

STATEMENT OF WORK  
FOR  
B3311 REPLACE ONE (1) AIR COOLED CHILLER



FEBRUARY 2023

PREPARED BY:

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## SCOPE OF WORK

### PART 1 – SCOPE OF WORK:

1.1 GENERAL: The work to be performed under this contract and in accordance with this Statement of Work (SOW) shall consist of furnishing, all necessary plant, labor, tools, transportation, supplies, supervision, equipment, materials, and incidentals necessary for providing all work shown in this SOW, and all applicable codes, regulations, standards, and criteria in effect at the date of solicitation. Contractor shall perform a site visit and ensure complete understanding of the project scope of work and shall provide a complete and usable system. This work shall consist of, but not be limited to the following:

Building 3311: Remove one (1) existing air cooled chiller. Provide and install one (1) new Trane® air cooled chiller and ancillary components. Remove one (1) existing Variable Frequency Drive (VFD). Provide and install one (1) new approved VFD. Provide and install one (1) new properly sized 3-pole transfer switch.

1.2 PROJECT DESCRIPTION: Contractor shall remove one (1) 170 ton existing air cooled Trane® chiller located inside the mechanical enclosure (North) of building 3311. The contractor shall be responsible for using an appropriately sized crane for the removal of the existing 170 ton chiller. Contractor shall be responsible for using an appropriately sized crane for installation of the new 170 ton chiller. Contractor shall modify the existing concrete pad to provide full support of the new chiller as necessary to comply with manufacturer's recommendations. Contractor shall remove existing VFD and provide and install one (1) new approved VFD equivalent to the one removed, and appropriately sized to operate the new chiller. Contractor shall provide and install one (1) properly sized 3-pole transfer switch to replace the existing service disconnect for the new chiller located in the mechanical enclosure. Contractor shall provide and install one (1) new auxiliary Tee connection on both the supply and return water lines (outside the chiller) to include isolation/butterfly valves and bolted blind flanges for auxiliary access to emergency/temporary chiller if and when needed in the future. Contractor shall provide and install any and all insulation and aluminum UV protective covering for all new and/or disturbed hydronic piping involved in the execution of the project. Contractor shall remove, retain, and re-install Energy Management Control System (EMCS) control wiring and materials for communication from chiller to 17 CES EMCS monitoring office. Contractor shall dispose of the existing chiller in accordance with paragraph 1.15. Any and all removed oil and refrigerant will be disposed of by the Contractor at a waste or recycle location in accordance with EPA, Federal, State, City, Country and local codes (see section 3 and 4 for specific details).

1.3 LOCATION: Goodfellow Air Force Base is located in Tom Green County, on the southeast side of San Angelo, Texas and is bounded to the north by Highway #388 (Paint Rock Rd.), to the west by Fort McKavitt Rd and Bell Street/Christoval Road, to the south by South Chadbourne St

(Hwy. 1223) and to the east by the eastern city limits. The street address for building 530 is: 154 Canberra St. West, Goodfellow AFB, TX 76908-4705.

**1.4 WORK AND MECHANICS:** The work for this project shall be executed in the best and most workmanlike manner, by qualified, trained and certified efficient mechanics/tradesmen, skilled in their respective trades. Certificated for certified mechanics/tradesmen shall be submitted as part of contractor proposal. At a minimum, contractor to perform the work shall possess a current Texas Air Conditioning License Class A (TACLA). Only certified journeymen in each respective trade, or apprentices under the direct supervision of certified journeymen, shall be permitted to install and/or supervise installation for this project. Contractor shall submit applicable journeymen certificates as part of contractor. Individual trade work for this project shall be performed and quality maintained by the applicable trade only. The Contractor shall assure that all trades coordinate their work with that of other trades. The Contractor shall coordinate and perform all operations in a manner that will result in a professional and expeditiously completed project. The work shall be in strict accordance with prevailing industry standards and manufacturer's instructions. Work and materials shall comply with this SOW and the editions in effect at the time of this solicitation for all applicable criteria, regulations, guidelines, and codes, all of which are made a part thereof.

**1.5 WORKING CONDITIONS:** The Contractor shall have **four hundred, seventy-five (475)** calendar days to perform all work. The Contractor shall submit product specifications for all new materials as part of the proposal. The Contracting Officer must approve materials before the Contractor makes any purchase. All Contractor operated/owned vehicles, equipment, tools, etc., shall be stored as prescribed in paragraph (1.13) DELIVERY, STORAGE, AND PARKING. Applicable traffic control signage where required by the contract shall remain overnight. Parking on turf shall not be permitted without prior approval by the Government.

**1.5.1 WORK SCHEDULE:** Working hours for the Contractor will normally be between the hours of 7:30 a.m. and 4:30 p.m. excluding Saturdays, Sundays, Federal Holidays, AETC Family Days.

AETC Family Days for calendar year 2022:

01 Jul 22; 02 Sep 22; 25 Nov 22; 23 Dec 22 and 30 Dec 22

AETC Family Days for calendar year 2023:

02 Jan 23; 26 May 23; 03 Jul 23; 01 Sep 23; 24 Nov 23; 22 Dec 23 and 29 Dec 23

Note: Dates above are subject to change.

