

ABBREVIATED STATEMENT OF WORK

FOR

**CONSTRUCT NEW FOB NORTH
and
EXPAND FOB SENTINEL SOUTH**



January, 2023

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Summary of Work -

FOB N1 – Construct New FOB North
FOB N2 - Construct UG Power Distribution
FOB N3 - Install Comm Ducts (Telecomm Requirements)

FOB S2 – New UG Power Distribution
FOB S3 - Storage Area Canopy
FOB S4 - Enclosed Training Facility, Modular Bldg.
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AF Form 66

Drawings – Technical Exhibits

**STATEMENT OF WORK
[SoW] FOR**

**CONSTRUCT NEW FOB NORTH
and
EXPAND FOB SENTINEL SOUTH**

January 2023

PART 1.0 – SCOPE OF WORK:

1.1 GENERAL: The work to be performed under this contract and in accordance with this Statement of Work and Drawings shall consist of furnishing all necessary parts, labor, tools, transportation, supplies, supervision, equipment, materials, and incidentals necessary for providing all work shown on the Statement of Work, Drawings (Technical Exhibits), and in accordance with the latest edition of all applicable codes, regulations, standards and criteria in effect at the date of solicitation. The work outlined herein shall consist of, but not be limited to the construction of the new Forward Operations Base (FOB) North and the expansion of Forward Operations Base (FOB) South on Goodfellow AFB.

AGENCY RELATIONSHIP: Tom Green County (TGC) has sole contract authority. 17th Civil Engineer Squadron (17 CES) Goodfellow AFB will serve in the role of providing contract coordination/monitoring but will not have any direct contract authority to approve or disapprove construction work. All contract correspondence shall be directly submitted to TGC contract representative.

1.2 LOCATION: Goodfellow Air Force Base is located in Tom Green County, on the southeast side of San Angelo, TX. 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 Highway #1223 (San Antonio Hwy.) and to the east by the eastern city limits. Work location is the existing Forward Operations Base (FOB) Sentinel training area as described on the plans.

1.3 PROJECT DESCRIPTION: The Contractor shall construct a new FOB North and expand the current FOB South training facility located on the Northeastern portion of Goodfellow Air Force Base (GAFB). The project provides a facility to allow greater range of joint mission partners and provide Expeditionary Readiness Training capabilities for all services located at GAFB, including Army, Air Force, Marines, Navy, and Space Force. Ref. Part 3.0 Execution for details and requirements of the project as described in this Statement of Work, attached Summaries and the Drawings.

1.4 SITE VISITS: The Contractor shall visit the site to become thoroughly familiar with details of the work and working conditions, verify dimensions in the field, and shall advise the TGC Contracting Officer of any discrepancies before starting the work.

1.5 WORK AND MECHANICS: The work for this project shall be executed in the best and most workmanlike manner, by qualified and efficient mechanics/tradesmen, skilled in their respective

trades. 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. Individual trade work for this project shall be performed and quality maintained by the applicable trade, only. All trades shall coordinate their work with that of other trades. The Contractor shall coordinate and perform all operations in a manner that shall result in a professional and expeditiously completed project. The Contractor shall provide items of work not specifically indicated, but obviously and/or normally required to complete and properly execute the work. The work shall be in strict accordance with prevailing industry standards and manufacturer's instructions. Work and materials shall comply with this Statement of Work, the Drawings and the editions in effect at the time of this solicitation for all applicable codes, criteria, regulations and guidelines, all of which shall be made a part of this SoW.

1.5.1 Project Superintendent/Alternate: The Contractor shall provide in submittal form personnel qualifications to be involved with this project. Project Superintendent shall have five years general construction experience, minimum; shall be a high school graduate or GED equivalent, minimum and having held the same position on 3 prior like projects of equal or greater complexity and construction costs, minimum. The Superintendent and/or the Alternate shall be available five [5] workdays per week, eight [8] hours per workday. The Superintendent's approved alternate shall meet the same criteria as the superintendent, shall be present and able to respond on the Superintendent's behalf when the Superintendent is not available.

1.6 TESTING LABORATORY: The Contractor shall employ and pay for services of an independent testing laboratory to perform specified services and testing. The testing laboratory shall meet "Recommended Requirements for Independent Laboratory Qualifications" published by the American Council of Independent Laboratories, meet basic requirements of ASTM E-329 and shall be currently licensed to operate in the State of Texas.

1.6.1 A minimum of at least one laboratory test for moisture-density relationship of the subgrade material and a minimum of at least one laboratory test for moisture-density relationship of the select base/fill material.

1.6.1.2 Specific tests and inspections shall be performed at each location as indicated in this SoW and the drawings.

1.6.1.3 The Contractor shall submit a Drinking Water Analysis Report and a "Drinking Water Customer Service Inspection checklist" via an AF Form 3000 for Government Approval. Contact Bioenvironmental Engineering at [325-654-3126](tel:325-654-3126) prior to restoring drinking water service.

1.6.1.4 Any other tests specifically required by other sections, herein.

1.7 WORKING CONDITIONS: The Contractor shall submit a Management Work Plan that fully describes the means to perform all work including but not limited to providing all equipment, tools, materials, supplies, transportation, supervision, management, proposed project schedules, work sequence plans, associated configurations for all demolition and new work including electrical, mechanical, plumbing, and communications infrastructure as described in this SoW and Drawings. The Contractor shall have two hundred twenty five [225] calendar days to

complete the entire project as outlined in this SoW and provided drawings. To include the Base Bids, 0001 FOB North, 0002 FOB South and Bid Options 0003 FOB North, 0004 FOB South. Base Bid and Bid Options shall run concurrently.

1.7.1 TRAFFIC PLAN: The Government anticipates that the work will be performed simultaneously in different locations of the project sites and in order to maintain a safe work environment, the Contractor shall submit a traffic and pedestrian plan showing pedestrian and traffic flow altered by construction/demolition and proposed alternate routing within 7 calendar days of each location for approval by TGC. TGC must approve this management plan before the Contractor can commence any construction/demolition work.

1.7.2 FIRST WORK: The first work performed by the Contractor and prior to starting demolition/construction operations shall be to fence in and secure the "Lay-Down" area utilizing, at a minimum, orange safety fence, or galvanized 6' chain link panels, in accordance with Contractor's staging plan. The fence shall always be maintained during demolition/construction and only be removed, with the TGC Contracting Officer's approval, at the conclusion of demolition/construction operations. The "Lay-Down" area shall be approved based on review of Contractor's proposed location.

1.7.3 STORAGE AREAS: There are no Goodfellow AFB furnished, covered or secure storage areas. Contractor's field office[s] and lay-down area[s] shall be at location[s] indicated on the Contractor proposed site plan. Site plan to be submitted through an AF 3000 for approval. Limited storage shall be permitted at the discretion of TGC and on a space-available basis. If the Contractor requires additional temporary field office, storage, and other construction buildings that are temporarily required in the performance of the work, the additional space shall require the written approval by the TGC Contracting Officer. Plans showing temporary field office, Contractor and Contractor worker parking, storage, and other construction buildings shall be submitted by the Contractor for Government Approval (GA). Electrical utilities are available within the project jobsite and shall be available for Contractor use. However, should the Contractor need/want service closer to each jobsite, it will be the responsibility of the Contractor to provide their own power station and to coordinate utility connections with the Government. Utility connection shall be the responsibility of the Contractor. Goodfellow AFB assumes no responsibility for lost or stolen materials, equipment, or tools, the security of which lies solely with the Contractor. Contractor shall keep their storage areas clean, neat, and orderly. Contractor shall mow grass and weedy vegetation when it reaches a height of 6 inches, maximum. Mowing shall be to a height of 3 inches. Mowing shall be accomplished with a rotary mower that leaves the clippings evenly distributed on the soil surface. Mowing shall be accomplished during periods and in a manner that the soil and grass shall not be damaged. Towed or self-propelled riding mowers shall not be operated within 3 feet of shrubs or trees. Contractor shall mow areas adjacent to shrubs and trees with hand propelled mowers. Temporary fencing used by the Contractor to delineate construction sites shall be securely anchored with tension wires and posts as required to prevent sagging and an unsightly appearance. Fencing shall be maintained by the Contractor in this manner throughout the duration of the contract. Due to high winds in west Texas, Contractor shall take every precaution to preclude trash and materials from blowing off site.

1.7.4 SITE USAGE: During the entire duration of this contract, Goodfellow AFB shall continue to use the remaining unaffected facilities and area to conduct mission essential training and day-to-day work. At all times, the Contractor shall exercise care to ensure safe construction activities while minimizing disturbances. The Contractor shall coordinate the work performance whereby both the Government and the Contractor shall continue operations with the least possible interference and inconvenience. The Contractor shall conduct all work such that means of facility/complex ingress and egress fire response routes, etc., are open and maintained at all times. The Contractor shall be responsible for providing suitable, approved temporary barricades, roped barriers, warning tape etc., to warn occupants of hazardous areas at the job site for the entire duration of the contract at no additional cost to the Government. Under no circumstances shall the Contractor block roads or access to the FOB Sentinel or any of its facilities.

1.7.5 OUTAGES: The Contractor, shall submit to 17 CES written notification regarding any and all utility outages 14 calendar days in advance of proposed outage.

1.8 CLEANING AND PROTECTION:

1.8.1 At the Contractor's expense and in accordance with all local, state and federal environmental laws and regulations all construction debris, trash, dirt, etc. shall be immediately removed daily and at no time will any construction debris and/or trash be allowed to be windblown throughout the FOB Sentinel compound. All areas shall be cleaned on a daily basis and required to maintain a professional appearance at all times.

1.8.2 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 daily basis or as directed by the TGC Contracting Officer's representative. The aforementioned material shall be hauled from the site by appropriate means on a daily basis, unless otherwise approved by the TGC representative. 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, 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 TGC representative. Restoration to the original contours is required unless otherwise directed by this SoW, the Drawings, or by the TGC Contracting Officer.

1.9 MEETINGS: During the performance of the entire project, weekly progress/coordination meetings between TGC, Government, and the Contractor shall occur. Meeting scheduling shall be determined by TGC during the pre-construction meeting. The Contractor shall record all meeting minutes and e-mail the TGC Contracting officer within 24 hours following the meeting.

1.10 WORK SCHEDULE: Workdays shall be from 0730 to 1630, Monday thru Friday; no weekend work allowed unless approved by the TGC Contracting Officer [Ref: 1.27 – 1.28].

1.11 WORK AREA ACCESS: Government escorts are not needed. The lowest level of security exists in general access areas and also applies to the FOB Sentinel.

1.12 CONCRETE TRUCKS: Cleaning out of concrete trucks on Goodfellow AFB is prohibited. Concrete truck chutes, only, may be rinsed at the construction site. Wastewater and concrete from this rinse shall be collected in a high-density polyethylene (HDPE) plastic-lined box or pit provided by the Contractor at the site. At the end of pouring operations, the Contractor shall excavate all the waste and liner and properly dispose of same. The Contractor shall dispose of all concrete debris to an authorized off base site and shall remove any and all concrete debris and residue at the end of the project at no additional cost to the Government. The pit shall be completely backfilled and the site restored to original conditions.

1.13 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:

INTERNATIONAL BUILDING CODE [IBC]

INTERNATIONAL FIRE CODE [IFC]

INTERNATIONAL ENERGY CONSERVATION CODE

NATIONAL ELECTRIC CODE [NEC]

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION [NEMA]

US ARMY CORPS OF ENGINEERS HEALTH AND SAFETY MANUAL EM 385-1-1

OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION (OSHA)

OSHA STD 29 CFR 1910 and 1926

OSHA STD 29 CFR 1910.252 Welding, Cutting and Brazing (General Requirements) AMERICAN

CONCRETE INSTITUTE [ACI]

AMERICAN COUNCIL OF INDEPENDENT LABORATORIES [ACIL]

AMERICAN INSTITUTE OF STEEL CONSTRUCTION [AISC]

AMERICAN IRON AND STEEL INSTITUTE [AISI]

AMERICAN SOCIETY FOR TESTING AND MATERIALS [ASTM]

AMERICAN SOCIETY OF CIVIL ENGINEERS [ASCE]

AMERICAN WELDING SOCIETY [AWS]

METAL BUILDING MANUFACTURES ASSOCIATION [MBMA]

MASTER PAINTER'S INSTITUTE [MPI]

SMACNA-02

Architectural Sheet Metal Manual

STEEL STRUCTURE PAINTING CODE [SSPC]

TEXAS DEPARTMENT OF TRANSPORTATION [TxDoT]

UNDERWRITERS LABORATORY [UL]

UL 580, Class90 Tests for Uplift Resistance of Roof Assemblies

1.14 SUBMITTALS: The Contractor shall provide submittals in the form of Manufacturer's Catalog Data, Certificates of Compliance and Samples for all items listed on the attached AF Form 66. The Contractor shall not be permitted to perform any work on site without approved submittals. The submittals listed on the attached AF Form 66 shall be required and shall be submitted for Government Approved (GA) or For Information Only (FIO). Use AF Form 3000 to process submittals. Submit four copies of submittals to TGC Contracting Officer. The Contractor shall be required to provide a DD Form 1354 Checklist by 15 May for FOB North pre-final and on or before the pre-final inspection of FOB South and submit to TGC Contracting Officer before final payment is issued.

1.14.1 MANUFACTURER'S CATALOG DATA: Data composed of catalog cuts, brochures, circulars, specifications and product data, and printed information in sufficient detail and scope to verify compliance with requirements of the contract documents. The Contractor shall provide the TGC Contracting officer with all manufacturer's installation and maintenance instructions for all products and equipment.

1.14.2 SAMPLES: The Contractor shall submit actual samples of items requested per the AF Form 66. To include available color samples for approval. No products or materials shall be installed until respective submittals have been approved.

