

- **Facility Description:** A 180' x 34.66' Methadone Clinic building of historic relevance serving over 300 participants from neighboring municipalities. The EHP Specialist has identified this building to date back to the early 20th Century (1900-1910). The building is made up of concrete/cmu walls with timber roof framing supporting metal roofing system, and traditional operable aluminum jalousie windows.
- **Approx. Year Built:** 1910
- **Location Description:** 294 Avenida Jose de Diego, Cayey P.R. 00736
- **GPS Latitude/Longitude:** 18.11594, -66.17290
- **Number of Stories:** 1

Final Scope

143327 CTIAM de Cayey- Building A

*****Version 1*****

Version 1 created to capture Applicant's provided Method of Repair for the repairs of the disaster related damages in "CTIAM de Cayey Permanent Work". In Version 0 a total of \$168,578.00 was awarded in support to the Applicant for the development of their Method of Repair. Applicant has submitted an MOR for FEMA's review. FEMA developed a cost per Applicant's request.

SOW from previous version has been removed from current SOW. It can be found in the "Versioning and Amendments" tab in GM.

Work to be completed

The applicant will utilize contracts for repairs to the **CTIAM de Cayey- Building A** to restore facilities back to pre-disaster design, capacity and function within the existing footprint with in-kind materials.

Building Damage:

Admin/Warehouse:

Building Exterior:

- A. Remove and replace in kind 15 Aluminum Jalousie Windows, 4 FT wide x 5 FT high.
- B. Prepare and paint in kind 9,146 SF of Latex Wall paint.
- C. Remove and replace in kind 4 Aluminum Jalousie windows, 3 FT long x 3 FT high.
- D. Remove and replace in kind 2 Metal Double door, Frame and Hardware, 5 FT wide x 7 FT high.
- E. Remove and replace 11 Packaged Air Conditioning, 12,000 BTU Window installation type.
- F. Remove and replace 4 Split unit Model JS4BD-060KB (5 Tons) 208/230 volts (Condensing units, Evaporator and Condenser).

Roof:

- A. Remove and replace in kind 9,556 SF of Asphalt Membrane Waterproofing , 178 FT long x 58 FT wide. See scope note 1.
- B. Remove and replace in kind 9,556 SF of Galvanized Corrugated Metal Roof, 178 FT long x 58 FT wide. See scope note 1.

C. Replace in kind 1,020 SF of Wooden and Corrugated Metal Connector Canopy Gable Roof, 85 FT long x 12 FT wide.

Ridge Vents:

- A. Remove and replace in kind 144 FT long Wooden 1 in x 4 in Planks for Vents.
- B. Remove and replace in kind 24 FT long Wooden 2 in x 4 in Vent Frame.
- C. Remove and replace in kind 90 FT long Wooden 3 in x 8 in Rafters.
- D. Remove and replace in kind 48 FT long Wooden 1 in x 6 in Groove and Tongue Boards.

Building Interior:

- A. Remove and replace 70 Fluorescent Ceiling Luminaire 120V, 4 FT long x 2 FT wide.
- B. Remove and replace in kind 5,377 SF of Vinyl Composition Floor Tile 12 in x 12 in, 110 FT long x 48.5 FT wide.
- C. Remove and replace 8,536 SF of Fire Alarm System and Paneling (17 Rooms), 176 FT long x 48.5 FT wide.
- D. Prepare and paint in kind 13,960 SF of Latex Wall paint.
- E. Remove and replace in kind 26 Wooden Semi Solid flush paneling Door, frame and hardware, 3 FT wide x 7 FT high.
- F. Remove and replace 5 Recessed Ceiling lights, 2 FT long x 2 FT wide.
- G. Remove and replace in kind 13,025 SF of Gypsum Drywall with Metal Frame (Studs, Tracks).
- H. Remove and replace 5,377 SF of Electrical Distribution (Lighting and Power), 110 FT long x 48.5 FT wide.
- I. Remove and replace 5,377 SF of Data System, 110 FT long x 48.5 FT wide.
- J. Remove and replace in kind 1,598 FT long Vinyl baseboard, 4in.
- K. Remove and replace in kind 3 Wooden Door with safety glass vision of 24in x 30in frame, frame and hardware, 3 FT wide x 7 FT high.
- L. Remove and replace in kind 5,377 SF of Acoustic Suspension system Grid (Wall angles: 2,536 Ft (L), main tee, Cross Tee, Wire), 110 FT long x 48.5 FT wide.
- M. Remove and replace 2 Electrical Metal blade Ceiling Fan 36-48 in.
- N. Remove and replace 5,377 SF of Communication Telephone System, 110 FT long x 48.5 FT wide.
- O. Remove and replace in kind 5,377 SF of Fiber Mineral 2 Ft (W) x 4 Ft (L) Acoustical Ceiling, 110 FT long x 48.5 FT wide.
- P. Remove and replace 1 each of 36 in x 36 in Commercial Exhaust Fan.

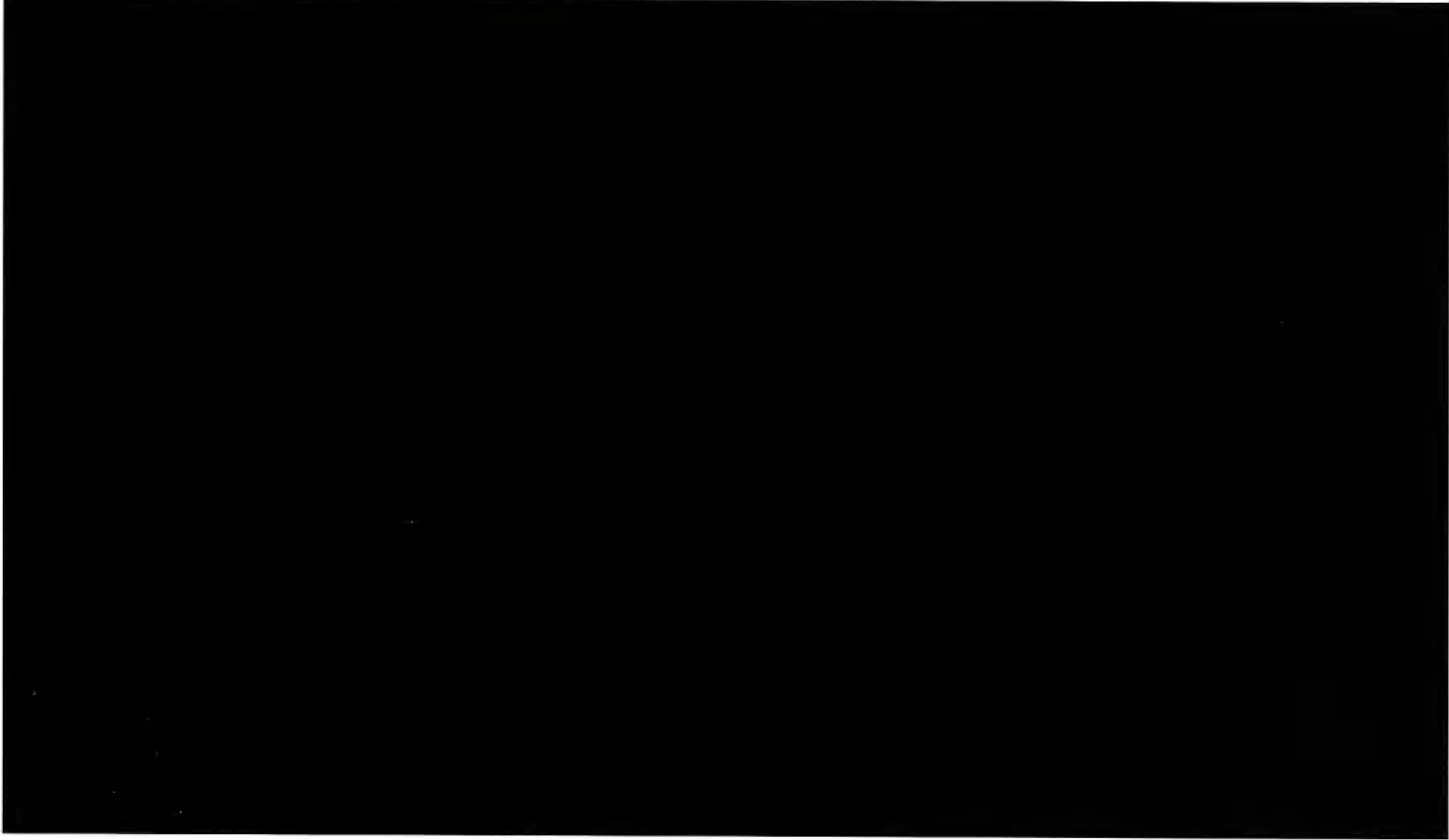
Attic:

- A. Remove and replace in kind 5,377 SF of Wooden Flooring Boards, 110 FT long x 48.5 FT wide.

Contents:

- A. Replace 37 Wooden Dining Chairs with Backrest, Metal Legs, Comfortable Wide Seat, 18.9 in (W) x 21.2 in (D) x 29.9 in (H).
- B. Replace 15 Metal Single Pedestal Desk 24 in (D) X 45 in (W) x 30 in (H).
- C. Replace 2 Mobile Blood Pressure Monitor with Rolling Stand, Aneroid Sphygmomanometer, BP Cuff & Wheels, 223B.
- D. Replace 3 Medical Utility Lab Rolling Cart 2 Layer Cart with Wheels Mobile Clinic.

Work to be Completed Total: \$3,050,828.48



Project Notes:

1. All site estimates for work to be completed were generated using RS means Software Data/Year 2024 Quarter 1 – PUERTO RICO / URBAN (PRU) and Future Price Factors for Zone 1-Urban. See document labeled *ST65506 - DR4339PR – Cost Estimate Rev1.xlsx*. CEF cost estimate in GM may vary from CEF cost estimate worksheet due to rounding. The worksheet cannot be adjusted to correct the difference.
2. A Cost Estimating Format (CEF) has been created for this project, see attachment labeled: *ST65506 - DR4339PR – CEF Rev1.xlsx*.
3. This project is a PA Alternative Procedures project, involves a Critical Service, CTIAM de Cayey, and the disaster damage impacts the function of educational facility. For each site (as defined in the BBA Policy) in this project where disaster damage meets the large project threshold of \$123,100, the Bipartisan Budget Act (BBA) applies.
4. Disaster damaged components at this site were comingled with pre-existing damage/deterioration. After conducting a site inspection and evaluating all available documentation, FEMA was unable to distinguish and separate disaster-related damage from pre-existing damage/deterioration. This Project/PW/Project provides funding for repairs to disaster-damaged components that also had pre-existing conditions based on the authorities in Section 20601 of the Bipartisan Budget Act of 2018 as defined in FEMA's Recovery Policy FP- 104-009-5, Implementing Section 20601 of the 2018 Bipartisan Budget Act through the Public Assistance Program.
5. Bipartisan Budget Act (BBA): As authorized by the BBA additional flexibilities were applied to this Project/PW as authorized and detailed within the scope of work. If the Subrecipient wishes to use these funds toward an Alternate Project, the Alternate Project must still provide a BBA-eligible critical service and must be constructed to the approved industry standard(s). FEMA will evaluate the proposed use for reasonableness. If funds not used toward a BBA eligible project,

FEMA will have to re-scope the project taking out all work authorized under BBA and the estimate will be adjusted based on the new SOW.