The work to be performed on this project will include work in an occupied facility. The Contractor shall coordinate the work of all activities whereby both the Government and the Contractor can continue operations with the least possible interference and inconvenience. The Contractor shall conduct all work such that means of facility ingress and egress are maintained at all times. The Contractor shall be responsible for providing suitable, approved signs, barricades, roped barriers, etc., to warn occupants of hazardous areas at the job site for the duration of the contract at no additional cost to the Government. The Contractor shall submit their work schedule request to the Contracting Officer in writing as part of project proposal. If personnel are reasonably available, the Contracting Officer may authorize the Contractor to perform work during periods other than

normal duty hours/days. If such work is required Contractor shall submit request in writing to Contracting Officer a minimum of 72 hours in advance for Government approval.

1.5.2 WORK AREA ACCESS: Government personnel escorts are not needed for this SOW.

1.6 PHASING REQUIREMENTS: N/A

1.7 SAFETY: All Contractor operations shall be conducted and performed in accordance with Department of Labor, OSHA requirements found in Title 29 Volume 5 Subtitle B Chapter XVII 1910.120 and Volume 8 Subtitle B Chapter XVII 1926, and Air Force Occupational Safety & Health (AFOSH) AFOSH standards including AFMAN 91-203. The Contractor shall also ensure that all work is performed in accordance with project identified EPA, national standards, military manuals, instructions, pamphlets, standards, and handbooks, and with the latest edition in effect on the date of this solicitation of the Corps of Engineers (COE) Safety Manual EM 385-1-1. All job sites are subject to inspections by the Government, Department of Labor, and State of Texas. In the event of conflicts between the OSHA standards and these requirements, the most stringent shall apply.

1.7.1 All companies who conduct business within the State of Texas must, in accordance with Texas Worker's Compensation laws (Texas House Bill 62), have an approved company safety policy and an Accident Prevention Plan. The plan, approved by the Texas Worker's Compensation Commission (TWCC), shall be submitted For Information Only (FIO) in accordance with paragraph, SUBMITTALS (1.11). In addition to meeting the TWCC requirements; the plan must also include the requirements of COE Safety Manual EM 385-1-1.

1.7.2 Resolution of Department of Labor citations for violations of Occupational Safety and Health Standards is a Contractor responsibility and shall provide for no basis of a claim against the Government.

1.8 PROTECTION OF GOVERNMENT PROPERTY: The Contractor shall use reasonable care to avoid damaging existing trees, troopwalk, sidewalk, valve boxes, light poles, signs, curb & gutter, concrete pavement, and exterior of buildings, and equipment on the Government installation. If the Contractor fails to use reasonable care and causes damage to any of this property, the Contractor shall replace or repair the damage at no expense to the Government as recommended by Civil Engineering and approved by the Contracting Officer. If the Contractor fails or refuses to make such repair or replacement, the Contractor shall be liable for the cost, which may be deducted from the contract price.

1.9 SITE MAINTENANCE AND CLEANUP:

1.9.1 SITE MAINTENANCE: The Contractor shall protect adjacent property, buildings, and their contents from dust, dirt or other materials. Work areas shall be maintained in a neat, clean, and safe condition and shall, at a minimum, be cleaned at the end of each shift. All streets and roadways in/or adjacent to the site shall remain free of project generated dust, rock, dirt, trash and debris at all times.

1.9.2 DAILY CLEANING: The Contractor shall keep the site free from debris at all times and shall perform daily cleaning of all areas.

1.9.3 CLEANUP: The Contractor shall collect any and all trash, debris, refuse, garbage, etc., that is generated and place it in appropriate containers with lids or approved covers on a periodic basis or as directed by the Contracting Officer. The Contractor is not permitted to use installation dumpsters and other trash receptacles. The aforementioned materials shall be hauled from the site by appropriate means on a daily basis, unless otherwise approved by the Contracting Officer. Disposal shall be outside the limits of Government property. Disposal shall be by sanitary landfill or other approved methods and shall conform to all local, state, and federal guidelines, EPA criteria, and regulations. Upon completion of the work, the Contractor shall leave the work site and storage area(s) in a clean, neat, and workmanlike condition satisfactory to the Government.

1.9.4 CONTRACTOR DUMPSTERS: Should the Contractor require a dumpster it shall be at the Contractor's own expense. The location of the dumpster will be submitted for approval by the Contracting Officer and will be maintained to prevent overflow and spreading of construction debris caused by wind and other factors.

1.10 REFERENCES: All publications listed herein shall be the most current editions in effect at the time of solicitation and form a part of this Statement of Work. The publications are referred to in the text by basic designation only and include the following:

**Applicable Government Criteria and Standards:**

US Army Corps of Engineers (COE) Safety & Health Requirements Manual EM385-1-1

**Code of Federal Regulations (CFR):**

Title 16 Volume 2 Part 1000-1799 Consumer Product Safety Commission

Title 29 Volume 5 Subtitle B Chapter XVII Part 1910.120 Hazardous Waste Operations and Emergency Response

Title 29 Volume 8 Chapter XVII Subtitle B 1926 Safety and Health Regulations for Construction

Title 29 Volume 17 Chapter XVII Subtitle B 1910.252 Welding Cutting and Brazing

Title 40 Volume 9 Part 61, National Emissions Standard for Hazardous Air Pollutants

Title 40 Volume 18 Part 82 Protection of Stratospheric Ozone

Title 40 Volume 22 Part 117 Determination of Reportable Quantities for Hazardous Substances

Title 40 Volume 22 Part 122 EPA Administered Permit Programs: The National Pollutant Discharge Elimination System

Title 40 Volume 24, Part 170 Worker Protection Standard

Title 40 Volume 25, Part 247, Comprehensive Procurement Guideline for Products containing Recovered Material.