1.14.3 CONTRACTOR'S WARRANTY: The Contractor shall warrant all equipment, materials and workmanship for a period of one [1] year after project completion. Any manufacturer and/or specified warranty that is for a period longer than the one [1] year Contractor warranty shall be so warranted. At a date one month prior to termination of the one [1] warranty, the Contractor and the Government shall review all installed equipment, materials and workmanship and the Contractor shall make repairs and/or replacements of defective warranty items.

1.14.4 MANUFACTURERS WARRANTIES: The Contractor shall identify all items being installed that are covered by manufacturers guarantee or warranty and provide validated copies

of such. The identification shall list the Government as holder of said warranties, the name of the company and the commencement and expiration date of the guarantee or warranty.

1.15 DELIVERY AND STORAGE: All equipment and materials delivered and placed in storage shall be stored with protection from the weather, humidity and temperature variation, dirt and dust, and any other contaminants and per the manufacturer's recommendations. Store all materials in a secure, clean and dry locations.

1.16 SAFETY: All Contractor operations shall be conducted and performed in accordance with Department of Labor, OSHA requirements found in 29 CFR 1910 (1910.146 and 1910.147) and 29 CFR 1926, and Air Force Occupational Safety & Health (AFOSH) standards including AFI 91-203, Air Force Consolidated Occupational Safety Instruction. The Contractor shall also ensure that all work is performed in accordance with project identified national standards, military manuals, instructions, pamphlets, standards, and handbooks. Engineers (COE) Safety Manual 385-1-1. All job sites are subject to inspections by the Department of Labor. In the event of conflicts between the OSHA standards and these requirements, the most stringent shall apply.

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

1.17 TEMPORARY FENCE: Prior to the start of any work for this project, the Contractor shall provide temporary orange warning fencing and/or clearly mark and identify each location the Contractor intends to perform work. Mission training will continue to be conducted during the entirety of the project. Any and all open trenches shall be clearly marked and at a minimum have orange barricade fencing surrounding the work site. At no time shall the open trenches be left unprotected or without safety measures in place. Signage depicting alternate routes shall be placed where work is being performed.

1.18 FIELD OFFICE: The Contractor shall maintain a clean, secure, weather-tight, temporary portable field office placed at the project sites with all required services during the duration of the project.

1.19 PORTABLE TOILETS: For the duration of this project, the Contractor shall provide and properly maintain portable toilet[s] for the use of all Contractor and sub-contractor personnel. The use of existing latrines is strictly prohibited.

1.20 CONSTRUCTION DOCUMENTS: The Contractor shall maintain a complete, current set of the construction documents and daily project log[s] in the field office at all times.

1.21 OPERATIONS SECURITY (OPSEC) REQUIREMENTS The purpose of OPSEC is to reduce the vulnerability of Air Force missions by eliminating or reducing successful adversary collection and exploitation of critical or sensitive information. OPSEC applies to all activities that prepare, sustain, or employ forces during all phases of operations. OPSEC is a process of identifying, analyzing and controlling critical and sensitive information indicating friendly actions associated with military operations and other activities to: 1) identify those

actions that can be observed by adversary intelligence systems; 2) determine what specific indications could be collected, analyzed, and interpreted to derive critical or sensitive information in time to be useful to adversaries; 3) select and execute measures that eliminate or reduce to an acceptable level the vulnerabilities of friendly actions to adversary exploitation. Organizations and personnel supporting the 17th Training Wing have OPSEC requirements associated with their activities and support. The Contractor shall comply with the 17th Training Wing OPSEC Program. During the construction contract pre-construction meeting further information shall be provided by the Government on the Goodfellow AFB OPSEC Program. The basis for the OPSEC program is AFI 10-701.

1.22 SPECIFIC OPSEC REQUIREMENTS:

1.22.1 Contractor personnel shall receive OPSEC Awareness Education and Duty-Related Training within 90 days of contract start date and annually thereafter.

1.22.2 OPSEC Awareness Education and Training shall be provided or coordinated through government channels.

1.22.3 The Contractor is susceptible to OPSEC assessments, surveys or any other evaluation tool available for the Wing OPSEC Program Manager or subordinate OPSEC Coordinator to use in order to gauge the effectiveness of the overall program.

1.24 UTILITY CONSERVATION: The Contractor shall be required to participate in government energy conservation programs. For the purpose of this contract, utilities such as water, electricity, etc., shall be furnished by the government at no cost to the Contractor. Long distance and Defense Switched Network (DSN) telephone services shall not be provided.

1.25 WORK SCHEDULE: Working hours for the Contractor shall normally be between the hours of 7:30 A.M. and 4:30 P.M. excluding Saturdays, Sundays, and Federal holidays. Refer to Section H of the solicitation/contract document for further information on working days. If the Contractor desires to work during periods other than above, a request must be made to the TGC Contracting Officer in writing four (4) calendar days in advance of the Contractor's intention. If the required base personnel are reasonably available, the TGC Contracting Officer may authorize the Contractor to perform work during periods other than normal duty hours/days.

1.26 NORMAL WORK HOURS: The Contractor shall schedule all work to occur between the hours of 7:30 AM and 4:30 PM, Monday through Friday, except on the Federal holidays and days designated as "Family Days" by Air Education and Training Command (AETC) as listed below. Permission to work outside these normal business hours may be granted by the TGC Contracting Officer. Requests to work outside the normal work hours must be submitted in writing to the TGC Contracting Officer at least 3 working days in advance of the date requested. The Contractor shall provide written notification to the TGC Contracting Officer fourteen (14) calendar days lead time for work schedule.

Federal Holiday Schedule			
		2023	2024
New Year's Day	01 January	Jan 2nd	Jan 1st
Martin Luther King's Day	3rd Monday in January	Jan 16th	Jan 15th
Presidents Day	3rd Monday in February	Feb 20th	Feb 19th
Memorial Day	Last Monday in May	May 29th	May 27th
Juneteenth	19 June	June 19th	June 19th
Independence Day	04 July	July 4th	July 4th
Labor Day	1st Monday in September	Sep 4th	Sep 2nd
Columbus Day	2nd Monday in October	Oct 9th	Oct 14th
Veterans Day	11 November	Nov 10th	Nov 11th
Thanksgiving Day	4th Thursday in November	Nov 23rd	Nov 28th
Christmas Day	25 December	Dec 25th	Dec 25th

1.26.1 While AETC Family Days have not been identified past calendar year 2023 it is anticipated that the same number of AETC Family days shall be declared each year.

1.26.2 Any Holiday falling on a Saturday shall be observed the preceding Friday. Any Holiday falling on a Sunday shall be observed the following Monday.

1.26.3 Goodfellow AFB could be closed because of security problems, adverse weather, or other events. Unless otherwise notified by the Government, the Contractor should monitor local television stations, radio stations, or Goodfellow's Facebook page for notification of a possible late opening or base closure. The Contractor may not receive any other form of notification of a base closure from the Government, unless contacted by the TGC Contracting Officer or the COR. The Contractor is responsible for notifying Contractor employees. Contractor(s) do not report when the base is closed due to security problems and/or adverse weather.

1.27 TOBACCO USE IN AETC FACILITIES: Contractors are advised that the Commander has placed restrictions on the smoking of tobacco products within AETC facilities. AFI 40-102, Tobacco Use in the Air Force, outlines the procedures used by the commander to control smoking in our facilities. Contractor employees and visitors are subject to the same restrictions as government personnel. Smoking is permitted only in designated smoking areas. Additional information, to include locations of designated smoking areas, shall be provided to the Contractor at the pre-performance conference.

1.28 BASE ACCESS SECURITY REQUIREMENTS: The Contractor shall comply at all times with base law enforcement and security requirements to include base pass requirements.

1.28.1 Contractor Installation Access Pass. Before arrival, a Government identification card-holding person from the sponsoring agency, 17th GAFB CES office/administrator or applicable local project manager shall submit a request for base access using the 17 Training Wing's Base Access List (BAL) memorandum as a form of registration for each credential applicant. The

base sponsor/sponsoring agency and the contracted management team 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. Base sponsors/sponsoring agencies or contract officers shall ensure the BAL is accurate, that it is signed and forwarded to the 17 SFS Pass & Registration section for completion of the vetting and fitness determination processes. The BAL should be delivered to Pass & Registration, located at the Visitor Control Center (VCC). When delivery is not possible, the BAL may be forwarded to Pass & Registration via a “.mil” email account located on Goodfellow AFB. The BAL shall include pertinent visitor information, reason for entry, frequency of entry, destination, times each day requiring entry, and duration of request.

1.28.2 Contractor Initial (and periodic) Installation Access Screening. The Contractor shall provide Pass and Registration with two forms of identification, one of which shall be a state issued photo identification. Prior to being allowed access, a minimum of a background/National Crime Information Center (NCIC) check shall be completed on all Contractors, requesting unescorted access for official business. This screening process shall validate the Contractor's suitability to visit Goodfellow and certify that the Contractor does not pose an increased threat to the base populace. The Contractor shall then 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.

1.28.3 Access Denial. If it is determined that 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 shall deny entry. The Contractor shall be informed of the access denial, shall be issued an Access Denial Letter, and shall be informed on how they may appeal this order.

1.28.4 Access Denial Appeal Process. When denied access, contract visitors shall be informed to report back their manager. If the contract worker and management are considering an appeal, it shall be submitted by letter to the 17 SFS Commander, within 30 days of access denial. The contract manager should first contact the military contract officer/administrator or on-base sponsor for additional guidance and clarification. The appeal may be delivered to the installation Visitor Control Section or mailed to Security Forces, addressed to 17 SFS/CC, 361 Apache Trail, Goodfellow AFB, 76908. The Contractor's appeal should discuss all facts and reasons to support rescinding access denial. The 17 TRW/CC shall approve/disapprove all appeals for entry.

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

1.28.6 Identify which workers need access on weekends, federal holidays/family days, and down days, where required.

1.28.7 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.

1.28.8 Complete the “After Hours” BAL for workers requiring down day access to the installation.

1.28.9 Identify the 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.

1.28.10 During the above-mentioned days, the Contract officering, contract representative sponsoring ID cardholder is required to be present during hours of the work request.

1.28.11 All BALs are accomplished each time employees or personnel change, not to exceed 180 days. Oversight for BAL updates and establishment of procedures to ensure Physical Access Control System (PACS) credentials and locally created access credentials from individuals who no longer require installation access is the responsibility of the TGC Contracting officer/contract administrator. When an employee (regardless of position) is no longer employed by the Contractor or Sub-Contractor all DBIDS passes shall be to be returned to the Contract Officer/Administrator or to the Visitor Control Center. If a local issued access credential/pass is not returned, the contract officer may withhold funds or the Installation Commander may consider permanent debarment to the installation. Immediate access denial may be initiated by Pass & Registration updating the DBIDS database until disposition of the DBIDS pass is resolved.

PART 2.0 – PRODUCTS:

2.1 REFERENCES TO MATERIALS, MANUFACTURERS AND PRODUCTS: Materials shall be the standard product of manufacturer’s regularly engaged in the manufacture of such products. All products, devices, equipment and materials shall be new and of the quality indicated herein. The products furnished shall be equal to, meet the quality of and specifications indicated herein and, on the drawings, minimum.

2.2 SITE VISITS: The Contractor shall visit the sites to become thoroughly familiar with details of the work and working conditions, verify dimensions in the field, and shall advise the TGC Contracting Officer of any discrepancies before starting the work.

2.3 ARCHITECTURAL PRODUCTS:

2.3.1 PAINT: Interior paint shall be urethane enamel in an eggshell finish. Interior wall color: Sherwin-Williams Duration SW-6119 Antique White or approved equal. Interior Trim Paint: SW7005 Pure White. Product and color chart submittal required.

2.3.2 FLOORING: Luxury Vinyl Plank (LVP): Contractor shall conform to ASTM f 1700-04, asbestos-free, floating/interlocking floor type. Flooring in any one continuous area shall have the same shade and pattern with a wood type finish. LVP should have coating to eliminate need

for wax, polishes, and harsh chemicals to help reduce maintenance costs. LVP should be hard wearing, providing for long lasting appearance in heavy commercial traffic environments.

Type: Luxury Vinyl Tiles (7" wide x 60" long) w/ 20 mil wear layer

Construction: 100% Waterproof Core

Underlayment: Attached cork

Installation: Floating, installed per manufacturer instructions

Manufacturer: CORETec Original "Gracious Oak", Sku:VV806 or approved equal.

2.3.3 TRANSITION STRIPS: Transition strips shall be used on all changes in flooring. Flooring transitions shall be of the same manufacturer and color of LVP provided, and shall be fastened to the subfloor in accordance with manufacturer recommendations. Contractor shall provide T-molding where flooring levels are of similar heights, and reducers where flooring levels differ. Installation of transitions shall be in accordance with manufacturer recommendations.

2.3.4 DOOR HARDWARE: Lever type locksets, latchsets, deadlocks and all components shall be from a single manufacturer. Lock cylinders shall be BEST seven (7) pins, key removable type cores. Product submittal required.

2.3.5 METAL THRESHOLDS: Exterior door thresholds shall be extruded aluminum and shall provide proper clearance and effective weatherstripping seal. Product submittal required.

2.3.6 WEATHERSEALS: Weatherseals shall consists of aluminum retainers and rubber inserts. Seals shall remain functional through all weather and temperature conditions. Product submittal required.

2.4 CAST-IN-PLACE Concrete Criteria [Provide a Design Mix submittal in accordance with the following criteria for approval prior to concrete work for this project]:

2.4.1 Concrete Slab on Grade: [Provide a engineered stamped concrete slab design]

- 3/4" maximum coarse aggregate.
- 28 day compressive strength of 3000 psi, minimum.
- Maximum water to cementitious material ratio of 0.53.
- Slump between 3" minimum and 4 1/2" maximum.
- Air Content between 2% minimum and 4% maximum.

2.4.1.1 Use of fly-ash and/or ground-granulated-blast-furnace-slag shall be limited to 20% substitution by weight of cement.