406 HMP Scope

Hazard Mitigation Narrative

During the incident period of Sunday, September 17, 2017, through Wednesday, November 15, 2017, Hurricane Maria produced high velocity wind and prolonged periods of rainfall that severely affected this facility's envelope elements and subsequent, significant interior damages that includes but not limited to interior paint, doors, acoustic ceiling tiles, Gypsum Board, vinyl flooring, luminary, fire alarm system, electric distribution system, data system, telephone system, office furniture, medical devices, ceiling fans, wall/window A/C units, equipment. To prevent future similar damages the Sub- Recipient is proposing the implementation of the Wind Retrofit Mitigation to this facility.

The project is a compound for two buildings, one story each: Building A (D#143327) Administration/Warehouse with a roofing area approximately of 176'x 48.5' (8,536SF) and a Canopy connection (corrugated metal) of 85'x12' (1020 SF), an approximate total area of 9,556 SF of roofing, asphalt membrane roofing system. The building is made up of reinforced concrete/CMU walls with timber roof framing supporting metal roofing system and traditional operable aluminum jalousie windows, 19 damaged windows of a total of 43 windows, 3 ridge vents, 11 window A/C damaged. Building B (D#208992) Methadone Clinic with a footprint area approximately of 180'x 34.66' (6,238 SF). The building is made up of reinforced concrete/CMU walls with timber roof framing supporting metal roofing system and traditional operable aluminum jalousie windows 25 damaged windows of a total of 37 windows, 16 window A/C damaged. Both buildings have a historic relevance. The EHP Specialist has identified this building to date back to the early 20th Century (1900-1910). Disaster-related damages to the envelope include over 70% of the total roofing system, electrical, fire, mechanical and data communications system, 44 damaged windows of 80 total, no load path damages. An approximate interior damages for Building A exceeded \$700,000, and over \$600,000 for Building B due to high-speed winds, flood and water intrusion. The attached Appendix D for each damage: Case-by-Case Checklist includes details of the documented damages.

Prudent Use of Wind Retrofit

A case-by-case analysis was conducted for both facilities. Based on the extent of the damages, it was determined to be Prudent and Cost Effective the implementation of Non-Residential Hurricane Wind Retrofit Measures using Pre- Calculated Benefits. This mitigation is intended to retrofit envelope components including roof, openings, and load path to prevent future, similar damages to the envelope, thus, protect the building interior. Data analyzed for this determination include: DDD, PA SOW, BBA Survey Scope, A&E Report, photographs, site inspection reports among other related documents.

Damage #143327; CTIAM de Cayey-Building A

(I) Damages Description & Dimensions (DDD):

1. "For a complete list of interior damages, as well as envelope damages, please refer to the project DDD document included in GM and Grants Portal."

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

To prevent or reduce future damages from similar events, the applicant proposed the following mitigation measures:

A. Roof Mitigation: (Refer to WRF Calculator document for roofing details).

1. Replace PA SBS with a complete and reinforced SBS waterproofing on 9556 SF of metal roof to prevent wind and water damages to the system itself and subsequent water intrusion that could cause interior damages.
2. Add 3 additional non-corrosive screws w/neoprene washers every 12 SF on 9556 S.F. of damaged metal panels to reinforce fastening pattern thus protecting the building envelope.
3. Install 472 SF of non-corrosive metal L shape flashing along metal roof edges to prevent water infiltration through cracked plaster. EHP NOTES: L-shaped flashing will not be visible from the ground and will not affect the physical and visual aspect of the Historic Property façades.
4. 356 LF of galvanized steel gutters with gutter hangers to improve roof drainage capacity and prevent water damages.

5. Reinforce wood frame by installing 200 hurricane ties to strengthen roof elements connections and prevent future wind damages.

B. Openings Mitigation: Windows/Louvers and Doors

Windows/Louver:

1. Replace 3 Ea. aluminum louvers of ridge vents with impact resistant louvers of the same type and size

• $(15' \times 5.5')(3) = 247.5\text{SF}$

Note: 19 damaged windows included in PASOW and Cost Estimate to be impact resistant and 24 windows to be impact resistant covered by BBA. Window count and measurements obtained from site visit docs and A&E report?