Title 40 Volumes 26 and 27, Parts 260 - 282 Solid Waste Regulations

Title 40 Volume 28, Part 302 Designation, Reportable Quantities, and Notification

**Resource Conservation and Recovery Act of 1976, as amended**  
**Environmental Protection Agency Publication (EPA)**

## **Environmental Laws**

AFI 32-7086

Clean Air Act (CAA) and all amendments

Clean Water Act (CWA) as amended

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

Emergency Planning and Community Right-To-Know Act (EPCRA)

Federal Water Pollution Control Act (FWPCA)

National Oil and Hazardous Substances Contingency Plan (NCP)

Occupational Health and Safety Act (OSHA)

Oil Pollution Act (OPA)

Pollution Prevention Act (PPA)

Resources Conservation and Recovery Act (RCRA)

Safe Drinking Water Act (SDWA), as amended

## **Air Force Occupational Safety & Health (AFOSH)**

AFMAN 91-203

## **International Plumbing Code**

## **NEC National Electric Code**

## **DOD Installations or Facilities – Standard Operating Procedure (SOP) – Contractor Hazardous Material Usage**

## **NFPA 101: Life Safety Code, National Fire Protection Association**

## **GOODFELLOW AFB CE 98-1 Base Standardization of Building/Utility Distribution Systems for GAFB**

## **AFI 32-2001 Air Force Fire Protection Program (Contact Fire Department if questions**

**325-645-3534)**

## **UFC 3-600-1 Fire Protection During Construction**

## **Texas Worker's Compensation Laws (Texas House Bill 62)**

1.11 WARRANTY: The Contractor shall identify all items being installed that are guaranteed or under an extended manufacturer warranty for more than a one-year period and provide validated copies of the manufacturer's warranty. All warranty information shall be filed by the Contractor in the Government's name. All warranties shall be identified by product with a listing of the name and address of the company and the expiration date of the guarantee or warranty. Warranty documentation shall be submitted to the Contracting Officer for Government Approval (GA).



1.12 DELIVERY, STORAGE AND PARKING: All equipment and materials delivered or stored shall be protected from the weather, humidity, and temperature variation, dirt and dust, and any other contaminants.

1.12.1 Contractor Parking & Storage: The Contractor shall submit a material and equipment storage area and for contractor parking layout for Government Approval (GA) before commencing of any work.

1.12.2 Storage Areas: The Contractor shall not work or store materials in a manner that would hinder or otherwise block pedestrian circulation to exit corridors and exit doors in the event of an emergency or fire. If space allows, materials may be stored at the job site as coordinated with and approved by the Contracting Officer before commencing of any work. Otherwise, materials shall be stored off Government property until ready for installation at no additional cost to the Government. In instances where on site storage is not available, the Contractor shall be responsible for storing and preparing materials in the manner specified herein, or by the manufacturer's instructions, so that materials are properly suited for installation. Off-site acclimatization of materials shall be at no additional cost to the Government. All project storage areas shall be kept free of debris, leaks, stains, or splashes and kept in a neat, clean, and safe condition. Any contamination of the storage area by a hazardous substance shall be immediately remediated by the Contractor, in accordance with PART 2.0 below at no additional expense to the Government. All other hazardous materials shall be secured when not in use.

### 1.13 UTILITY OUTAGES AND SPECIAL CONDITIONS:

1.13.1 PERMITS: Not required

1.13.1.1 Base Civil Engineer Work Clearance Request: The Contractor shall obtain and process AF Form 103 for approval prior to commencement of work for this project. The Contractor shall submit the completed AF IMT 103 to the Contracting Officer. Due to the requirement for multiple agencies to coordinate digging permit requests, it takes approximately fourteen (14) calendar days for processing of the paperwork. Contractor requests should be submitted at the earliest possible date to preclude delays. Contact 17 CES/CEOER Operations Engineering (325) 654-3434/3436 to begin the AF 103 process.

1.13.2 Utility Outages: When a utility outage is necessary to perform the contract work in a landscape area, regardless of whether the work area is occupied, the outage shall be performed by the Contractor during non-duty hours at no additional cost to the Government, unless otherwise approved by the Contracting Officer. The Contractor shall notify 17th Civil Engineer Squadron Service Call (325-654-3436) of outage requirements to include buildings affected; length of outage; and reasons for the outage. The Contractor must allow affected occupants a fourteen (14) calendar days' notice prior to outage. The Contractor is also required to provide the Contracting Officer written notification of the requested outage and must be approved by the Government.

1.13.3 Utilities Conservation: The Contractor shall instruct employees in utilities conservation practices. The Contractor shall be responsible for operating under conditions that preclude the waste of utilities, which shall include: Lights shall be used only in areas where and when work is actually being performed. The Contractor shall not adjust mechanical equipment controls for

heating, ventilation, and air conditioning systems. Water faucets or valves shall be turned off after the required usage has been accomplished. The Contractor shall not abuse the use of base telephones. Telephones shall be used for contract related issues only. The Contractor shall use good judgment in the conservation of Government utilities. Prevailing energy conservation practices shall be adhered to and enforced by the Contractor.