2.4.1.2 Addition of water to batched concrete at the job site shall be limited to circumstances when the workability of delivered concrete is insufficient for practical placement and all of the water allowed by the mix design has not been added at the start of mixing. In no case shall the specified water to cementitious material ratio or slump be exceeded. Before any concrete shall be placed from the batch, a slump test shall be performed. Under no circumstances shall water

be added to the concrete mixture after the slump test has been performed and the slump is within the specified limits indicated herein. Slump test shall be performed by an approved testing company with a standard slump cone in accordance with ASTM C-1611 recommendations.

2.4.1.3 Strength test cylinders shall be provided by Contractor by an approved testing agency on specimens that are representative of the work and which have been water soaked for at least 24 hours prior to testing. Specimens shall consist of not less than three-inch diameter cores or 3 inch cubes. A minimum of three [3] test cylinders shall be made for each pour, one each spaced at approximately the beginning, middle and near the end of each pour.

2.4.2 REINFORCING STEEL: The Contractor shall provide new billet steel reinforcing conforming to ASTM A-615, ACI-315 and ACI-318 Grade 60, minimum. All reinforcing shall be continuous unless indicated otherwise. Stagger splices. Provide dowels matching size and spacing of main reinforcement, where required. Product submittal required.

2.4.3 FORMWORK: Formwork shall be designed in accordance with the methodology of ACI 347R for anticipated loads, lateral pressure and stress. Form releasing agents shall be commercial formulations that shall not bond with, stain or adversely affect concrete surfaces. Forms shall be removed in a manner to prevent injury to the concrete and ensuring the complete safety of the structure. Formwork shall be removed when the concrete has attained sufficient strength to resist damage from the removal process, but not before 72 hours has elapsed minimum since the concrete placement.

2.4.4 WIRE TIES: The Contractor shall provide 6 inch - 16-gauge steel rebar tie-wire at reinforcing bar cross members and at overlapping ends of reinforcing bar.

2.5 EARTHWORK MATERIALS: Satisfactory materials include materials classified in ASTM D-2487 as GW, GP and SQ shall be free of trash, debris, roots other organic matter or stones larger than two inches in any dimension. Unsatisfactory materials include materials classified in ASTM D2487 as PT, OH, OL and any other materials not defined as satisfactory. Cohesionless and cohesive materials include materials classified in ASTM D2487 as GW, GP, SW, and SP. Cohesive materials include materials classified as GC, SC, ML, CL, MH and CH. Materials classified as GM and SM shall be identified as Cohesionless only when the fines are nonplastic. Rock shall consist of boulders measuring ½ cubic yard or more and materials that cannot be removed without systematic drilling and blasting such as rock material in ledges, bedded deposits, unstratified masses and conglomerate deposits and below ground concrete or masonry structures, exceeding 1.2 cubic yard in volume, except that pavements shall not be considered as rock. Unyielding materials shall consist of rock and gravelly soil with greater than two inches in any dimension. Unstable materials shall consist of materials too wet to provide support. Subgrade shall consist of existing scarified and compacted materials as indicated herein. Topsoil shall be approved, stockpiled, off-site material and/or any additional off-site locally representative humus containing material necessary. Topsoil shall be free from tree roots, stones, shale, parent and other materials that hinder grading, planting, plant growth and maintenance operations, and free from noxious and other objectionable weed seeds and toxic substances.

2.6 FLEXIBLE BASE MATERIAL: The Contractor shall provide an aggregate base of crushed limestone consisting of TxDoT Type A, Grade 1 limestone, compacted to 95% Standard Proctor Density within 2% points of the optimum moisture content. Material shall be placed in four-inch maximum lifts, below finish surface material. Compaction testing shall be provided in accordance with this SoW and submitted by the Contractor.

2.7 STEEL CANOPY: The Contractor shall provide a steel canopy structure at the Storage Area and Outdoor Training Awning as described on the drawings. The Contractor shall submit a shop drawing for TGC review and approval.

2.7.1 The canopy structure shall be a clear span, rigid frame with straight-shaft columns [no tapered columns], rectangular tubing framing beams comprised of a gable roof frame with a 2:12 roof slope, minimum, throughout. Canopy can be built on site. West Texas Steel, Mueller Metal Buildings, or approved equal for steel package.

2.7.2 ANCHOR BOLTS: The Contractor shall provide anchor bolts sized in accordance with ASTM F-1554 and pre-engineered metal building manufacturer directions. Anchor bolts shall be hot dipped galvanized with washer and nut, The Hillman Group or approved equal. The Contractor shall provide anchor bolt shop drawings specifying the size[s] and locations of anchor bolts as per the pre-engineered metal canopy requirements, coordinated with all foundation work and the drawings.

2.7.3 WELDING: Welding procedures, operator qualifications and welding quality standards shall be in accordance with the latest edition of the “American Welding Society Structural Welding Code.”

2.7.4 PAINTING: All steel canopy framing shall be prime painted as temporary protection against ordinary atmospheric conditions. Subsequent finish painting shall be in accordance with Master Paint Institute standards. Prior to painting, all steel shall be cleaned of loose rust, loose mill scale, dirt and other foreign material. The fabricator shall not sandblast, flame clean or pickle prior to painting. Factory cover all steel with one coat of red oxide primer paint formulated to equal or exceed the performance requirement of Federal Specification TT-P-636D, TT-P-664C and SSPC Paint-25.

2.7.4.1 All exposed framing shall be prime (red oxide), minimum one (1) coat, and painted with a minimum of two (2) coats of DTM paint. Sherwin Williams Uniflex Rust Inhibitive Metal Primer, Kelly Moore Red Oxide or approved equal. Metal paint, Sherwin Williams Direct to Metal, Kelly Moore Kel-Guard or approved equal. Both primer and paint shall be for an exterior application.

2.7.5 METAL ROOF PANELS: Provide R-Panel roof panels equal to Mueller Metal Buildings or approved equal. The Contractor shall provide Metal Roof System with a 5-year minimum Warranty for Non-Structural Metal Roofing System, 30-year minimum warranty on manufacturer's material finish, 20-year minimum warranty on manufacturer's material against rust and 20-year minimum weather-tightness warranty. The metal roof panels shall be Aluminum-Zinc alloy coated [AZ-50 Galvalume] steel sheet, 26-gauge, ASTM A-792, Grade

40, Yield Strength 40 KSI, minimum, with seams at 36" O.C. The panels shall have a hail resistance of U.L. Class-4 Rating, shall be fire resistant, and have a minimum U.L. 90 wind resistance. Reference locations and colors on the drawings. Color sample shall be provided by the Contractor via product submittal.

2.7.5.1 METAL PANEL ACCESSORIES: All trim accessories shall be of the same composition as the metal roof panels, the model/type as indicated on the drawings and of the color indicated in the drawings. Screw head color for all attachments shall match the color of the surface to which they are attached, throughout.

2.7.5.2 All roof panels accessories and fasteners shall be from a single manufacturer.

2.7.6 SEALING TAPE: The Contractor shall provide butyl sealing tape for metal roof panels applied in accordance with the manufacturer's recommendations.

2.8 ELECTRICAL REQUIREMENTS:

2.8.1 ELECTRICAL: All electrical installation and components shall comply, be sized and installed in accordance with the National Electric Code. Provide power, panel boards, lighting fixtures, lamps, raceways, appropriate volt wire and cable, wiring devices, device plates, devices, pull and junction boxes, safety switches, lighting and fan controls, circuit breakers, fuses, identification [nameplates, where required] wire and cable terminations and connections to individual units of equipment as required and where indicated on the drawings. All wiring devices shall be U.L. listed, commercial specification grade, Switches shall be of appropriate size and rating. Standard receptacles shall be commercial grade, duplex, grounding type, in NEMA configurations. Switches in the same location shall be ganged behind a single plate. Provide metal waterproof outlet covers at all duplex outlets. Product submittal required. Electrical panel manufacturers are Square D, Eaton, Schneider, or approved equal. Switch and receptacle manufacturers are Hubbell, GE, Leviton, or approved equal.

2.8.2 CONDUIT AND FITTINGS: Conduit permitted shall be Rigid Galvanized, EMT or PVC. Conduit Types utilized shall be run only as permitted per code. All wiring shall be run in conduit. Conduit placed in concrete or run underground shall be rigid galvanized conduit or PVC. Conduit exposed or run-in walls above grade shall be rigid or EMT. All conduit bends shall be free from dents and kinks. All conduits shall be electrically continuous from the service equipment to all outlets and shall be secured to all metal boxes with one lock nut outside, and one inside the box with a reinforced bakelite bushing. Leave a polypropylene pull string in all empty conduits. Product submittal required. Conduit manufactures are Western Tube, Allied Tube, Republic Conduit, or approved equal.

2.8.3 WIRE AND CABLE: All wire and cables shall be U.L. listed and labeled and conform with applicable standards of U.L., NEMA, Federal Specifications and all other applicable industry standards. Connectors and Lugs shall meet U.L. Publication 486. All branch circuit wiring shall be appropriate size and type for application being used. No sharing of neutrals and provide a separate ground. Product submittal required. Wire and cable manufacturers are American Wire Group, Southwire, Lapp Tannehill, or approved equal

2.8.3.1 Before energizing any equipment, verify that the correct power supply voltage, ampacity and phasing has been provided at the load side of the disconnect.

2.8.3.2 Canopy Lighting: Canopy Lighting shall be vandal proof vapor tight LED light fixtures located in the quantities indicated on the drawings. Fixtures should provide a minimum 6000 lumens for outdoor training. Product submittal required. Lighting manufacturers are Acuity, Hubbell, US LED, or approved equal.

2.9 CHAIN-LINK FENCE AND GATES: New galvanized chain-link fence, fence posts, top rails, post bracing, razor/concertina wire, gate material and accessories.

2.9.1 Galvanized chain-link fence shall be 10'-0" layout and 6'-0" height as indicated on the drawings. Chain Link mesh shall be 9 gauge, 2" mesh, Class II with top edge knuckled and bottom edge twisted. All posts shall be round, cold-rolled, electric-resistance welded steel pipe in accordance with ASTM F-1043, Materials design group IC, WT-40 pipe, minimum steel yield strength 50000 psi. Type B external coating. End, Corner and Pull Posts shall be 2 7/8" O.D. pipe, weighing 3.26 lbs. per linear foot. Line posts shall be 2 1/2" O.D. pipe weighing 2.32 lbs. per linear foot. All line posts shall be spaced at 10'-0" O.C., maximum. Gate posts shall be 2 7/8" O.D., 3.26 lbs. per linear foot. Top Rail shall be 1 5/8" O.D. pipe weighing 1.43 lbs. per linear foot. Post Bracing Assembly shall be 1.66" O.D. pipe weighing 2.27 lbs. per linear foot. 3/8" diameter rod with adjustable take-up. Wire Ties shall be 9-gauge, Class II steel ties for tubular posts spaced at 2'-0" O.C., maximum, throughout. Tension wire shall be 7-gauge wire complying with ASTM A-824 metallic coated marcelled tension wire in accordance with ASTM A-817. Gates shall be 2" O.D. pipe weighing 1.75 lbs. per linear foot. Set in concrete. Provide locking device and padlock eyes as integral part of latch, requiring one padlock for locking gate leaves. Provide keepers for all gates. Finish for all fence components, mesh and materials shall be heavy galvanized 2.0 ounce per square foot complying with ASTM A-392. Product submittal required.

Sliding gates must have all entry-exit points secured with a heavy-duty sliding steel, iron, or heavily braced chain link gate equipped with a heavy locking device. Follow the requirement of ASTM F1184 for sliding gates. Single Wheel-Supported Sliding Gate. Single wheel supported sliding gates do not have an opening distance restriction.

2.10 PLUMBING REQUIREMENT:

2.10.1 WATER FILTER SYSTEM: All plumbing installation and components shall comply, be sized and installed in accordance with the most current version plumbing codes. Product submittal required. Filter system manufacturers are Scotsman, Ice-O-Matic, or approved equal.

PART 3.0 – EXECUTION:

3.1 GENERAL: All work shall be performed as indicated in this SoW, the drawings and in accordance with the manufacturer's diagrams, instructions and recommendations, unless otherwise specified. The Contractor shall field verify all dimensions and site conditions prior to

commencement of any work for this project. Price increase adjustments to the original contract price shall not be issued because the Contractor was not aware of existing conditions. The Contractor shall provide all labor, materials, tools and equipment required to perform all preparation, demolition, disassembly, repairs, construction, installations and re-assembly as listed in this statement of work and the drawings.

3.2 DEMOLITION: The Contractor shall demolish and dispose of all items in accordance with this SoW and as indicated on the drawings. The Contractor shall recycle or divert construction waste from landfill disposal to the maximum extent practicable. The Contractor shall track recycling and waste disposal and submit the report on the provided Construction Waste Management Form for Government Approval at the end of the project, and prior to final acceptance of the work. During demolition, the Contractor shall take all necessary precautions to prevent damage to existing property to remain in place. Any damage to the aforementioned shall be repaired and/or replaced by the Contractor at no additional cost to the Government.

3.3 SITE EXCAVATION: Strip topsoil and excavate regardless of material encountered, within the designated limits to the depth[s] indicated in the drawings. Select fill material excavated shall be transported to and placed in fill areas within the limits of the work. All unsatisfactory material including any soil which is disturbed by the Contractor's operations or softened due to exposure to the elements and water and surplus material shall be removed from the base. In no circumstance shall dumping of unsatisfactory material be allowed on base. In the event that it is necessary to remove unsatisfactory material to a depth greater than specified, the TGC Contracting Officer shall be notified. Unsatisfactory material excavated below the grade shown and replaced with satisfactory material as directed shall be at no additional cost to the Government. Excavations carried below the depths indicated, without specific directions, shall, except as otherwise specified, be refilled to the proper grade with satisfactory material as directed. All additional work of this nature shall be at the Contractor's expense. Excavation and filling shall be performed in a manner and sequence that will provide drainage at all times. Excavations shall be kept free from water while work therein is in progress. Material required for fills in excess of that produced by excavation within the grading limits shall be obtained from borrow areas. Dispose of all materials in accordance with Part 5.0.