Doors:

1. Replace 11 Ea. Metal (3'x7') damaged exterior metal flush doors with wind, water and impact resistant doors of the same size and type to prevent flexure and displacement.

2. 11 Ea. Door-Weather Stripping will be added to prevent water intrusion, avoiding damages to interior finishes and content.

3. 440 L.F. of caulking to allow better adhesion to cement and prevent future water intrusion. Due to complexity, this measure was estimated based on standard 7' x 3' approx. Door. Perimeter of each door = $7 + 7 + 3 + 3 = 20' \times 2 = 40$ L.F. 11 doors x 40 L.F. = 440 L.F. of caulking

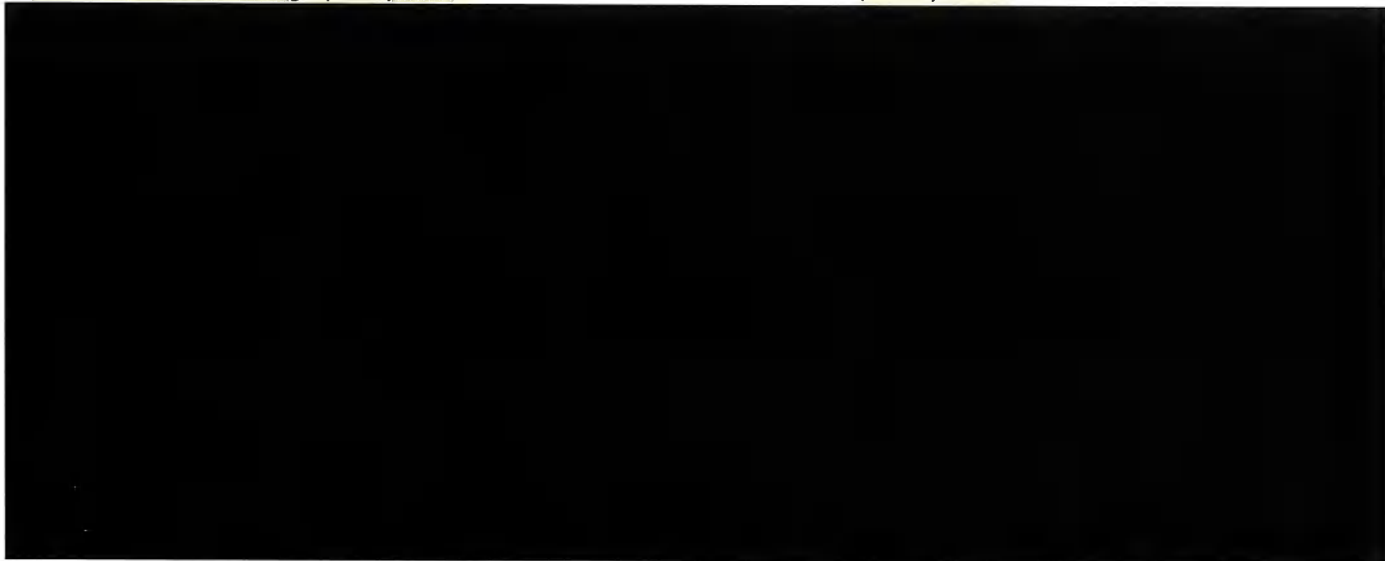
EHP NOTES: This is a Wind Retrofit Mitigation. For this mitigation the replacement of all windows (covered by PA/BBA) and doors, damaged and undamaged, is required by policy to ensure the reinforcement of the building envelope as a system. Replace doors with wind, water and impact resistant units of the same size and type as the existing. This mitigation work must be done to match all physical and visual aspects of the original elements, including design, color, texture, hardware, profile, and workmanship. Should the Applicant decide not to meet these requirements then a revised scope of work must be submitted to FEMA for approval and additional EHP review.

