga., 52 FT long x 28 FT wide.
B. Supply and install 1,456 SF of Metal Frame Purlins, 2" wide x 6" high, (24" of clearance), 52 FT long x 28 FT wide (prepare shop drawing by Lic. Engineer).

II. Hazard Mitigation Proposal (HMP) Scope of Work:

Roof Strengthening:

A. Exterior Metal Panel Fastening - Metal Roof, Siding, and Flashing.
Note:
a. Improve exterior metal panel fastening by including additional fasteners protect the building envelope and prevent flexure, displacement and subsequent water infiltration damages.
b. Add 3 additional non-corrosive screws w/neoprene washers every 12 SF on 1,456 S.F. of damaged metal panels to reinforce fastening pattern thus protecting the building envelope.

B. Purlin's Connectors.
Note:
a. Add 90 degrees metal angle connector, 3"x3"x3/8". Add 2 angles for each purlin. to strengthen purlins to supports connections.
b. Use 4 hex head bolts, plain steel, 3/8" dia x 2" to anchor angle to purlin. Install 26 angles and 208 bolts for a 52 FT long x 28 FT wide roof.

Photos Bldg #6:









Damage # 313557; Building #7 (202-0703)

General Facility Information:

- Facility Type: Building
- Building Type: Other: Not Listed
- Facility: Haras Turabo - Building 7
- Facility Description: Horses stable with 3 stalls of masonry walls, metal gates, grilles and roof with wood structure (columns and beams) and metal panels. It has an attached office trailer with a balcony in wooden structure and metal roof panels.
- Approx. Year Built: 1980
- Location Description: PR# 696 and Del Potrero street, Higuillar, Dorado, PR 00646
- GPS Latitude/Longitude: 18.44823, -66.28832
- Number of Stories: 1

Scope of Work:

I. Related Damaged Items to be Protected:

A. Building Exterior, remove and replace, 975 SF of Corrugated galvanized metal roof panels type B, 22ga., 50 FT long x 19.5 FT wide,
B. Building Exterior, 400 SF of Corrugated galvanized metal roof panels type B, 22ga., 40 FT long x 10 FT wide,
C. Supply and install wood framing for 975 SF (prepare shop drawing by Lic. Engineer)
D. Supply and install wood framing for 400 SF (prepare shop drawing by Lic. Engineer)

II. Hazard Mitigation Proposal (HMP) Scope of Work:

A. Exterior Metal Panel Fastening:

Supply and install additional non-corrosive screws with neoprene washers throughout approximately 1,375 square feet of corrugated galvanized metal roof panels (22 Ga.), to improve fastening patterns and increase resistance against high-wind uplift.

a. Work shall include surface preparation, installation of additional fasteners following manufacturer recommendations, and verification of watertight sealing.
b. All fasteners must be corrosion-resistant, compatible with existing roof materials, and installed uniformly to ensure consistent anchorage strength.
c. Ensure that the fastening layout enhances the structural integrity of the roof and minimizes potential flexure or displacement during strong wind events.

B. Hurricane Ties Installation

Supply and install **1-1/2" x 1-1/2" x 6-1/2" G185 18-Gauge Hurricane Ties** at all roof truss and rafter connections to improve structural load transfer and prevent uplift or separation of roof components. Estimated quantity (per FEMA HMP): 398 each.

a. Each tie shall be securely anchored with approved fasteners and properly aligned with structural members.
b. Installation must comply with applicable building codes and manufacturer's guidelines for wind exposure regions.
c. Verify tightness, alignment, and spacing to ensure uniform performance throughout all roof connections.

C. Roof Truss Clips Installation

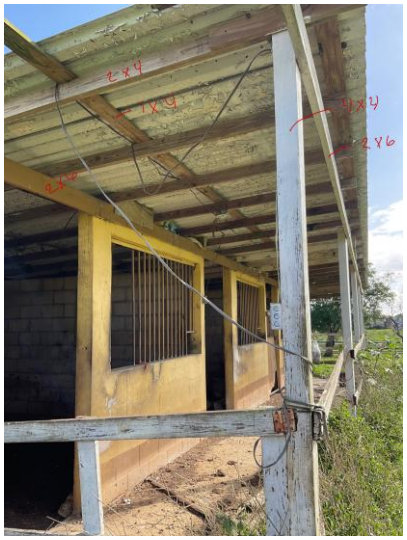
Supply and install **DTC 18-Gauge Roof Truss Clips** at truss-to-wall plate connections to provide additional lateral and vertical restraint to the roof structure. Estimated quantity (per FEMA HMP): 61 each.

a. Installation shall follow structural layout drawings approved by a licensed engineer.
b. All clips shall be corrosion-resistant and installed using proper torque to ensure maximum holding strength.
c. Conduct a final inspection to verify proper installation and compliance with FEMA mitigation standards.

Photos Bldg #7:







General Requirements (applicable to all buildings):

1. Scope limited to FEMA-approved work. This Scope of Work is aligned with the FEMA-approved Scope of Work for Project #122241 / PW 8123, Version 3 (DR-4339-PR). No work outside this Scope of Work shall be performed without prior written authorization from the Land Authority. Any change to the approved scope requires prior FEMA approval through COR3.

2. Quantities. Hazard mitigation quantities shown as “Estimated quantity (per FEMA HMP)” are the quantities used in the FEMA cost estimate. The Contractor shall verify all quantities in the field and in the approved shop drawings.

3. Shop drawings. Where indicated, shop drawings shall be prepared and sealed by a licensed Engineer and approved by the Land Authority before construction.

4. Permits and floodplain (Building 4). The Contractor shall obtain all required permits from the Puerto Rico Permits Management Office (OGPe) before starting work and comply with any permit conditions. Work at Building 4 (Damage #313551) shall comply with the local floodplain management ordinance

and the Puerto Rico Advisory Base Flood Elevation (ABFE 2018) map. All coordination shall be documented and provided to the Land Authority.

5. Debris and waste disposal. All construction debris, scrap metal and unusable materials shall be separated and disposed of at a permitted site or landfill in accordance with PR DNER guidelines and applicable local, state and federal regulations. The Contractor shall provide the name, location, coordinates and permits of the disposal facility. Any petroleum products, hazardous materials or toxic waste found shall be handled and disposed of according to applicable regulations.

6. Puerto Rican boa and Virgin Islands boa conservation measures. The Contractor shall comply with all FEMA/USFWS conservation measures included in the project, including: pre-construction meeting and training of all personnel; educational poster at the site; marking of work area boundaries; survey by a biologist or designated trained personnel before vegetation removal or use of heavy machinery; daily inspection of heavy machinery and debris piles; recording of any sighting; and stopping work and notifying the Land Authority if a boa is found.

7. Archaeological resources. If ground-disturbing activities occur and any potential archaeological resources are discovered, the Contractor shall immediately stop work in that area and notify the Land Authority.

8. Allowance. Any allowance in the Bid Form shall be used only for work within the FEMA-approved scope and only with prior written authorization from the Land Authority. Unused allowance amounts remain with the Owner.

9. Close-out documentation. The Contractor shall provide the documentation required to prove compliance with the conditions above (permits, disposal receipts, conservation measure records, photos) for FEMA close-out.