3.4 PREPARATION OF GROUND SURFACE FOR FILL: All vegetation, such as roots, brush, heavy sods, heavy growth of grass, and all decayed vegetable matter, rubbish, and other unsatisfactory material within the area upon which fill is to be placed, shall be stripped or otherwise removed before the fill is started. In no case will unsatisfactory material remain in or under the fill area. Sloped ground surfaces steeper than one vertical to three horizontal on which fill is to be placed shall be plowed, stepped, or broken up, as directed, in such manner that the fill material will bond with the existing surface. Prepared surfaces on which compacted fill is to be placed shall be wetted or dried as may be required to obtain the specified moisture content and density.

3.5 Provide sensor tape in all utility trenches in accordance with this SoW and the drawings.

3.6 BACKFILL: Place no backfill until work to be covered has been approved. Material shall be free of debris and vegetation, preferably approved excavated material. Place lifts and compact in accordance with this SoW and the drawings.

3.7 GRADING: Maintain a positive slope away from structures in all directions and as indicated on the drawings. The entire construction area shall be graded to drain water off-site into the established drainage ways. There shall be no area of ponding water in the construction area. The surface upon completion shall be smooth and in conformity with the sections and grades indicated on the drawings.

3.8 TOPSOIL PREPARATION: On areas to receive topsoil, the compacted subgrade soil shall be scarified to a depth of two inches for bonding of topsoil with subsoil.

3.9 UTILITIES: Protect all utilities at all times. The Contractor shall immediately notify TGC and the Government for any disruptions to any utilities within the project SoW and drawings.

3.10 TESTING: Provide testing in accordance with this SoW.

3.11 WELDING, CUTTING, AND BRAZING: Fire Protection personnel will perform a complete inspection of all welding, cutting and brazing operations prior to any operation. The Contractor shall provide the appropriate operable fire extinguisher[s]. The Contractor shall comply with American Welding Society AWI D1.1, OSHA STD29 CFR 1910.252 Welding, Cutting and Brazing (General Requirements) and AFOSH 91-5 Welding, Cutting and Brazing. Air Force Form 592 USAF Welding, Cutting and Brazing permit shall be issued prior to any operation and shall be kept on site until completion of operation or permit expires. Contact Fire Protection at (325) 654-3532/33/34 for issuance of permit. Welding shall be performed by currently AWS certified welders and shall comply with AWS standards. The Contractor's welders shall produce current certification documentation upon request.

3.12 MAINTENANCE GRADES AND EROSION REPAIR: It shall be the responsibility of the Contractor to maintain the established grades of all access roads at FOB Sentinel. Any damage to the existing roadways surface from Contractor's operations shall be promptly repaired. In the event erosion or ponding occurs from either watering operations or from rainfall, such damage shall be promptly repaired. Ruts, ridges, tracks, and other surface irregularities shall be corrected and inspected where required, prior to acceptance. The Contractor shall take necessary measures during the construction period to control eroded soil or any foreign substance from entering and drainage or waterway where necessary.

3.13 CLEANUP: The Contractor shall collect any and all trash, debris, refuse, garbage, etc., that is generate and place it in appropriate containers with lids or approved covers on a daily basis or as directed by the TGC Contracting Officer's representative. The aforementioned materials shall be hauled from the site by appropriate means on a daily basis, unless otherwise approved by the TGC Contracting Officer's representative. 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, 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 TGC Contracting Officer. It is anticipated that excavation, filling, and plowing of roadways shall be required to restore the area to near natural conditions that shall permit the growth of vegetation thereon. Restoration to original contours is required unless otherwise directed by the TGC Contracting Officer.

3.14 FINAL INSPECTION: The Contractor shall be responsible for requesting a final inspection from TGC. At the contract final inspection, there shall be a joint Government (Goodfellow AFB & TGC) Contractor inspection to include operational testing of all building systems including electrical, mechanical, and plumbing to ensure all systems are operable.

3.15 AS-BUILT DRAWINGS: Following the project completion or turnover, within 14 calendar days the Contractor shall furnish 2 redline sets, in AutoCAD v18 or better, form, of mark up as built drawings to the TGC Contracting Officer. The statement “As-Built” and date shall be clearly marked at the lower right-hand corner of each drawing sheet.

PART 4.0 – UTILITY OUTAGES AND SPECIAL CONDITIONS:

4.1 BASE CIVIL ENGINEERING 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 have this approved form on the job site at all times.

4.1.1 Due to the requirement for multiple agencies to coordinate on these requests, expect 7 – 10 days for paperwork processing. Contractor requests should be submitted at the earliest possible date to preclude delays.

4.3 LOCKOUT/TAGOUT, HAZARDOUS ENERGY CONTROL: In addition to the requirements in OSHA Std. 1910.147, if a Contractor needs to lock or tag something out, the Contractor shall ensure that affected employees are notified before and after the locks and tags are used.

4.4 CONFINED SPACE: In accordance With Air Force Occupational Safety & Health Standard. 91-25, Ch. 7, the organization shall coordinate with the Contractor regarding with the following when the Contractor enters a confined space.

PART 5.0 - ENVIRONMENTAL REQUIREMENTS:

Refer to attached, Section 1400 - Environmental Protection

PART 6.0 - SITE MAINTENANCE AND CLEANUP:

6.1 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, 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 trash and debris at all times.

PART 7.0 - ENERGY CONSERVATION:

7.1 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 use good judgment in the conservation of Government utilities. Prevailing energy conservation practices shall be adhered to and enforced by the Contractor.

PART 8.0 – RESPONSIBILITY:

8.1 The above 1 through 7 summaries shall not in any way limit the responsibility of the Contractor to perform all work and furnish all plant, labor, and materials required by this Statement of Work.

PART 9.0 – STORAGE AND PARKING:

9.1 CONTRACTOR STORAGE: The TGC Contracting Officer’s representative shall designate Contractor storage and parking area. 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 5.0 above at no additional expense to the Government. All hazardous materials shall be secured when not in use.

PART 10.0 - COMPLETION OF WORK:

10.1 OPERATIONAL SYSTEMS: The Contractor shall insure that work for this project is performed in accordance with the criteria herein and that all equipment and systems shall be fully operational at the completion of work for this project.

END OF STATEMENT OF WORK

Construct New FOB North

Summary

- FOB N1 – Construct New FOB North
- FOB N2 – Construct UG Power Distribution
- FOB N3 – Install Communications Ducts

Summary – FOB N1

Construct New FOB North

Construct New FOB North

- The Contractor shall strip existing vegetation, to include stump removal of shrubbery, and topsoil to depth of 8"-10" below grade.
- The Contractor shall remove and dispose of all debris and unused excavated materials from jobsite.
- The Contractor shall compact the existing sub-grade to a minimum of 90% density before installing the base material.
- The Contractor shall install a new 100' x 180' x 12" compacted base pad.
- Pad to be placed in a minimum of (2) two base material lifts. First lift shall be compacted to 95% density before placement of next lift. Second lift shall be compacted to a minimum 95% density. Testing is required
- The Contractor shall crown the pad at a minimum 1% grade to allow for drainage away from personnel structures.
- The Contractor shall provide test reports from testing lab.
- The Contractor shall be responsible for verifying existing conditions, dimensions, and equipment prior to start of work.
- Refer to drawing set for additional details.

Summary – FOB N2

Construct New FOB North

Construct UG Power Distribution

- 1 The Contractor shall provide a new secondary electrical service from the existing pole mounted meter to the new AF FOB location.
- 2 The Contractor shall provide a new electrical service stand. Stand post shall be galvanized and a minimum 3” in diameter and placed at 48” in depth and shall be encased in concrete.
- 3 The Contractor shall ensure that all items to and from the existing meter are sized appropriately. To include, MDP stand, MDP, conduits, wires, smart meter, disconnects, breakers, and accessories needed for the new equipment and shall follow all code requirements as outlined in the most current NEC code book. Refer to Site Plan for location of new panel.
- 4 The Contractor shall provide two (2) new 400a panels with main circuit breakers and panel directory for the new electrical runs.
- 5 The Contractor shall trench, to a depth of 36”, from the new electrical distribution location, for new electrical conduits to each terminating location as indicated on the provided dwgs.
- 6 The Contractor shall provide new underground electrical service runs to each location shown on the drawings. To include sub panel pedestals, conduit, wire, sub panels, and all accessories necessary to have a complete functioning system.
- 7 The Contractor shall make final connections at each location.
- 8 The Contractor shall, only after an approved visual inspection by GAFB inspectors, backfill all open trenches. Backfill/bedding material shall be pea gravel or sand. There shall be 3” of material beneath and to side of the conduit and a minimum of 6” of material above the conduit.
- 9 The Contractor shall provide detectable tape 12” above buried conduit.
- 10 The Contractor shall provide material/product submittals for review.
- 11 The Contractor shall ensure all electrical devices, i.e., disconnects, breakers, switches, and receptacles are in approved NEMA weathertight enclosures and in proper working order.
- 12 The Contractor shall provide material/product submittals for review.
- 13 The Contractor shall be responsible for verifying existing conditions, dimensions, and equipment prior to start of work.
- 14 Refer to drawing set for additional and details.

FOB N3

STATEMENT of OBJECTIVES (SoO)

For

CONSTRUCT NEW FOB NORTH

**INSTALL COMM DUCTS
(TELECOMM REQUIREMENT)**

at GOODFELLOW AFB, TX

19 January 2023

Prepared By 17 CS SCXP

328 Ft. Lancaster

GAFB, TX 73145-2713

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1. SCOPE

This SOW defines the requirement for the Contractor to engineer, furnish, install and test (EFI&T) single mode (SM) fiber optic cable (FOC), conduit, and geo-textile fabric innerduct to new FOB North, Building's 1 and 2.. Inside Plant wiring will also be included at site. The Contractor shall provide all equipment, tools, materials, supplies, transportation, labor, supervision, management, and other incidentals necessary to meet the requirements as stated in this SOO. All electronics equipment, supplies, and materials to be installed shall be new and not refurbished.

2. REQUIREMENTS

2.1. GENERAL REQUIREMENTS

2.1.1. Safety Requirements

The contractor shall remain in compliance with all Federal, State, and base security and safety laws, regulations, policies, and requirements.

2.1.1.1 Contractor Safety Standard Expectation

The Contractor will comply with all applicable OSHA and Air Force Safety Standards.

2.1.1.2 Base Fire Regulations

The Contractor shall perform all work in strict compliance with all National Fire Codes. The Contractor shall use no explosives in performing the work. Any hot work to be performed i.e. welding, brazing, steel cutting, must have a burn permit requested by the Contractor through GAFB FD.

2.1.2. Site Coordination

The Contractor shall meet with the base safety officer immediately upon arrival on site for review of the specific safety requirements prior to installation.

2.1.2.1. Confined Space

The Contractors entering spaces on Goodfellow AFB are responsible for the safety of their personnel and for their own confined spaces permit program as outlined in AFI 91-203. All confined space operations must be coordinated with the Base Safety Office prior to start of work.

2.1.2.2. Accident/Incident Reporting and Investigation

The Contractor shall record and report all available facts relating to each instance of injury to the Base Safety Office. The Contractor shall secure the scene of any accident and wreckage until released by the accident investigative authority through the Base POC. If the Government elects to conduct an investigation of the incident, the Contractor shall cooperate fully and assist the Government personnel until the investigation is completed.

2.1.2.3. Work Area(s)

At day's end, the Contractor shall remove all debris and surplus materials from the work place. Safety barriers shall be in place to protect unfinished work site at the end of the day. All open holes or trenches shall be completely enclosed by flexible orange construction safety fencing, or other safety barriers, at the end of the work day. Equipment and materials required to complete the work effort may remain on site as long as they are organized/stored in a manner that does not cause a safety hazard.

2.1.2.4. Traffic control

In the event base vehicular traffic is to be disrupted by trenching or horizontal directional boring, the Contractor shall make appropriate notifications NLT 10 calendar days in advance to 17 CS/SCXP of the planned disruptions.

2.1.3. Security Requirements

The Contractor shall process and provide a Site Visit Request Letter to 17 CS/SCXP within 5 calendar days after contract award. This spreadsheet shall identify the names (as shown on the driver's license), driver's license numbers and state of issue, and birth date of the personnel who will be performing work under this SOW, company name, address, phone number and contract number, start date and end date. This information is required to grant access to the base. If required by the base, the Contractor shall provide identification badges for their employees. All Contractor personnel shall wear these badges while on duty on the Government site. The badges shall identify the individual, company name, and be clearly and distinctly marked as Contractor and be in accordance with base regulations.

2.1.3.1. Security Clearances

Stated work and associated products shall be performed at the UNCLASSIFIED level.

2.1.3.2. Operational Security (OPSEC)

Network infrastructure (MHDS, MH/HH locations, fiber paths, etc.) is on the 17 CS Critical Information List and must be protected. The Contractor shall take appropriate measures to protect detailed information pertaining to the EFI&T effort, to include appropriate marking of documents as "For Official Use Only (FOUO)," and ensuring limited distribution of documents and schematics/drawings to only those individuals with a valid need to know. In accordance with (IAW) AFI 10-701, OPSEC Considerations, the contractor shall develop an OPSEC plan to ensure the protection of FOUO data either furnished by the government or produced by the contractor. The contractor's OPSEC plan provided in the RFP shall be incorporated into the SOW.

2.1.4. Environmental Compliance

The Contractor shall comply with the most stringent environmental federal, state, and local laws and regulations; and Air Force policies, instructions, and plans. The federal Government is not exempt from compliance with environmental regulations. The contractor shall maintain an awareness of changing environmental regulatory requirements to avoid environmental deficiencies for activities on Goodfellow AFB.