1.13.4 Base Fire Regulations: The Contractor shall comply with Air Force Fire Regulations as set forth in the latest edition of AFI 32-2001. The Contractor shall use no explosives in performing the work. All work shall be in strict compliance with NFPA-101.

1.13.4.1 Welding, Cutting, and Brazing: The Contractor shall contact 17 CES/CEFP (Fire Prevention) for a complete inspection of all welding, cutting, and brazing operations prior to any operation. The Contractor shall provide an appropriate operable fire extinguisher. Contractor shall comply with OSHA Standard 29 CFR 1910.252 Welding, Cutting, and Brazing (General Requirements) and AFOSH 91-5 Welding, Cutting, and Brazing. An AF Form 592 USAF Welding, Cutting and Brazing permit will be issued prior to any operation and shall be kept on site till completion of operation or permit expires. Contact Fire Prevention at (325) 654-3532/33/34 for issuance of permit.

1.14 DISPOSAL: Items to be included in the disposal shall consist of but not limited to the careful removal and disposition of materials. The Contractor shall recycle or divert wastes from landfill disposal to the maximum extent practicable. The Contractor shall track recycling and waste disposal and submit the report on the provided Waste Management Form for Government Approval (See Attachment 7: DoD Contractor's Guide) at the end of the project, and prior to final acceptance of the work. The Contractor shall, before commencement of any work, carefully survey the existing site to determine the extent of the work. The Contractor shall be responsible for the proper disposal of all materials meeting all rules pertaining to disposal. Rubbish and debris shall be removed from Government property daily, unless otherwise directed, to avoid accumulation at the site. Materials that cannot be removed daily shall be stored in areas specified by the Contracting Officer. In the interest of conservation, salvage shall be pursued to the maximum extent possible; salvaged items and materials shall be disposed of as specified. The use of Government dumpsters and trash collection is not permitted.

#### 1.15 SECURITY REQUIREMENTS:

1.15.1 Goodfellow Air Force Base is a closed/controlled access base. In an effort to minimize peak traffic flows at the entry gates, the Contractor, his employees, and his subcontractors are highly encouraged to avoid scheduling deliveries through the entry control gates from 7:00 A.M. to 8:00 A.M. Monday through Friday as there could be significant delays. Security requirements will be briefed at the pre-performance conference and handouts outlining specific requirements will be provided. Screening measures are in place and suitability for employees to access the installation will be determined during the conference. Requirements are subject to change dependent upon current world situations and potential threats. Contractor should anticipate certain notification and reporting requirements, preparation of forms and lists for pass and identification of employees and their vehicles, entry restrictions, key/lock control, and compliance with all base traffic rules and regulations.

1.15.2 Goodfellow AFB security may be viewed as being one of two broad levels, the level in effect being dependent on the location or area of project.

a. The lowest level of security exists in restricted access areas. These areas are all of Goodfellow AFB outside of the "USAF Controlled" areas.

b. "USAF Controlled" access areas are the higher-level security areas. Presence within these controlled access area is by authorization; and/or escort. The movement of authorized personnel in and out of these areas may be limited. Contractor personnel are permitted access to these areas on a need basis only. Access to controlled areas will require the Contractor to coordinate all requests through the Government organization occupying the project site. The Contractor is advised there may be delays gaining access to controlled areas. No delay less than one hour in duration will be considered for down time, nor will delays of less than one hour be cumulative over several time periods.

1.15.3 Referencing the above access areas, the work on this contract will typically be in restricted access areas.

1.15.4 Contractors shall comply at all times with base law enforcement and security requirements to include base pass requirements.

a. Contractor Installation Access Pass. Before arrival, a Government identification card-holding person from base contracting office will submit a request for base access using the wing's Base Access List (BAL) memorandum as a form of registration for each credential applicant. The Contracting Officer/Administrator and the Contractor should establish an accountability process to account for each applicant, to oversee the BAL process, and to retrieve installation passes when access is no longer required. The Contracting Officer/Administrator will ensure the BAL is accurate, signed, and forwarded to the 17 SFS Pass & Registration section for completion of the vetting and fitness determination processes.

b. Contractor Initial (and Periodic) Installation Access Screening. Contractors will provide Pass and Registration with two forms of identification. One of which, will be a state issued photo identification and must be the actual cards, no photocopies accepted. Driver's License and Identification Cards cannot contain the markings "Not Valid for Federal Purposes," "Not For Use as Federal Identification," "Federal Limits May Apply," or any other similar phrase. Employees with a Permanent Resident Card or Work Authorization Card must have the card in their possession. Photocopies will not be accepted. Prior to being allowed access, a minimum of a background/National Crime Information Center (NCIC) check will be completed on all contractors, requesting unescorted access for official business. The Contractor, then will be issued a temporary Defense Biometric Identification System (DBIDS) pass or AF Form 75A through the expiration date on the BAL request. Possession of an authorized access pass does not automatically authorize or guarantee access to the installation. The individual must still have a valid purpose to be on the installation and properly sponsored, as applicable.

c. Access Denial. If it is determined a Contractor requesting access has been convicted of a felony or pled guilty to a felony charge within the past 10 years, or is considered not fit to obtain authorized access based on the information obtained during the identity vetting, or criminal history

indicates the individual may present a threat to the good order, discipline, and morale of the installation, Security Forces personnel will deny entry. The contractor will be informed of the access denial, issued an Access Denial Letter, which will inform them on how to appeal this order.

d. For installation access on non-duty hours or down days:

1. Identify which workers require access on weekends, federal holidays/family days, and down days.
2. Ensure only workers that are already vetted are on the Extended-Hours request (no new personnel, new personnel require a new BAL, and formal vetting).
3. The Contracting Officer/Administrator will complete the "After Hours" BAL for workers requiring down day access to the installation.
4. The Contractor will identify any after-hours special vehicle requirements. If operations cannot support the search procedures for large vehicles/special purpose equipment, the request may be declined unless arrangements are made to deliver the vehicle/equipment prior, during normal duty hours.