C. Load path.

1. No Load Path issues are addressed in this project.

(III) Hazard Mitigation Proposal (HMP) Cost

Net Wind Retrofit Package (WRP) Cost = \$ 152,136.34



208992 CTIAM de Cayey- Building B

*****Version 1*****

Version 1 created to capture Applicant's provided Method of Repair for the repairs of the disaster related damages in "CTIAM de Cayey Permanent Work". In Version 0 a total of **\$168,578.00** was awarded in support to the Applicant for the development of their Method of Repair. Applicant has submitted an MOR for FEMA's review. FEMA developed a cost per Applicant's request.

SOW from previous version has been removed from current SOW. It can be found in the "Versioning and Amendments" tab in GM.

Work to be completed

The applicant will utilize contracts for repairs to the **CTIAM de Cayey- Building B** to restore facilities back to pre-disaster design, capacity and function within the existing footprint with in-kind materials.

Building Damage:

Methadone Clinic:

Exterior:

- A. Remove and replace in kind 13 Aluminum Jalousie Windows, 4 FT wide x 5 FT high.
- B. Prepare and paint in kind 4,300 SF of Latex Wall Paint.
- C. Remove and replace in kind 3 Steel Solid metal doors 36in x 84in (w/frame, hinges, lockset).
- D. Remove and replace in kind 6 Aluminum Jalousie Windows, 3 FT wide x 3 FT high.
- E. Remove and replace in kind 6 Aluminum Jalousie Windows, 4 FT wide x 4 FT high.

Roof:

- A. Remove and replace in kind 6,238 SF of Asphalt Membrane Roofing/Waterproofing Membrane, 162 FT long x 36 FT wide. See scope note 1.
- B. Remove and replace in kind 6,238 SF of Metal Corrugated roof sheets, 162 FT long x 36 FT wide. See scope note 1.

Attic:

- A. Remove and replace in kind 4,305 SF of Wooden Floor 1in x 6 in x 20Ft (L) groove and tongue wood boards, 124 FT long x 34.66 FT wide.

Interior:

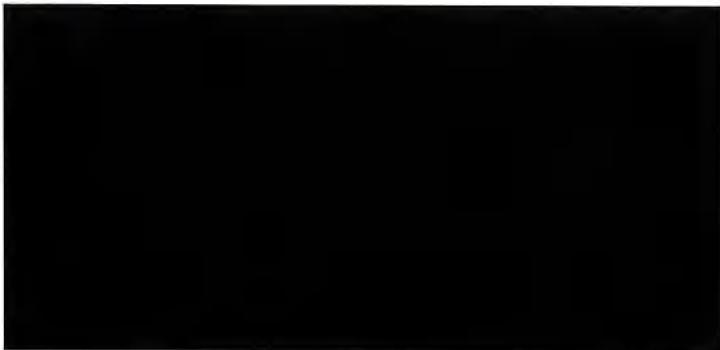
- A. Remove and replace in kind 4,305 SF of Fiber Minerals Acoustic Ceiling Tiles 2 Ft x 4 Ft, 124 FT long x 34.66 FT wide.
- B. Remove and replace 120 Fluorescent Ceiling Luminaires 120V 2 Ft x 4 Ft.
- C. Remove and replace in kind 4,305 SF of Vinyl Composition Floor Tiles 12 in x 12 in, 180 FT long x 34.66 FT wide.
- D. Remove and replace 4,305 SF of Fire Alarm System (15 rooms) w/smoke detectors, 180 FT long x 34.66 FT wide.
- E. Remove and replace in kind 9,970 SF of Gypsum Partition Walls, 1,173 FT long x 8.5 FT high.
- F. Remove and replace 16 Window installation type A/C 12,000 BTU.