2.1.5. Permits

The Contractor shall complete and process all permits required to complete the installation prior to any trenching, or modifications to a facility, maintenance hole or hand hole; for example, the Base Civil Engineering Work Clearance Request, a digging permit, (AF Form 103) and Base Civil Engineer Work Request (AF Form 332). AF Form 103 and AF Form 332 {and any other required permits (as determined by Base Civil Engineering (BCE) or 17 CS/SCXP, etc.)} shall be submitted at IAW local procedures. All utility markings, flags, etc. shall be maintained by the contractor after the responsible work center/shop identifies/locates them. If a utility is severed or damaged due to neglect or if attributed to the fault of the contractor, then the contractor shall repair and return the utility back to the same condition it was in prior to the damage. The form(s)/permits shall be submitted within 10 calendar days after award.

2.1.6. Integrated Process Team (IPT)

The Contractor shall chair a weekly IPT meeting that includes Contractor representatives, the 38 ES Cyberspace Integrator-Base (CSI-B), the 38 ES System Engineer (SE), the 17 CS/SCXP Project Manager (PM), and other base personnel as required. The Contractor shall provide an agenda and a worldwide "Meet Me" teleconference capability for the duration of the project. The purpose of the IPT meeting is to discuss project progress, problems being encountered, and other information necessary/beneficial to ensure success and timely completion of contract requirements. The Contractor shall record meeting minutes and distribute to the attendees. The contractor shall provide at this meeting a weekly action register, in Microsoft excel, to capture items that need to be addressed. Action register shall have at a minimum Project Description, Contact list, Action Item List, Discrepancy List, and any pertinent information related to the project. (CDRL A004)

2.1.7. Quality Assurance

The Contractor shall provide Quality Assurance Support for the life of the project. The Contractor's quality assurance evaluator shall assist the Government representative in performing random spot checks and system acceptance tests. The Contractor shall be responsible for identifying system and outside plant deficiencies and /or discrepancies throughout the life of the project. A weekly report (soft copy) shall be submitted indicating progress/status and listing any deficiencies/discrepancies found and actions to correct them. (CDRL A003)

2.1.8. Contractor Personnel

2.1.8.1. Project Management

The Contractor shall provide a Project Manager (PM) and alternate(s) responsible for contract performance and continuity. The Contractor shall identify the Project Manager's or alternate's range of authority to act for the Contractor relating to daily contract operation.

2.1.8.2. Site Point of Contact (POC)

The Contractor shall designate the Contractor's on-site team leader and alternate(s) as the Site POC for individual projects in their Site Visit Request Letter. The Site POC or alternate(s) shall be on site during duty hours until project completion and shall oversee all facets of the installation tasks. The Site POC shall be the interface for all work site communications with the Government, including quality, safety, and discrepancy matters.

2.1.8.3. Personnel Requirements

The Project Manager, Site POC, and respective alternate(s) shall be able to read, write, speak, and understand English. All reporting and documentation shall be in English.

2.1.9. Electronic Contractor Manpower Reporting Application (ECMRA)

The contractor shall report ALL contractor labor hours (including subcontractor labor hours) required for performance of services provided under this contract for Goodfellow AFB single mode (SM) fiber optic cable (FOC) from ITB to ITB, via a secure data collection site. The contractor is required to completely fill in all required data fields using the following web address <http://www.ecmra.mil>

Reporting inputs will be for the labor executed during the period of performance during each Government fiscal year (FY), which runs October 1 through September 30. While inputs may be reported any time during the FY, all data shall be reported no later than October 31 of each calendar year. Contractors may direct questions to the ECMRA help desk.

2.1.10. Warranty

The Contractor shall provide a one year warranty or manufacturer's standard commercial warranty, whichever is longer. This warranty shall include a one year workmanship warranty. The warranty period shall start from the date of system and/or project acceptance. The Contractor shall provide written procedures and required information for warranty services at or prior to site acceptance.

2.2. SPECIFIC REQUIREMENTS

The Contractor shall provide EFI&T SM, outdoor rated fiber optic cabling from GAFB, AF Modular Dorm to MH352 located within FOB Sentinel South, using the existing and new maintenance hole duct bank system. Contractor shall also install associated fiber optic distribution panels, with pre-terminated, factory certified connectors within cassette style modules all fusion spliced in Buildings. In addition, contractor shall install a complete and useable CAT6 solution at one of the three new FOB North buildings. This includes Ethernet jacks, patch panels, cabling, cable ladders and wall mounted enclosures.

2.2.1. Maintenance Holes (MHs)

The Contractor shall pump out water as required. Water shall be drained IAW BCE and base environmental requirements.

2.2.2. Measurements

Any distances provided in this SOO are approximations and should NOT be used for ordering materials or determining duct lengths.

2.2.3. Splice Conductors

All fiber splicing shall be performed in accordance with RUS Bulletin 1735F-401, Standards for Splicing Copper and Fiber Cable. The fusion splice method shall be used for all splicing and terminations of fiber optic cable. Fiber optic cables shall be terminated via fusion splice to pigtails with SC connectors.

2.2.4. Cable Racks and Cable Rack Supports

Cable racks shall be installed in maintenance holes as required – this includes new and existing MHs/HHs. Splices shall not be supported by the cables that enter each end of the splice case. The splices shall be supported by cable hooks under the splice case. Telecommunications industry standard cable hooks of the appropriate length shall be provided to support cables and splice cases. The cable hooks shall be secured using cable rack locking clips. All cables shall be supported using racking clips, cable racks, and cable hooks.

2.2.5. Labeling

The Contractor shall label all equipment and cables they install and cables identified for re-use IAW TIA-606-B-2012 and as directed by the 17CS, SCXP. New ducts shall be permanently labeled on the wall of each building/maintenance hole indicating the connecting building/maintenance hole at the other end of the duct (for example, “To MH-200”). Tagging and labeling of new cables shall be IAW 17CS labeling scheme.

2.2.6. Cable Tags

All tags shall be permanently labeled, easily visible and corrosion resistant. Install cable tags in all maintenance holes/handholes, cable vaults, pull boxes and building entrance terminal locations. When cables pass through a maintenance hole, put a tag on the cable, approximately 2 feet from each duct entrance. Information on the cable tag shall identify cable by size, type, cable number and count. See Para 2.2.5 (above) for nomenclature for tagging.

2.2.7. Pulling Tape

All newly installed ducts left vacant shall be provided with a waterproof, corrosion resistant, pre-lubricated flat woven polyester pull tape with sequential footage markings (1250 lb. pulling strength) for future cable installations. The pull tape shall extend into the maintenance holes and be secured to a cable rack or pulling iron, etc.

2.2.8. Cable Terminations

Fiber optic cables shall be terminated via fusion splice to pigtails with SC connectors in cassette style housing. The pigtails shall be sized the same as the OSP fiber they are spliced to, i.e., 125/8.3 micron to 125/8.3 micron. The pigtails shall be duplex (or simplex) unless otherwise agreed to by 17 CS/SCXP.

2.2.9. OSP Maintenance Loop(s)

The Contractor shall install a minimum of a 50 foot fiber optic cable maintenance loop at the first MH from the building, at every splice point MH location and at every 3rd MH in the route. The maintenance loop slack shall be properly labeled, securely supported to the cable ladder and off the MH floor or in telecomm room.

2.2.10. Grounding/Bonding

Grounding/Bonding hardware such as corrosion resistant wire, bonding ribbon, clamps, ground rod, etc. necessary to properly bond/ground the cable in MHs shall be provided by the Contractor. In addition, grounding/bonding of telecommunication racks to telecomm busbar and building ground if necessary. Reference UFC 3-580-01, TIA 607, and TIA 758.

2.2.11. Underground Conduit System

The Contractor shall be responsible for any required trenching and/or boring necessary to lay the duct system. The Contractor is also responsible for backfilling ditch lines and compaction of fill materials with appropriate compaction tools. Directional drilling shall be used for major road crossings, taxiways, runways, etc. Otherwise, crossing of paved surfaces may be performed by pavement cuts and resurfacing with appropriate matching road material. This does not prevent the Contractor from using directional drilling if it is more cost effective. Ducts will be appropriately protected when placed under paved surfaces (i.e., concrete encasement).

2.2.11.1. Composition. N/A

2.2.11.2. Typical Situations

The ducts shall be 4-inch inside diameter (I.D.) round or metric equivalent. The ducts shall be made of EPC-40 Polyvinyl Chloride (PVC) (Schedule 40) IAW NEMA TC-2. The ducts shall be appropriately labeled indicating the composition material. Ducts shall have a sleeve or bell-end type coupling and shall be watertight when assembled. In addition, the Contractor shall adhere to any additional Host Base/site specific requirements.

2.2.11.3. Unique /Site Specific Situations

The ducts shall be 4-inch inside diameter (I.D.) round or metric equivalent. The ducts shall be made of EPC-80-PVC (Schedule 80) IAW NEMA TC-2; high density polyethylene (HDPE) SIDR 11.5, Galvanized Iron Pipe (GIP) or “thickwall” stainless steel. Schedule 80 PVC shall be limited to risers, all above ground conduit and under the roadway/parking pavement. High density polyethylene (HDPE) SIDR 11.5 shall be used when directional bring is used. GIP or stainless steel shall be used under major roadways, taxiways, and runways. The ducts shall be appropriately labeled indicating the composition material. Ducts shall have a sleeve or bell-end type coupling and shall be watertight when assembled. In addition, the Contractor shall adhere to any additional Host Base/site specific requirement.

2.2.11.4. Installation

Installation of underground conduits/ducts shall be IAW RUS Bulletin 1751F-643 and RUS Bulletin 1753F-151. Ducts installed beneath roads, sidewalks, parking areas, other paved surfaces or areas to be paved, etc. shall be installed a minimum of 36" below grade. In a MH with knockouts, ducts shall start at the bottom knockout, allowing for upward expansion in the MH. All ducts not installed under roads, sidewalks, parking areas, or areas to be paved, etc. shall have a minimum of 36 inches ground cover, where possible. The Contractor shall provide other protective measures, concrete cap, etc., in those areas where the minimum ground cover cannot be achieved. Grading of ducts shall be accomplished IAW RUS Bulletin 1751F-643. All conduits shall be continuous between MH/HHs (i.e., no breaks or separations in the conduit runs between MH/HHs).

2.2.11.5. Bends and Sealing

All bends between MHs shall be a minimum of ten times (10X) the diameter of the duct size (i.e., 4 inch duct = 40 inches) with the sum of bends in all directions not exceeding a total of 90 degrees, where practical. Coordinate with 17 CS/SCXP if runs have bends that total more than 90 degrees is required. Ducts shall have bell-ends and enter a MH perpendicular to the surface of the wall through which it is entering. All ducts/inner-ducts entering MH shall be sealed.

Universal duct plugs or removable putty sealants may be used. Upon completion of conduit sections, a rigid 12” long test mandrel ¼” (6.4mm) smaller than the inside diameter of the conduit shall be pulled through two diagonally opposite ducts to ensure proper alignment. In addition, all ducts shall be cleared of loose materials such as concrete, mud, dirt, stones, etc.

2.2.11.6. Utility Separation

When communications ducts cross either power duct or buried power cable, maintain a minimum separation of 3 inches of concrete or 12 inches of well-tamped earth between the two or 12 inches of well tamped earth when parallel; for pipes (e.g., gas, water, oil) maintain 6 inches when crossing or 12 inches when parallel.

2.2.11.7. Spacers and Tracer Wire

Along the length of the duct run, if the ducts are installed by trenching, spacers shall be placed at five (5) foot intervals and cable warning tape shall be buried one (1) foot above the conduit and shall follow the duct route. The tape shall be a minimum of three inches wide and orange in color with the appropriate warning message. At least one duct shall have tracer wire or be otherwise locatable from the surface.

2.2.11.8. Entrance Conduits into Existing Maintenance Holes

When new entrance conduits/ducts or sleeves are required, the Contractor shall bore and install the necessary holes and install the ducts or sleeves, if a knockout does not exist. Penetration shall not be in such a location through the wall as to block use of existing ducts in the maintenance hole. New ducts will be a minimum of 18 inches from either the maintenance hole floor or ceiling, if practical. The minimum bending radius for entry conduit/ducts shall be no less than 10 times the inside diameter of the conduit. Ducts and openings around ducts shall be sealed to prevent moisture from entering the maintenance holes.

2.2.11.9. Excavation/Building Penetrations

All wall penetrations, including inside buildings, shall be restored to meet the required base fire ratings.

2.2.12 N/A

2.2.13. Outside Plant Installation

This section describes the underground cables, flexible geotextile multiple cell fabric, innerduct and MH/HH plus conduit system installation requirements. The Contractor shall design and install Customer-Owned Outside Plant Telecommunications Infrastructure in accordance with ANSI/TIA-758. Each cable installation shall be coordinated with 17 CS/SCXP so that the impact on the building users is properly coordinated. The sequence of installation is at the Contractor’s discretion.

2.2.13.1. Infrastructure Installation

The contractor shall install 2x4” outdoor rated conduits from MH-352 to FOB North bldgs. One of these outdoor rated conduits shall have one 3x3 inch Geo-textile fabric. Contractor shall install one (1) 24 port FODP . Contractor shall install 96 strands of single mode fiber optic cable from MH-373 to MH 352. Contractor shall install 24 strands of single mode corning glass fiber from FOB North bldg to MH-352.