## PART 2 – ENVIRONMENTAL REQUIREMENTS:

**2.1 COMPLIANCE WITH LAWS:** Construction activities are NOT exempt from air emission, storm water, hazardous waste, and other environmental compliance rules and regulations. The Contractor shall read Attachment 7: DoD Contractor's Guide, and fully comply and ensure that all Sub-Contractors comply with all applicable federal, state, and local laws, regulations, ordinances, and standards related to environmental matters. The Contractor shall also comply and ensure that all Sub-Contractors comply with all specific instructions or directions given to the Contractor by Goodfellow AFB regarding environmental matters.

**2.2 HAZARDOUS AND SPECIAL WASTES GENERATED BY THE CONTRACTOR:** The Contractor shall identify, characterize, containerize, store, and dispose of hazardous wastes in strict accordance with federal guidelines found in the Code of Federal Regulations, Title 40 Volume 26 and 27 parts 260-270, state regulation 30 TAC 335, all local guidelines, and as specified. A Uniform Hazardous Waste Manifest shall be used by the Contractor to document all parties and locations involved in the transportation, storage and disposal of all hazardous and special wastes. This form shall be provided to the Government by the Contractor and signed by the Base Environmental Engineer (17 CES/CEIE) before the waste is transported from the limits of Government property. A copy of the manifest shall be signed by the receiver of the waste and submitted to the Contracting Officer not later than forty-five days after disposal has taken place. Hazardous waste treatment, storage and disposal facility shall be located within in the state of Texas, permitted by the U.S. EPA, and approved by CEI.

**2.3 CONTRACTOR ENCOUNTERED HAZARDOUS WASTE:** The Contractor shall notify the Contracting Officer and 17 CES/CEIE upon encountering any material not identified in this SOW thought to be hazardous that could jeopardize the safety of workers or personnel in the area. The Government will be responsible for characterization, transportation, storage, and disposal of the waste if necessary.

2.4 ASBESTOS: To the best of the Government's knowledge, no asbestos-containing material (ACM) will be encountered during this project. Should the Contractor encounter previously unidentified or suspected ACM which must be disturbed to comply with the contract documents, the Contractor shall cease that work which would disturb the suspect material and shall immediately notify the Contracting Officer.

2.4.1 Asbestos Containing Building Materials: Under no circumstances, under the provisions of this contract, shall the Contractor be allowed to provide asbestos containing building materials, or products containing encapsulated asbestos or mineral fibers as defined in the Title 40 Volume 9 Part 61, National Emission Standards for Hazardous Air Pollutants, to GAFB. The Contractor shall provide a signed statement, accompanied by Safety Data Sheets (SDS) for project materials, from a licensed asbestos inspector or the project architect or engineer, proclaiming that no asbestos-containing building materials were used in the construction.

2.5 HAZARDOUS MATERIALS: The Contractor shall provide to the Contracting Officer an AF Form 3000, Material Approval Submittal, listing all materials to be utilized during the contract. If any of the material is classified as hazardous materials in accordance with regulations and AFI 32-7086, the Contractor will submit an installation Contractor Hazardous Materials Usage Tracking Form (Attachment 7: DoD Contractor's Guide) for all material items with all supporting information as required for approval. This is to ensure that all hazardous materials used on the installation is tracked at a level sufficient to ensure contractor compliance with local monitoring, determination, authorization, tracking, and to meet environmental reporting requirements and support fire protection, ESOH, and disaster response efforts. The Contractor must obtain authorization from the Contracting Officer prior to bringing or using any hazardous materials on the installation. The Contractor must supply up-to-date SDS for each requested items, that were listed as a hazardous material, as defined to be delivered under this contract. The hazardous materials shall be properly identified on the required request form and shall include any applicable identification number (such as part numbers, manufacturers name and any other special item number). This information shall also be included on the Safety Data Sheet submitted under this contract. The Contractor must maintain a file of all SDS. The Contractor shall submit for Government Approval (via AF Form 3000) to the Contracting Officer on a monthly basis, or at the end of the contract, as determined by the Contracting Officer, a Contractor Hazardous Materials Usage Tracking Form (2 copies) on the usage of all HAZMAT materials used within that reporting period. No chemicals, lubricants, oils, liquids or related materials shall be deposited in the refuse containers on base.

2.6 NUISANCE AND POLLUTING ACTIVITY PROHIBITED: Polluting, dumping, or discharging of any harmful, nuisance, or regulated materials (such as but not limited to concrete truck washout, vehicle maintenance fluids, residue from saw cutting operations, solid waste and hazardous substances) into building drains, site drains, streams, waterways, holding ponds or to the ground surface shall not be permitted and the Contractor shall be held responsible for any and all damages which may result. Further, the Contractor shall conduct work activities in such a fashion as to avoid creating any legal nuisance, including but not limited to, suppression of noise and dust, control of erosion, and implementation of other measures as necessary to minimize offsite impacts of work activities.