- G. Remove and replace 4 JS4BD-060KB (208/230 volts) split unit 5 TON.
- H. Remove and replace in kind 3 cedar wood door with a 24in x 30in safety glass, frame and hardware, 36 IN wide x 84 IN high.
- I. Remove and replace 4,305 SF of Electrical Distribution System (Lighting and Power) , 124 FT long x 34.66 FT wide.
- J. Remove and replace 4,305 SF of Data-Telephone System , 124 FT long x 34.66 FT wide.
- K. Remove and replace in kind 1,186 LF long Vinyl cove base, 4 in.
- L. Remove and replace 1 wall exhaust fan 3ft x 3ft of 8,225 CFM.
- M. Remove and replace in kind 1 Wood Attic Space 178ft x 48ft.
- N. Remove and replace in kind 4,305 SF of Acoustic Suspension system Grid (Wall angles: 1,720 Ft (L), main tee, Cross Tee, Wire), 124 FT long x 34 FT wide.
- O. Remove and replace 5 Fluorescent Ceiling Luminaires 120V 2 Ft x 2 Ft.
- P. Prepare and paint in kind 8,896 SF of Latex Wall Paint, 1,046 FT long x 8.5 FT high.
- Q. Remove and replace in kind 5 Steel Solid metal doors 36in x 84in (w/frame, hinges, lockset).
- R. Remove and replace in kind 1 Steel Solid metal double doors 60in x 84in (w/frame, hinges, lockset).
- S. Remove and replace in kind 4 Steel Solid metal doors 36in x 84in with safety glass 24in x 30in (w/frame, hinges, lockset).

Contents:

- A. Remove and replace 2 Metal Ceiling fans with three blades and a lamp, 36-inch diameter.
- B. Replace 1 Mini Compact Refrigerator 4.4 Cu.
- C. Replace 7 Cherry-wood Round Table 60 in Diameter x 29 1/8 in Height.
- D. Replace 36 Vinyl Arm less Guest Reception Chair.
- E. Replace 4 each of Wooden U Shaped Executive Office Desk with Pedestal and Hutch in bark Oak, 95.5 in (D) x 65.98 in (W) x 66.5 in (H).
- F. Replace 1 Key Entry Box, Clay, 60 Key Capacity.
- G. Replace 18 Vinyl / Metal Seat Waiting Room Chair.
- H. Replace 20 Steel Vertical File Collection 4 Drawer Vertical File Cabinet , 26.5 in Deep Legal Width.
- I. Replace 1 Safe and Vault Store Pharmacy Safe 60 in (H) x 32 in (W) x 16 in (D).

Work to be Completed Total: \$2,279,471.37



406 HMP Scope

Hazard Mitigation Narrative

During the incident period of Sunday, September 17, 2017, through Wednesday, November 15, 2017, Hurricane Maria produced high velocity wind and prolonged periods of rainfall that severely affected this facility's envelope elements and subsequent, significant interior damages that includes but not limited to interior paint, doors, acoustic ceiling tiles, Gypsum Board, vinyl flooring, luminary, fire alarm system, electric distribution system, data system, telephone system, office furniture, medical devices , ceiling fans, wall/window A/C units , equipment. To prevent future similar damages the Sub- Recipient is proposing the implementation of the Wind Retrofit Mitigation to this facility.

The project is a compound for two buildings, one story each: Building A (D#143327) Administration/Warehouse with a roofing area approximately of 176'x 48.5'(8,536SF) and a Canopy connection (corrugated metal) of 85'x12'(1020 SF), an approximate total area of 9,556 SF of roofing, asphalt membrane roofing system. The building is made up of reinforced concrete/CMU walls with timber roof framing supporting metal roofing system and traditional operable aluminum jalousie windows, 19 damaged windows of a total of 43 windows, 3 ridge vents, 11 window A/C damaged. **Building B** (D#208992) Methadone Clinic with a footprint area approximately of 180'x 34.66' (6,238 SF). The building is made up of reinforced concrete/CMU walls with timber roof framing supporting metal roofing system and traditional operable aluminum jalousie windows 25 damaged windows of a total of 37 windows, 16l window A/C damaged. Both buildings have a historic relevance. The EHP Specialist has identified this building to date back to the early 20th Century (1900-1910). Disaster-related damages to the envelope include over 70% of the total roofing system, electrical, fire, mechanical and data communications system, 44 damaged windows of 80 total, no load path damages. An approximate interior damages for Building A exceeded \$700,000, and over \$600,000 for Building B due to high-speed winds, flood and water intrusion. The attached Appendix D for each damage: Case-by-Case Checklist includes details of the documented damages.