2.2.13.1.1. Maintenance Holes/Hand Holes

Install one new 4' x 4' x 4' precast hand hole with ladder, ground rod, racking and direct traffic rated lid. Lid shall be circular in size. Placement of Hand Hole shall be installed near the new FOB North building and approved by 17CS. Ductbank exists between MH-352 and B3488. Contractor is free to survey and determine if

2.2.13.1.2. Ductbank Infrastructure

Install 4" PVC and/or HDPE SIDR 11.5 duct banks IAW the following Table:

From Building	To MHole or Telecomm Room	Quantity	Size (inches)	Approx. Distance (Feet)	Figure	Comment
New Handhole	MH-352	2	4	440	2	2x4" Conduits
FOB NORTH BLDG 1	New HH	2	4	60	2	2x4" Conduits
FOB NORTH BLDG 2	New HH	2	4	60	2	2x4" Conduits

2.2.13.1.3. Geo-textile Fabric Installation

Install Geo-textile fabrics IAW the following Table:

From Building	To MHole or Telecomm Room	Quantity	Size (inches)	Approx. Distance (Feet)	Figure	Comment
New Handhole	MH-352	1	3x3"	460	2	Install one-3x3" Geo-textile fabrics (detectable type) in the 4" conduit.
FOB NORTH BLDG 1	New HH	1	3x3"	100	2	Install one-3x3" Geo-textile fabrics (detectable type) in the 4" conduit.
FOB NORTH BLDG 2	New HH	1	3x3"	100	2	Install one-3x3" Geo-textile fabrics (detectable type) in the 4" conduit.

2.2.13.2. Fiber Optic Cable Installation

Install outside plant FOC as described in the following paragraphs. The cable shall be single mode, corning glass, outside plant (OSP) cable suitable for outdoor or indoor/outdoor applications. The Contractor shall coordinate each cable installation with the 17CS/SCXP so as to minimize the impact on building users. The intent is to install the cable in one continuous length, to the extent that it is practical. The Contractor shall determine whether there is some practical reason for an intermediate splice in the cable at some maintenancehole/handhole between the cable end points. If an underground splice is necessary, it shall be accomplished IAW commonly accepted telecommunications industry practices for fusion splicing optical fiber cable and sealed with a splice case suitable for the application. If a splice case is installed in a maintenance hole/handhole it shall be pressure tested IAW the manufacturer’s instructions. If a splice case leaks, it shall be reinstalled and retested. A coil of 50 feet of cable shall be provided on each cable entering or leaving a splice case in a maintenance hole or handhole and approved by 17CS/SCXP.

Install Outdoor or Indoor/Outdoor rated Single Mode Fiber Optic Cable IAW the following Table:

From Building	To Bldg or MHole	FOC Size	Approx. Distance (Feet)	Figure	Comment
MH-373	MH-352	96	7874	1 & 2	Fully manufactured corning specifications.
FOB NORTH BLDG 1	MH-352	24	560	1 & 2	Fully manufactured corning specifications.
FOB NORTH BLDG 2	MH-352	24	560	1 & 2	Fully manufactured corning specifications.

2.2.13.2.1. Fiber Optic Cable from MH-373 to FOB North Bldg. 1 and Bldg. 2

The Contractor shall install approximately 7,874 feet of 96-strand and 1,120 feet of 24-strand of one continuous length, SM FOC from MH-373 to FOB North building 1 and building 2 utilizing existing and new Maintenance Hole Ductbank System. See Figure’s 1 and 2. Length of run in SOO is an estimate and shall be verified by contractor. The contractor shall also install the following at building:

- At each new building, one fiber optic distribution panel, along with cassette style fiberpanels. Verify placement with 17CS.
- At building, OTDR and Power Meter/Light Source test in both directions.
- Provide four (4), FOC patch cords per 17CS/SCXP guidance.
- Label all FODP’s and FOC per 17CS Standard Operating Procedures.
- Provide one (1) CAD drawings for all work performed.
- MHDS templates can be provided at the appropriate time in the project.

2.2.13.2.2. FOB North Bldg 1 and Bldg 2

FOB North, Bldg 1 and Bldg 2 will contain one telecomm room or telecom room area. Contractor shall be performing work in buildings and telecomm room. Contractor shall engineer, furnish, install, and test IAW table below. Additional details for this task can be provided as needed by 17CS SCXP. Inside plant wiring shall, at a minimum, meet all UFC 3-580-01, Ch.1/2 and 17CS SOP requirements. See Figure 2.

PART	QTY
Install one sheet of 4' X 8' 3/4-inch fire-rated plywood backboard on wall. Mount one side mounted, minimum, 800-BTU air conditioning unit. Install TMGB using all UL listed materials, bond enclosure rack, and building entrance terminal with number six green stranded wire and two-hole lugs for bonding connections. Install # 2 wire from TMGB to building electrical service ground. Install one dedicated circuit on a duplex 20 Amp-120 Volt AC, non-switch electrical outlet within the enclosure. Provide firestop material necessary for install. Installation shall meet all ANSI/TIA/EIA 568 standard, and TR shall be lockable and maintained by the 17CS. (1 Each New Bldg)	2
Provide and install a 2U horizontal front and rear wire manager, with cover, for 19"relay rack. (2 Each New Bldg)	4
Provide appropriate size, green CAT 6 Patch Cord (20 Each New Bldg)	40
Provide and install one CAT 6, 24 port patch panel. (1 Each New Bldg)	2
Provide and install, on dual style faceplate, two green Cat-6 indoor/outdoor rated plenum cables up to 295' to support voice or network services from the existing TR (Telecom Room) to specified work area. Termination method shall be 568B type wiring configuration. (10 Each Bldg)	20
Cisco C9300 48 port w/ UPOE+ & Network Advantage License (s), Cisco C9300 8 port 10G fiber module, 10G SFP+ for Cisco Devices, Redundant Power Supply for C9300-48H-A Taclane KG175D, Uninterruptable Power Supply/2200V (1 Set Each New Bldg)	2
Provide CAD Services and Provide (1) Hard Copy 24" X 36" CAD Drawing. (1 Each New Bldg)	2

2.2.14. Site Restoration/Debris Removal

The Contractor shall restore all disturbed grounds to the “as found” condition or better after installation. Base grounds restoration requirements shall be complied with. Common use areas shall be restored to their original condition. The Contractor shall be responsible for disposing of all residues from this project off base and in accordance with Federal, state and base environmental laws and regulations. All residue produced by directional drilling operations (i.e., slurry) shall be disposed of off base on the same day the residue is produced, at an appropriate disposal facility at the contractor’s expense, IAW federal, state, local and Goodfellow AFB environmental laws and regulations. Under no circumstances will the contractor stage or store boring residue in slurry ponds or other containment areas on Goodfellow AFB.

2.2.15. Service Outages

The Contractor shall be responsible for preventing any unscheduled (i.e. cutting or disabling any in-service cables or equipment.), Contractor-caused, interruptions of communications capabilities that are properly identified. The Contractor shall coordinate planned outages with the site POC at least 10 calendar days in advance of the outage if the implementation necessitates disruption of service, (e.g., communications, electrical, or other utilities).

2.2.16. Identification/Marking

The Contractor shall clearly mark all Contractor-Furnished Property and Equipment (CFP/CFE) with their company's name. The Contractor shall place an easily read, very visible, sign (minimum 8.5 inches x 11 inches) on large containers, construction equipment, or un-manned rental vehicles while on the Government installation indicating the company name and both the Contractor and Site POC's names and local telephone numbers.

2.2.17. Installation Schedules

The Contractor shall provide a complete milestone schedule that denotes project activities to include time-phased start and completion dates for the project and sub-projects associated with the installation of the components and system. (CDRL A002)

2.2.18. Weekly Status Reports

The Contractor shall prepare a Weekly Status Report in English and shall distribute. The purpose of the report is to inform IPT members of project progress, problems being encountered, and other topics necessary/beneficial to ensure success and timely completion of the contract requirements. (CDRL A003 & A004)

2.2.19. As-Built Drawings

The Contractor shall submit red line drawings showing the “as-built” configuration in format specified by base SCX project manager. The base communications squadron will provide baseline drawings. The Contractor shall provide As-Built Rack Elevation, Inside Cable Plant and Outside Cable Plant drawings and distribute per Goodfellow Air Force Base, Standard Operating Procedures. (CDRL A001)

2.2.20. Test and Acceptance/Installation Test Plan

The Contractor shall provide a test plan as to how the system shall be pre-tested, in-progress-tested and post-tested to demonstrate to the Government that the system is fully operational ready to be placed into service. The Contractor shall test the system to demonstrate to the Government quality assurance representative. These tests shall be accomplished prior to the system being placed into service. (CDRL A005)

2.2.20.1 Outside Plant Cable testing

All strands of fiber optic cables shall be tested IAW TIA 526-7 Measurement of Optical Power Loss of Installed Single-mode Fiber Cable Plant, or equivalent. As a minimum, the following tests shall be performed. Both Optical Time Domain Reflectometer (OTDR) and Optical Power Meter tests will be used for all end-to-end circuits. Between FODPs, bi-directional testing at 1310 nm and 1550 nm is required.

NOTE: Testing of the Fiber Optic Cables on the reel shall be provided to the 17 CS/SCXP prior to installation.

2.2.21. Acceptance/Installation Test Report

The Contractor shall provide an installation test report of the results of the testing accomplished under the installation test plan IAW CDRL A006.

2.2.22. Final Acceptance

The Contractor shall schedule a final project walk-through with the 17 CS/SCXP. This should be scheduled 10 calendar days prior to acceptance.

2.2.23. As-Built Documentation in CVC

The Contractor shall record geospatial data and provide as-built documentation (shape files) of all new installed maintenance hole system components (including metadata) compatible with the Cyberspace Infrastructure Planning System (CIPS) Visualization Component (CVC) drawing system. Data points shall be recorded at the center of each manhole/handhole lid and at intervals not to exceed 25 feet along cable routes. Sufficient data points shall be recorded to capture any change in direction along the route. All GPS coordinates shall have +/- 3 feet accuracy for all readings. The government is responsible for providing the Contractor with a copy of the installation's most current GeoBase Common Installation Picture (CIP), and current CVC drawings of the areas of interest. The government will review the shape files in CVC and transcribe the information to the CVC system. Shape files shall be delivered upon project completion. (CDRL A001)

3. GENERAL INFORMATION

3.1. Period of Performance

The Contractor shall have forty five [45] calendar days to complete the project as outlined in this SoW and provided drawings. To include the Base Bid, 0001 FOB North and Bid Option 0003 FOB North. Base Bid and Bid Option shall run concurrently.

3.2. Place of Performance

The place of performance is Goodfellow AFB, TX.

3.3. Hours of Operation

The Contractor shall routinely work during normal duty hours of the site. However, mission requirements may necessitate work outside normal hours (nights and/or weekends), especially if existing service must be interrupted. Any site work requested by the Contractor to be performed outside of normal duty hours shall be coordinated with the 17 CS/SCXP and approved by the Contracting Officer at least 10 calendar days in advance.

3.4. Holidays/Down Days

The Contractor shall not perform under this contract on federal holidays or site-unique down-days unless expressly authorized by the CO and coordinated with the 17 CS/SCXP Project Manager.

3.5. Base Support

The Contractor shall identify any base support requirements (for example, laydown and storage areas) necessary to complete this project in their proposal. The contractor shall return all government furnished lay-down and storage areas to their original condition upon completion of the project.

3.6. Minimum Contractor Qualifications.

All work shall be performed by an experienced Telecommunications Contractor. The Contractor shall have a minimum of 3 years of experience in Telecommunications Systems installations and provide the technician's certifications that are to perform work on this project.

End of Statement of Objectives

APPENDIX A: APPLICABLE STANDARDS

The following list is not all-exclusive. The Contractor shall comply with applicable commercial code and standards

AFI 91-203 – Air Force Consolidated Occupational Safety Instruction

AFBAN-FS – AF Base Area Network Functional Specification, 2017

OSHA CFR 29 Part 1910-268 – Telecommunications

NEMA TC 2- Electrical Polyvinyl Chloride (PVC) Tubing and Conduit

ANSI/TIA-606-B Administration Standard for Telecommunications Infrastructure

TIA-568-C Commercial Building Telecommunications (568C.1, 568C.2, 568C.3) Cabling Standard

ANSI/TIA-607-B Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications

TIA-569-C - Commercial Building Standard for Telecommunications Pathways and Spaces

TIA-570-C –Residential Telecommunications Infrastructure Standard

TIA-758 - Customer-owned Outside Plant Telecommunication Infrastructure Standard

T.O. 00-33A-1001, Methods and Procedures, General Cyberspace Support Activities Management Procedures and Practice Requirements

BICSI TDM Manual - Building Industries Consulting Services International Telecommunications Distribution Methods (TDM) Manual

BICSI – Outside Plan Design Reference Manual

RUS Bulletin 1751F-643 - Underground Plant Design

RUS Bulletin 1751F-644 - Underground Plant Construction Telecommunications Engineering Shield Continuity and Construction Manual (TE&CM) 451.2

RUS Bulletin 1751F-801 – Electrical Protection Fundamentals

RUS Bulletin 1753F-151 (515b) - Specifications and Drawings for Underground Cable Installation

NFPA 70 - National Electric Code

FGDC-STD-007.3-1998 - Geospatial Positioning Accuracy Standards Part 3: National Standard for Spatial Data Accuracy

UFC 3-520-01. Interior Electrical Systems

UFC 3-580-01, Telecommunications Interior Infrastructure Planning and Design (Ch. 1 & 2)

Goodfellow Air Force Base Telecommunications Requirements (17CS, SOP)

40CFR61, Sub Part M, National mission Standards for hazardous Air Pollutants Compliance (NESHAP)

APPENDIX B: LIST OF DELIVERABLES

All deliverables are subject to Government acceptance and approval. They shall meet professional standards and the requirements set forth in this SOO. All deliverables shall be produced using recommended software tools/versions as accepted by the Government. The Contractor shall submit the following deliverables:

CDRL	Data Item Title	Data Item Title
A001	As Built	
A002	Work Schedule	
A003	Status Report	
A004	Meeting Minutes	
A005	Test Plan	
A006	Test Report	