**2.7 RELEASE OF FLUIDS TO THE SANITARY SEWER SYSTEM:** Goodfellow AFB's sanitary sewer system discharges into the Publicly Owned Treatment Works (POTW) operated by the City of San Angelo, Texas. This POTW has established testing requirements for certain constituents as well as discharge limits of those same constituents. Accordingly, any Contractor performing work at Goodfellow AFB and contemplating a release of non-hazardous water into the sanitary sewer system shall meet the pretreatment standards and comply with the testing/release requirements established by the City of San Angelo. Contractor is also responsible for any and all testing, monitoring, measuring, documenting, etc. to prove compliance with it. Contractor shall not discharge wastewater to base's sanitary sewer without prior approval of the Government.

**2.8 AIR EMISSIONS:** The Contractor shall submit air emission reports For Information Only (FIO), monthly and upon completion of the project to the 17 CES/CEIE. See Attachment 7: DoD Contractor's Guide for forms or call 654-3299 for any questions.

**2.9 CONSTRUCTION WASTE MANAGEMENT:** At the end of the project, and prior to final acceptance, the Contractor shall submit a solid waste diversion report by completing the Construction Waste Management Form identifying the materials and weights either recycled or diverted from solid waste disposal to other re-use as well as weights of waste disposed in a landfill. Please see Attachment 7: DoD Contractor's Guide for forms or call 654-3299 for any questions.

**2.10 ENVIRONMENTAL MANAGEMENT SYSTEM:** Contractor's on site supervisory personnel shall complete EMS Awareness Training. The Installation Management Flight system administrator should be contacted at (325) 654-3299 for information and password to complete the 30-minute awareness training within 60 days of contract award or a new contract employee supervisor begins work. The training will be accomplished utilizing web-based training system called "The Environmental Awareness Course Hub (TEACH) available through any internet access at <http://usaf.learningbuilder.com>. User will have to register for an account, create a user id and password, and then take the EMS training. Certificate of completion must then be submitted to the Contracting Officer, and then forwarded to 17 CES/CEIE Environmental.

**2.11 GREEN PURCHASING:** Green Purchasing is a mandatory component of the Air Force pollution prevention program. The Under Secretary of Defense issued a policy memorandum "Establishment of the DoD Green Purchasing Program (GPP)" which states: "The DoD goal is to achieve 100% compliance with mandatory Federal GPP programs is all acquisition transactions." This document contains guidelines for implementing the RCRA, EO, DOD, and Air Force requirements.

**2.11.1 Applicable Environmental Regulations and Laws:**

The Resource Conservation and Recovery Act (RCRA), Section 6002 (42 U.S.C. 6962)

Title 40, Volume 25, Part 247, Comprehensive Procurement Guideline for Products containing Recovered Material.

Energy Policy Act (EPACT)

**2.11.2 Exemptions:**

2.11.2.1 EPA RECOMMENDATIONS: The U.S. EPA recommends minimum content levels for those items listed in the attached Construction Products Recovered Materials Form. These levels are mandatory for Air Force procurements unless one of the following exemptions applies:

1. The product is not available from a sufficient number of sources to maintain a satisfactory level of competition (i.e., available from two or more sources)
2. The product is not available within a reasonable period of time.
3. The product does not meet the performance standards in applicable specifications or fails to meet reasonable performance standards of the procuring agency.
4. The product is not available at a reasonable price. For Air Force purposes, “unreasonable price” is defined as follows: If the price of the recycled-content product exceeds the cost of a non-recycled item, then the price is considered unreasonable.

2.11.2.2 Contractor Responsibility: The Contractor shall complete the attached Construction Products - Recovered Materials Determination Form found in the Attachment 7: DoD Contractor’s Guide, with respect to the work and products being provided. Contractor shall provide written documentation when items not meeting the minimum content levels are used. This documentation shall be forwarded to the Contracting Officer via AF Form 3000 for Government Approval. In the event the documentation fails to support the Contractor’s findings, the Contracting Officer shall return the documentation to the Contractor citing the reason(s) for disapproval.

#### 2.11.3 EPA Designated Items:

2.11.3.1 A complete listing of the U.S. EPA-designated items can be obtained at the following website: <http://www.epa.gov/greenerproducts/recommendations-specifications-standards-and-ecolabels-federal-purchasing>. Also see: <https://sftool.gov/greenprocurement>. Not all of these materials may be required in the construction of this project. Please refer to the drawings and specifications. The attached Construction Products Recovered Materials Form shall be used to demonstrate compliance with the stated procurement requirements.

2.11.4 Intent: The intent of this section is to increase the use of GPP by all Contractors involved with this project.

2.11.4.1 The various sections of the specifications contain references to products to be used in the completion of this project. The listed product may or may not be manufactured from or contain recycled materials. Therefore, all Contractors, Sub-Contractors, equipment suppliers, and material suppliers are responsible for compliance with this specification and those items/products listed on the attached form. Recycled products shall be used wherever possible subject to the exemptions as per the paragraph (2.11.2) EXEMPTIONS.