Prudent Use of Wind Retrofit

A case-by-case analysis was conducted for both facilities. Based on the extent of the damages, it was determined to be Prudent and Cost Effective the implementation of Non-Residential Hurricane Wind Retrofit Measures using Pre- Calculated Benefits. This mitigation is intended to retrofit envelope components including roof, openings, and load path to prevent future, similar damages to the envelope, thus, protect the building interior. Data analyzed for this determination include: DDD, PA SOW, BBA Survey Scope, A&E Report, photographs, site inspection reports among other related documents.

Damage #208992; CTIAM de Cayey-Building B

(I) Damages Description & Dimensions (DDD):

1. For a complete list of interior damages, as well as envelope damages, please refer to the project DDD document included in GM and Grants Portal."

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

To prevent or reduce future damages from similar events, the applicant proposed the following mitigation measures:

A Roof Mitigation: (Refer to WRF Calculator document for roofing details).

1. Replace PA SBS with a complete and reinforced SBS waterproofing on 6,238 SF of metal roof to prevent wind and water damages to the system itself and subsequent water intrusion that could cause interior damages.
2. Add 3 additional non-corrosive screws w/neoprene washers every 12 SF on 6,238 S.F. of damaged metal panels to reinforce fastening pattern thus protecting the building envelope.
3. Install 426 SF of non-corrosive metal L shape flashing along metal roof edges to prevent water infiltration through cracked

plaster.

EHP NOTES: L-shaped flashing will not be visible from the ground and will not affect the physical and visual aspect of the Historic Property façades.

- 4. 360 LF of galvanized steel gutters with gutter hangers to improve roof drainage capacity and prevent water damages.
- 5. Reinforce wood frame by installing 200 hurricane ties to strengthen roof elements connections and prevent future wind damages.

B. Openings Mitigation: Windows and Doors

Windows:

Note: 25 damaged windows impact resistant to be covered by PA SOW and Cost Estimate. BBA will replace 12 impact resistant windows. A total of 37 impact resistant windows will be covered by PA/BBA funds. Window count and measurements obtained from site visit and A&E report.

Doors:

- 1. Replace 14 Ea. Metal (3'x7') damaged exterior metal doors with wind, water and impact resistant doors of the same size and type to prevent flexure and displacement.
- 2. 14 Ea. Door-Weather Stripping will be added to prevent water intrusion, avoiding damages to interior finishes and content.
- 3. 560 L.F. of caulking to allow better adhesion to cement and prevent future water intrusion. Due to complexity, this measure was estimated based on standard 7' x 3' approx. Door. Perimeter of each door= 7 + 7 + 3 +3 = 20*2= 40 L.F. 10 doors x 40 L.F. = 560 L.F. of caulking

EHP NOTES: This is a Wind Retrofit Mitigation. For this mitigation the replacement of all windows and doors, damaged and undamaged, is required by policy to ensure the reinforcement of the building envelope as a system. Replace doors with wind, water and impact resistant units of the same size and type as the existing. This mitigation work must be done to match all physical and visual aspects of the original elements, including design, color, texture, hardware, profile, and workmanship. Should the Applicant decide not to meet these requirements then a revised scope of work must be submitted to FEMA for approval and additional EHP review.

C. Load path

- 1. No Load Path issues are addressed in this project.

(III) Hazard Mitigation Proposal (HMP) Cost(Building B)

Net Wind Retrofit Package (WRP) Cost = \$ 106,048.50