APPENDIX C: LIST OF ACRONYMS

AASHTO	American Association of State Highway and Transportation Officials
AFM	Airfield Management (BaseOPS)
Approx	Approximately
ATC	Air Traffic Control Tower
ATCAL	Air Traffic Control and Landing Systems
BCE	Base Civil Engineering
CDRL	Contract Deliverable
CFE	Contractor-Furnished Equipment
CFP	Contractor-Furnished Property
CIP	Common Installation Picture
CIPS	Cyberspace Infrastructure Planning System
CMA	Controlled Movement Area
CMHDS	Communications Maintenance Hole Duct System
CO	Contracting Officer
Comm	Communications
CS	Communications Squadron
CSI-B	Cyberspace Integrator-Base
CVC	CIPS Visualization Component
ECMRA	Contractor Manpower Reporting Application
EFI&T	Engineer, Furnish, Install and Test
FOC	Fiber Optic Cable
FODP	Fiber Optic Distribution Panels
FOUO	For Official Use Only
FY	Fiscal Year
HDPE	High Density Polyethylene
HH	Hand Hole
IAW	In Accordance With
ID	Inside Diameter
ILS	Instrument Landing System
IPT	Integrated Process Team
ITB	Information Transfer Building
LMR	Land Mobile Radio
MH	Maintenance Hole
MHDS	Maintenance Hole Duct System
NLT	No Later Than
NPDES	National Pollution Discharge Elimination System
OEM	Original Equipment Manufacturer
OPSEC	Operational Security
OSHA	Occupational Safety & Health Administration
OSP	Outside Plant
OSS	Operations Support Squadron
OTDR	Optical Time Domain Reflectometer
PDF	Portable Document Format
PM	Project Manager
POC	Point Of Contact
Prime	Prime Contractor

PSI	Pounds per Square Inch
PVC	Polyvinyl Chloride
QAE	Quality Assurance Evaluator
QCM	Quality Control Manager
Qty	Quantity
RUS	Rural Utilities Service Bulletin
SCOW	Supply Chain Operations Wing
SCX	Scheduler Planner
SE	System Engineer
SM	Single Mode
SOO	Statement of Objectives
Sub	Sub-Contractor
SWPPP	Storm Water Pollution Prevention Plan
TIA	Telecommunications Industry Association
TMGB	Telecommunication Main Ground Bus-Bar
TRD	Technical Requirements Document

APPENDIX D: DRAWINGS



Figure 1: Proposed Conduit, Geo-textile fabric innerduct and FOC Install

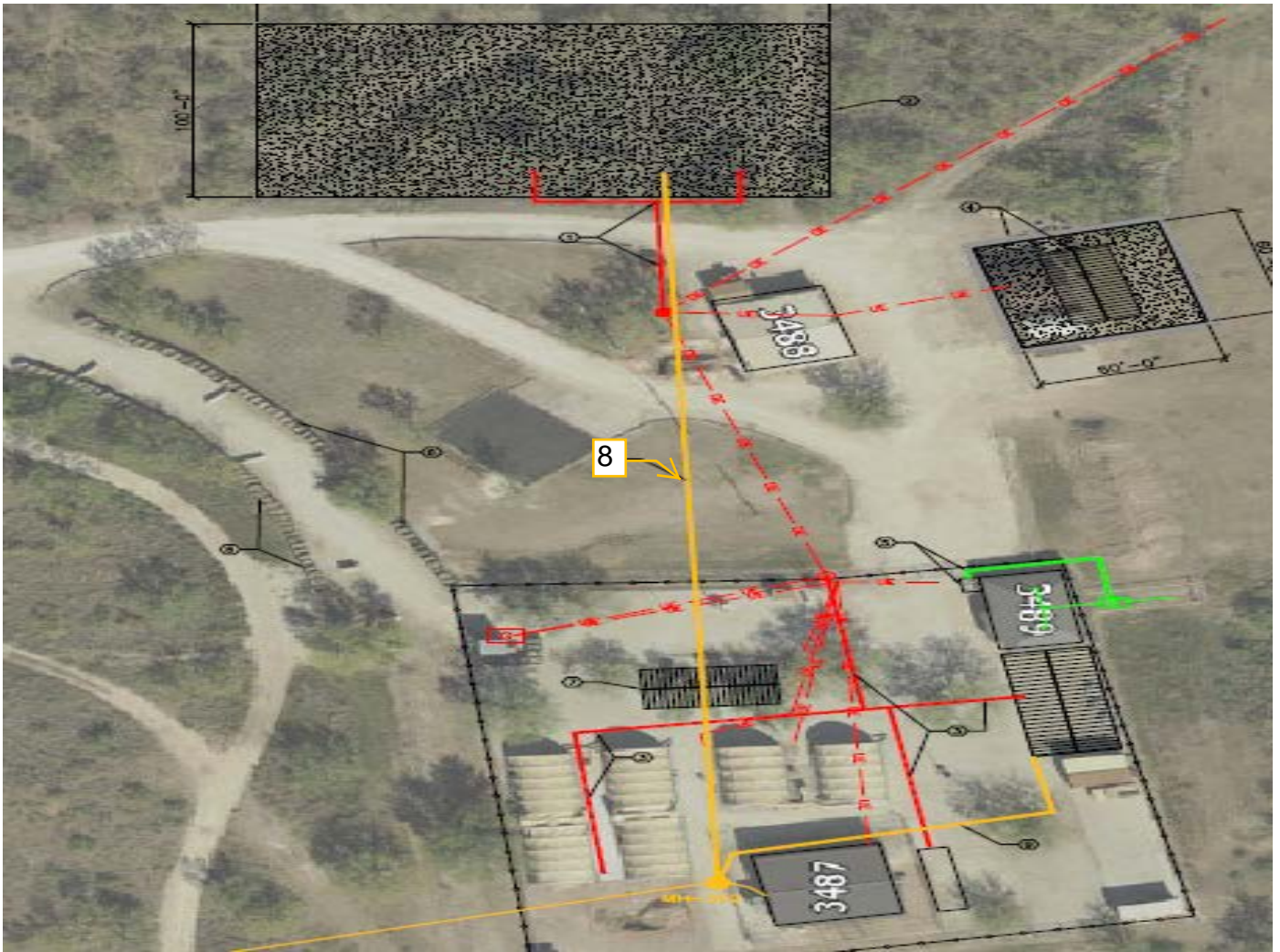


Figure 2: Proposed Conduit, Geo-textile fabric innerduct and FOC Install

8 - Solid BOLD Orange Line - Proposed new comm ducts and fiber optic cable to new FOB North

Expand FOB Sentinel South

Summary

- FOB S2 – New UG Power Distribution
- FOB S3 – Storage Area Canopy
- FOB S4 – Enclosed Storage Area
- FOB S5 – Outdoor Training Area
- FOB S6 – Concrete Jersey Barriers
- FOB S7 – Ice Machine Requirements
- FOB S8 – Communications Requirements

Summary – FOB S2

Expand FOB Sentinel South

New UG Power Distribution

- 1 The Contractor shall provide a new secondary electrical service from existing meter to the new stand located next to the existing.
- 2 The Contractor shall provide a new electrical service stand. Stand post shall be galvanized and a minimum 3” in diameter and placed at 48” in depth and shall be encased in concrete.
- 3 The Contractor shall ensure that all items to and from the existing meter are sized appropriately. To include, MDP stand, MDP, conduits, wires, breakers, disconnects, and accessories needed to perform the new equipment and shall follow all code requirements as outlined in the most current NEC code book. Refer to Site Plan for location of new panel.
- 4 The Contractor shall provide one (1) new 400a panel with main circuit breaker with panel directory for the new electrical runs.
- 5 The Contractor shall trench, to a depth of 30”, from the new electrical distribution location, for new electrical conduits to each terminating location as indicated on the provided dwgs.
- 6 The Contractor shall provide new underground electrical service runs to each location shown on the drawings. To include sub panel pedestals, conduit, wire, sub panels, receptacles and all accessories necessary to have a complete functioning system.
- 7 The Contractor shall make final terminations at each location.
- 8 The Contractor shall, only after an approved visual inspection by GAFB inspectors, backfill all open trenches. Backfill/bedding material shall be pea gravel or sand. There shall be a minimum of 3” of material beneath and to side of the conduit and a minimum of 6” of material above the conduit.
- 9 The Contractor shall provide detectable tape 12” above buried conduit.
- 10 The Contractor shall ensure all electrical devices, i.e., main panel, sub-panels, disconnects, breakers, switches, and receptacles are in proper working order.
- 11 The Contractor shall provide material/product submittals for review.
- 12 The Contractor shall be responsible for verifying existing conditions, dimensions, and equipment prior to start of work.
- 13 Refer to drawing set for additional details.

Summary-FOB S3

Expand FOB Sentinel South

20' x 40' Storage Area

- 1 The Contractor shall strip existing vegetation and topsoil to depth of 9" below existing grade.
- 2 The Contractor shall remove all debris and unused excavated materials from jobsite.
- 3 The Contractor shall grade and compact the existing sub-base in preparation for the new pad and concrete slab.
- 4 The Contractor shall install a 65' x 65' x 12" compacted base pad. Pad to be placed in a minimum of two (2) base material lifts. First lift shall be compacted to a minimum 95% density before placement of next lift. Second lift shall be compacted to a minimum 95% density. Testing is required.
- 5 The Contractor shall provide test reports from testing lab.
- 6 The Contractor shall install a 60' x 60' x 6" thick concrete slab with an 8" x 12" thickened, wide perimeter edge. To include #4 reinforcement at 16" ocev.
- 7 The Contractor shall install a new 20' x 40' x 9' gable roof style, covered structure on new slab for protecting training and service equipment. Roof Metal Panel color samples to be submitted.
- 8 The Contractor shall install a new 6' high chain link security fence with security top razor/concertina wire coil surrounding new 60' x 60' concrete slab. To include (1) 6' x 12' manual wheeled lockable rolling gate with three strands of barb wire mounted at top of gate. Place gate on top of concrete slab for ease of use. Product submittal required.
- 9 All exposed framing shall be prime (red oxide), minimum one (1) coat, and painted with a minimum of two (2) coats of DTM paint. Sherwin Williams Uniflex Rust Inhibitive Metal Primer, Kelly Moore Red Oxide or approved equal. Metal paint, Sherwin Williams Direct to Metal, Kelly Moore Kel-Guard or approved equal. Both primer and paint shall be for an exterior application. Product and color chart submittal required.
- 10 The Contractor shall be responsible for verifying existing conditions, dimensions, and equipment prior to start of work.
- 11 Refer to drawing set for additional details.

Summary – FOB S4

Expand FOB Sentinel South

Enclosed Training Facility, Modular Bldg.

- 1 The Contractor shall provide new exterior door locksets with BEST core assembly. Product submittal required.
- 2 The Contractor shall provide new exterior door closers.
- 3 The Contractor shall remove existing thresholds, transition strips, and weatherstripping at doors and windows.
- 4 The Contractor shall provide new thresholds, transition strips, and weatherstripping at door and window openings.
- 5 The Contractor shall convert the existing latrines to storage closets. Remove the existing water closets, lavatories, and associated plumbing items.
- 6 The Contractor shall remove all existing cove base throughout building.
- 7 The Contractor shall remove all existing carpeting throughout building.
- 8 The Contractor shall make any exterior wall, trim, doors, railings, etc., repairs necessary and prep for primer and paint. Repairs shall closely match existing finishes.
- 9 The Contractor shall prime, minimum one coat, and paint, minimum 2 coats, the exterior of the bldg. Exterior paint shall be an DTM long lasting exterior coating. Exteriors Colors: Sherwin Williams Duration Exterior Paint – SW6119 Antique white. Trim Paint-SW7048 Urbane Bronze or approved equal. Product and color chart submittal required.
- 10 The Contractor shall provide new minimum 20mil with attached underlayment LVP type flooring throughout bldg. Color: Provide color sample. Product submittal required.
- 11 The Contractor shall provide new 6” rubber cove base throughout bldg. Cove base shall be provided in 100’ rolls to minimize joints. Color: Provide color sample. Product submittal required.
- 12 The Contractor shall provide new electrical service and make all final connections, as well as ensure all disconnects, breakers, switches, receptacles, and lighting are in proper working order. Ref. attached Summary-FOB S2 New UG Power Distribution.
- 13 The Contractor shall provide two new (2) HVAC split ductless system with all necessary accessories. To include tubing kit, electrical service, concrete pad, etc. Product/equipment submittal required.
- 14 The Contractor shall provide new comm requirements as per GAFB 17CS direction. Ref. attached Summary-8 Communication Requirement.
- 15 The Contractor shall be responsible for verifying existing conditions, dimensions, and equipment prior to start of work.
- 16 Refer to drawing set for additional details.



Building size:28' x 60' with two (2) interior rooms.



Summary – FOB S5

Expand FOB Sentinel South

Outdoor Training Area, Rally Point

- 1 The Contractor shall install a new 20' x 40' x 9' gable roof style, covered
- 2 structure only, on or over the existing slab. Roof Metal Panel color sample to be submitted
- 3 All exposed framing shall be prime (red oxide), minimum one (1) coat, and painted with a minimum of two (2) coats of DTM paint. Sherwin Williams Uniflex Rust Inhibitive Metal Primer, Kelly Moore Red Oxide or approved equal. Metal paint, Sherwin Williams Direct to Metal, Kelly Moore Kel-Guard or approved equal. Both primer and paint shall be for an exterior application. Product and color chart submittal required.
- 4 The Contractor shall provide electrical service from the existing Panel A, and make all final terminations, as well as ensure all breakers, switches, receptacles, lighting, and fans are in proper working order. Switches, receptacles, lighting, and fans shall be on their own service. Product submittals required.
- 5 The Contractor shall provide six (6) new fully enclosed, vandal proof, vapor tight, outdoor LED lighting. Lighting should provide a minimum 6000 lumens for outdoor nighttime training. Product submittal required.
- 6 The Contractor shall provide one (1) new light switch, one (1) new fan switch, and four (4) convenience receptacles. Switches and receptacles to be placed within outdoor enclosure boxes. Product submittal required.
- 7 The Contractor shall provide three (3) new outdoor type minimum 52" ceiling fans. Product submittal required
- 8 The Contractor shall be responsible for verifying existing conditions, dimensions, and equipment prior to start of work.
- 9 Refer to drawing set for additional details.