2.11.5 Recycled or Recovered Products: Those materials identified on the form at the end of this section.

2.11.6 Sources of Information: The following is a partial list of sources of information for compliance with GPP requirements:

#### **Select Sources of Supply for Environmentally Preferable Products and Services**

- GSA: <http://www.gsa.gov/portal/content/105414>
- DLA: <http://www.dla.mil/WhatDLAOffers/EnvironmentalandSustainablePrograms.aspx>
- Energy Star®: <http://www.energystar.gov/>
- JWOD: [http://www.abilityone.gov/procurement\\_list/product\\_contractors.html](http://www.abilityone.gov/procurement_list/product_contractors.html)
- UNICOR: [http://www.unicor.gov/Shopping/viewCat\\_m.asp?iStore=UNI&idCategory=1633](http://www.unicor.gov/Shopping/viewCat_m.asp?iStore=UNI&idCategory=1633)
- EPA: <https://www.epa.gov/greenerproducts>

### **Green Procurement Program Product Listings**

- CPG: <https://www.epa.gov/greenerproducts>
- Bio based: <http://www.biopreferred.gov/BioPreferred/>
- FEMP: <http://energy.gov/eere/femp/federal-energy-management-program>
- Energy Star: [http://www.energystar.gov/index.cfm?fuseaction=find\\_a\\_product](http://www.energystar.gov/index.cfm?fuseaction=find_a_product)
- Alternatives to Ozone-Depleting Substances: <https://www.epa.gov/snap>
- For paints, carpet, office supplies, cleaners, and particle board: <http://www.greenseal.org/Home.aspx>
- For construction projects: <https://www.epa.gov/chemicals-under-tsca>

### **PART 3 – PRODUCTS:**

3.1 REFERENCES TO MATERIALS, MANUFACTURERS AND PRODUCTS: Materials and equipment shall be the standard products of a manufacturer or supplier regularly engaged in the manufacture of the products and shall essentially duplicate items that have been in satisfactory use for at least two years prior.

3.2 VERIFICATION OF DIMENSIONS AND CONDITIONS: The Contractor is highly encouraged to visit the premises to become thoroughly familiar with details of the work and working conditions. The Contractor is highly encouraged verify all dimensions/information and advise the Contracting Officer of any discrepancies prior to the work commencement.

3.3 GOVERNMENT FURNISHED EQUIPMENT (GFE): There are no GFE provided for this project.

3.4 CONTRACTOR PROVIDED MATERIALS (CPM): The Contractor shall provide all materials and shall comply with Goodfellow AFB Standards and the following project specific criteria. The Contractor shall install a TRANE chiller, no other brand will be accepted.

#### **a. TRANE® AIR COOLED CHILLERS:**

1. Provide and install new from factory one (1) air cooled Trane® chillers complete with Trane® “Lead/Lag” control capabilities. Chiller shall be a 170 ton screw type air cooled chiller. Include 120Volt outlet connections on each installed chiller.
2. Contractor shall provide correct voltage design for the building. Current service disconnect is 600 VAC 600 Amp, 460V/60Hz/3 Phase. The new Trane® chillers electrical specifications must be matched to the existing electric supply at the main service disconnect panel.
3. Contractor shall provide one (1) 600 Amp, 460V 3-pole transfer switch.



4. Contractor shall provide necessary electrical wiring, conduit, connections, and materials resulting in a durable and reliable power supply for each of the new Trane® chillers.
5. Contractor shall ensure new chiller shall be equipped with vibration/noise dampening features.
6. New Trane® chillers factory specification documentation will be submitted to the Contracting Officer as part of proposal.
7. Additional Chiller requirements/Ordering Information
  - a. Unit controller equipped with touch screen display.
  - b. Air cooled screw chiller – R134a refrigerant.
  - c. BACnet communication interface.
  - d. Two (2) refrigerant circuits – one compressor per circuit.
  - e. Variable speed condenser fans option.
  - f. Wye-delta closed transition starter.
  - g. Comfort cooling evaporator application – 40 degrees F to 60 degrees F leaving temperature.
  - h. Low ambient capability – 0 degree F to 115 degree F ambient.
  - i. Barrel freeze protection by two thermostatically controlled immersion heaters and two strip heaters for protection down to -20 degree F.
  - j. Architectural louvered panels.
  - k. Non-fused disconnect.
  - l. Factory installed flow switch.
  - m. Refrigerant isolation valves.
  - n. Programmable relays.
  - o. External leaving water and current limit set point option.
  - p. Remote leaving temperature and current set point.
  - q. Factory startup and pre-start inspection.
  - r. Factory 1<sup>st</sup> year parts, labor, and refrigerant warranty.
  - s. Factory 2<sup>nd</sup> thru 5<sup>th</sup> year replacement compressor parts warranty.

**b. VARIABLE FREQUENCY DRIVES FOR CHILLED WATER PUMPS:**

1. Contractor shall provide and install one (1) new approved (VFD) with matching bypass switches for existing chiller pump.
2. Contractor shall provide correct voltage design for the existing chill water pump. Current electrical service Heavy Duty Safety Switch is 30Amps, 250Volts DC with 600 Volts AC service disconnect.

**c. CHILLER ACCESSORIES:** The contractor shall provide and install all necessary equipment including but not limited to: electrical, heat strips, conduit and wiring, hydronic piping, valves, temperature and pressure gauges, protective insulation with mineral pipe spacers, piping stands, markings with type of water and direction arrows for piping, and aluminum UV (hail) jacketing for all exterior facility piping and wall penetrations.

**d. CONTROLS:** Contractor will retain and re-install all existing EMCS equipment and wiring to VFD and chiller.

- e. **START UP, TRAINING AND MANUALS:** The Contractor shall provide, schedule, and arrange for Trane® factory certified start-up. Contractor will provide operational, and maintenance training as recommended by the manufacturer, to train Government craftsmen and provide all operating, maintenance, and parts manuals instructions to include parts listings of equipment and other materials installed.
- f. **MATERIALS:** The contractor shall provide all equipment, tools, hardware/software and materials necessary to provide complete electrical, mechanical, and physical connections from the new equipment to the existing equipment and connections. Contractor shall provide an appropriately sized crane for the removal of the existing chillers and placement of new chiller.

#### PART 4 – EXECUTION:

4.1 **GENERAL:** All work shall be installed as shown and in accordance with the manufacturer's diagrams and instructions, unless otherwise specified. All dimensions are shown for information only. Contractor shall field verify all dimensions and site conditions. Contractor shall modify existing concrete pad according to the manufacturer's recommendations—if necessary—to provide full support to the new chiller footprint.

#### 4.2 **INSTALLATION:**

- a. Contractor shall ensure, prior to removal all power to Trane® chiller is offline.
- b. Contractor shall not install new Chiller until the new asset is in Contractor's possession and ready to install.
- c. Contractor shall ensure EMCS connections and equipment are disconnected. Retain existing EMCS wiring. Re-install after new chillers and piping installation.
- d. Contractor shall provide and install new pressure gauges, at supply and return chilled water lines.
- e. Contractor shall remove existing Trane® air cooled chiller, one (1) 170 ton and one (1) chill water pump VFD. Contractor will make any and all alterations to supply and return chill water pipe connections in order to properly install the chillers. Be advised, 17 CES HVAC Shop personnel will isolate the existing Trane® air cooled chiller and exterior piping for the Contractor. Contractor shall recover any encountered compressor oil and all encountered refrigerant from the existing Trane® system into Contractor owned equipment. The Contractor will document the amount of oil and refrigerant removed in the attached waste report (See Attachment 7: DoD Contractor's Guide).
- f. Contractor shall provide and install vibration/noise dampening elastomeric seismic isolators anchored to concrete pad—per manufacturer's recommendations—when mounting the new chiller on existing concrete pad.
- g. Contractor shall provide and install new from factory Trane® 170 ton air cooled chiller with correct voltage design for the building. The new Trane® chillers electrical specifications must be matched to the existing electric supply at the main service disconnect panel. Contractor shall provide all electrical components needed to provide a fully functioning HVAC system in

accordance with this Statement of Work. Electrical wiring, conduit, connections, and materials will provide durable and reliable electrical power to the new Trane® chillers. Contractor shall supply 120 Volt outlet on Trane® chiller for service equipment connections. Contractor shall provide and install two (1) comparably sized air cooled Trane® chiller. New electrical supply and materials will meet NEC and Goodfellow AFB CE 98-1 standards, and manufacturer's specifications.

- h. Contractor shall provide and install two (2) Approved VFD and matching bypass switches for the existing chill water pump. Contractor shall include all required electrical modifications necessary for the new VFD and Bypass switches for existing pump.
- i. Ensure all piping, valve, and port connections are durable and reliable and meet manufacturer's specifications.
- j. Contractor shall remove and replace the existing main service disconnect with (1) new Contractor supplied and installed (properly sized to support the new chiller electrical specifications) 3-pole transfer switch inside the enclosure. Not to be confused with TRANE factory installed, on board disconnect.
- k. Contractor shall supply and install any and all electrical components for a separate, secondary electrical circuit of appropriate voltage and amperage to the new chiller specifically for power supply to the chilled water piping, and heat trace/tape.
- l. Contractor shall ensure existing chilled water line supports and brackets provide stable permanent support for the piping. Additional or supplemental piping support will be installed to provide load bearing support throughout the exterior piping system inasmuch that no piping weight is exerted onto the chiller connections or piping unions if needed.
- m. Contractor shall supply and install one (1) new emergency tee connection in both the supply and return chilled water lines within the enclosure to include isolation/butterfly valves and bolted blind flanges.
- n. Ensure all piping, valve and port connections are durable and reliable and meet manufacturer's specifications.
- o. Any alterations or additions to the supply and return lines of the new chiller will be equipped with heat tape and all insulation requirements to be met per manufacturer recommendations. Contractor shall ensure all supply and return lines are insulated and protected to manufacturer's recommendations. Protection shall include, but not limited to, temperature and UV protection. As well as, all heat tape and aluminum shielding will be installed according to manufacturer's specifications.
- p. Contractor will notify 17 CES HVAC personnel when the new chiller and chilled water lines are ready to be re-opened.
- q. Contractor shall provide and demonstrate for 17 CES that the new chiller and equipment are fully complete, operational, and useable in accordance with this scope of work and factory recommended maintenance requirements.

4.3 FINAL INSPECTION: The Contractor shall advise the Contracting Officer in writing of the Contractor's desired final inspection date seven (7) calendar days in advance of that desired date to permit proper coordination. The date selected shall provide adequate time for Contractor performed corrections of final inspection deficiencies within the contract performance time. The Contracting Officer will be the final authority for determining whether or not the Contractor's performance is sufficiently advanced to warrant a final inspection.

END OF STATEMENT OF WORK