NOTE: No sitework to be performed at this location. Covered canopy to match that of the "Storage Area"

Summary – FOB S6

Expand FOB Sentinel South

Concrete Jersey Barriers

- 1 The Contractor shall remove and dispose of all gabion basket type barriers, to include fill material, along road leading to FOB Sentinel.
- 2 The Contractor shall provide and install at a minimum, 8' x 42" x 24", concrete type jersey barriers where gabion basket barriers were removed. Product submittal required.
- 3 The Contractor shall be responsible for verifying existing conditions, dimensions, and equipment prior to start of work.
- 4 Refer to drawing set for additional details.



Summary – FOB S7

Expand FOB Sentinel South

Ice Machine Requirements

- 1 The Contractor shall install and make all necessary connections to the Government supplied ice machine. Location of Ice Machine shall be NW corner of B3489 on top of the existing concrete apron.
- 2 The Contractor shall provide a covered enclosure for protection from the elements. Refer to drawing for details.
- 3 The Contractor shall provide and install a new water line to the ice machine.
- 4 The Contractor shall provide and install an in-line filtration system to the ice machine. Filtration system shall inhibit sediment, chlorine, taste, and odor. Filtration system shall be installed within the men's latrine NW corner wall. Product submittal required. Filter system manufacturers are Scotsman, Ice-O-Matic, or approved equal.
- 5 The Contractor shall submit a Drinking Water Analysis Report and a "Drinking Water Customer Service Inspection checklist" via an AF Form 3000 for Government Approval. Contact Bioenvironmental Engineering at 325-654-3126 prior to restoring drinking water service.
- 6 The Contractor shall provide and install a new drain line. Drain line shall empty into the septic tanks located at the back of B3489.
- 7 The Contractor shall provide and install an electrical service for the ice machine.
- 8 The Contractor shall be responsible for verifying existing conditions, dimensions, and equipment prior to start of work.
- 9 Refer to attached drawing set at the end of these documents for additional details.

Summary – FOB S8

Expand FOB Sentinel South

Communication Requirement, Modular Bldg.

17CS Comm Requirement is below:

- 1 The Contractor shall provide and install 2 - 4" Schedule 40 PVC Conduit to a depth of 36 inches from Telecomm Maintenance Hole (MH-352) to the existing modular building.
- 2 The Contractor shall cap the PVC duct ends.
- 3 The Contractor shall, only after an approved visual inspection by GAFB inspectors, backfill all open trenches. Backfill/bedding material shall be pea gravel or sand. There shall be a minimum of 3" of material beneath and to side of the conduit and a minimum of 6" of material above the conduit and compacted to 90% density.
- 4 The Contractor shall provide and install detectable tape 12" above buried conduit.
- 5 The Contractor shall provide material/product submittals for review.
- 6 Rod and Rope Conduit, plug empty conduit.
- 7 The Contractor shall provide As-built CAD drawings.
- 8 (Verify with 17CS) All work, shall at a minimum, meet the TIA 758 Customer Owned Outside Plant Telecomm Infrastructure Standard. Documentation available upon request.
- 9 The Contractor shall be responsible for verifying existing conditions, dimensions, and equipment prior to start of work.
- 10 Refer to drawing set for additional details.

SCHEDULE OF MATERIAL SUBMITTALS										PROJECT NUMBER:		Construct New FOB North \ FOB Sentinel South		Expand	SOLICITATION/CONTRACT NO.:			
TO BE COMPLETED BY THE PROJECT ENGINEER										TO BE COMPLETED BY CONTRACT ADMINISTRATOR								
LINE NUMBER	ITEM OR DESCRIPTION OF ITEM, CONTRACT REFERENCE, TYPE OF SUBMITTAL (Ref spec & para no.)	NO. OF COPIES REQUIRED							REQUIRED SUBMISSION DATE	DATE RECEIVED IN CONTRACTING	DATE TO CIVIL ENGINEER-ING	RETURN SUSPENSE DATE	FOLLOW UP	DATE CONTRACTOR NOTIFIED		CONTRACT-TOR RE-SUBMITTAL	FINAL APPROVAL	REMARKS
		CERTIFICATION OF COMPLIANCE	SHOP DRAWINGS	SAMPLES	COLOR SELECTION	MANUFACTURER'S RECOMMENDATIONS	MANUFACTURER'S WARRANTY	OPERATING INSTRUCTIONS SEE PARA ON COPIES						OTHERS AS SPECIFIED	APPROVED			
1	Part 1, 1.1 General Scope Work						1		a									FIO
2	Part 1, 1.5.1 Personnel	1							a									GA
	Part 1, 1.6.1.3 Water Test Results	1						1	e									FIO
3	Part 1, 1.7, Management Plan						1		b - FOB North c/d-FOB South									GA
4	Part 1, 1.7 Performance Period						1		b - FOB North a - FOB South									GA
5	Part 1, 1.7.1, Traffic Plan						1		b - FOB North c - FOB South									GA
6	Part 1, 1.7.3 Storage Area						1		b - FOB North c - FOB South									GA
7	Part 1, 1.14 Submittals - DD1354							1	e									GA
8	Part 1, 1.14.3 Contractors Warranty						1		f									FIO
9	Part 1, 1.14.4 Manufactures Warranties						1		f									FIO
10	Part 1, 1.16 Safety Plan						1		a									FIO
11	Part 1, 1.28 BALs						1		a									GA
12	Part 2, 2.3.1 Paint			1			1		c/d									GA
13	Part 2, 2.3.2 Flooring			1			1		c/d									GA

SCHEDULE OF MATERIAL SUBMITTALS										PROJECT NUMBER:		Construct New FOB North \ FOB Sentinel South		Expand	SOLICITATION/CONTRACT NO.:				
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14	Part 2, 2.3.3 Transition Strips			1						c/d									GA
15	Part 2, 2.3.4 Door Hardware						1	1		c/d									GA
16	Part 2, 2.3.5 Metal Thresholds							1		c/d									GA
17	Part 2, 2.3.6 Weatherseal							1		c/d									GA
18	Part 2, 2.4 Concrete Design Mix	1								c/d									FIO
19	Part 2, 2.4.2 Reinforcing Steel	1								c/d									FIO
20	Part 2, 2.6 Flexible Base Material	1								b - FOB North c/d - FOB South									GA
21	Part 2, 2.7 Canopy Shop Dwg.		1							c/d									GA
22	Part 2, 2.7.4 Painting			1	1					c/d									GA
23	Part 2, 2.7.5 Metal Roof Panels			1	1					c/d									GA
24	Part 2, 2.8.1 Electrical	1						1		b - FOB North c/d - FOB South									GA
25	Part 2, 2.8.2 Conduit & Fittings	1						1		b - FOB North c/d - FOB South									GA
26	Part 2, 2.8.3 Wire & Cable	1						1		b - FOB North c/d - FOB South									GA
27	Part 2, 2.8.3.2 Canopy Lighting					1	1	1		c/d									GA

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28	Part 2, 2.10.1 Water Filter System				1	1	1			c/d									GA
29	Part 2, 2.9.1 Fence	1					1			c/d									GA
30	Part 3, 3.15 FOB North - N1 / N2 Electrical Service - Submittals & As-Builts	1	1		1	1	1			b-Submittals f-As-Builts									GA
31	Part 3, 3.15 FOB South - S2 New Elect'l Upgrade - Submittals & As-Builts	1	1		1	1	1			b-Submittals f-As-Builts									GA
31	Part 3, 3.15 FOB South - S3 Storage Area - Submittals & As-Builts		1	1	1	1	1			b-Submittals f-As-Builts									GA
33	Part 3, 3.15 FOB South - S4 Enclsd Trn'g Fac.- Submittals & As-Builts			1	1					b-Submittals f-As-Builts									FIO

SCHEDULE OF MATERIAL SUBMITTALS										PROJECT NUMBER:		Construct New FOB North \ FOB Sentinel South		Expand	SOLICITATION/CONTRACT NO.:				
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34	Part 3, 3.15 FOB South - S5 Outdoor Training Area Submittals & As-Builts		1	1	1	1	1			b-Submittals f-As-Builts									FIO
35	Part 3, 3.15 FOB South - S6 - Concrete Barriers Submittals	1							1	b-Submittals f-As-Builts									GA
36	Part 3, 3.15 FOB South - S7 Ice Machine - Water Filter Submittals & As-Builts		1			1	1			b-Submittals f-As-Builts									GA
37	Part 3, 3.15 FOB South - S8 Comm Ducts Submittals & As-Builts		1						1	b-Submittals f-As-Builts									GA
38	Part 4, 4.1 WCR 103							1	1	14 Days Prior									GA
39	Part 5, Enviromental Requirements							1	1	e									FIO

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	FOB North - N3 Install Ducts - Telecomm Req																		
40	2.2.19 CDRL A001 As_buiilts		1							f									FIO
41	2.2.17 CDRL A002 Work Schedule						1			b									FIO
42	2.2.18 CDRL A003 / A004 Status / Mtg Minutes						1			Wkly									FIO
43	2.2.20CDRL 005 Test Plan	1							1	d									FIO
44	2.2.23 CDRL 006 Test Report	1							1	e									FIO

AF Form 66

- (a) As soon as possible but NLT start of construction
- (b) NLT 7 Calendar Days after Task Order NTP
- (c) Prior to Start of Construction

- (d) Prior to Installation
- (e) Prior to Final Inspection
- (f) As soon as possible but NLT 15 days after project completion

Construct New FOB North FIO

- Existing FOB North Electrical Power Poles, Panel, and Meter



FIO - Construct New FOB North



FIO - Construct New FOB North -
Existing Power Poles



FIO - Construct New FOB North - Existing Power Poles



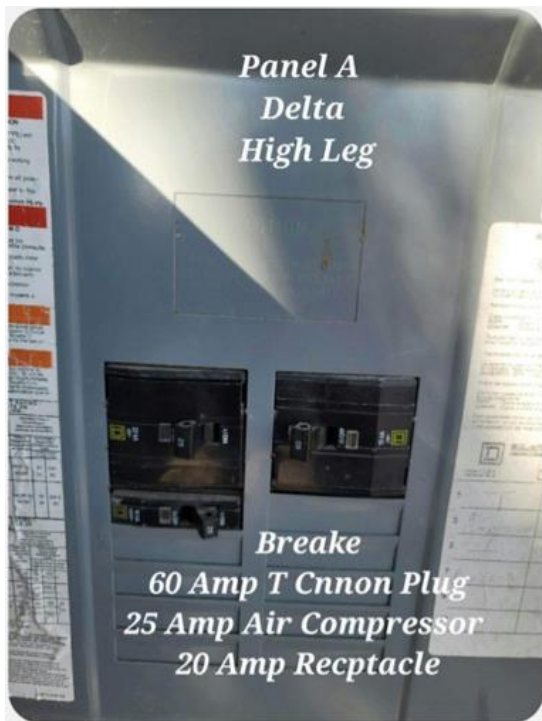
FIO - Construct New FOB North - Existing Electrical Panel and Meter

Expand FOB Sentinel South FIO

- Existing FOB Sentinel Electrical Panels
- Scotsman Model N0622A - Ice Machine Manual



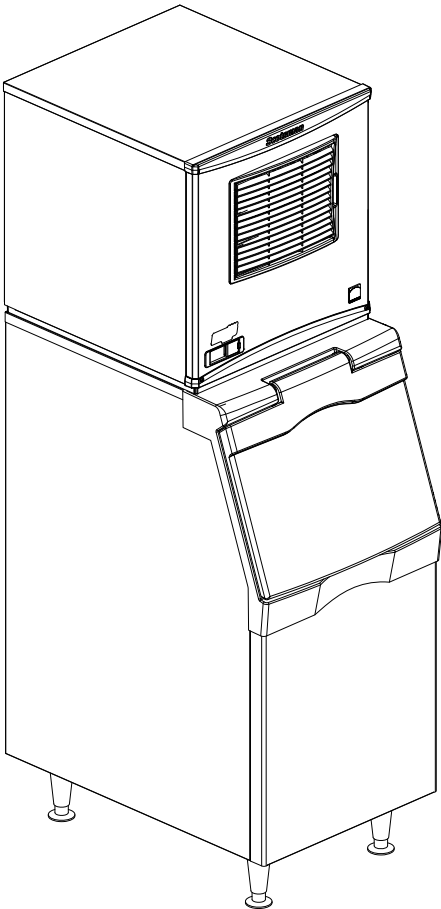
FIO – Expand FOB Sentinel South – Existing Electrical Station



FIO – Expand FOB Sentinel South – Existing Sub Panels



Installation and User's Manual for
Modular Flaked and Nugget Ice Machines
Prodigy Plus E Series Models
F0522, F0822, F1222, F1522, N0422, N0622,
N0922 and N1322



Air Cooled, Water Cooled and Remote Air Cooled

N0422, F0522, N0622, F0822, N0922, F1222, N1322, F1522

E Series Air, Water or Remote User Manual

Introduction

This ice machine is the result of years of experience with flaked and nugget ice machines. The latest in electronics has been coupled with the time tested Scotsman flaked ice system to provide reliable ice making and the features needed by customers. The features include easily accessible air filters, simple conductivity water level sensing, evaporator clearing at shut down, photo-eye sensing bin control and the ability to add options.



WARNING: Cancer and Reproductive Harm
www.P65Warnings.ca.gov

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N0422, F0522, N0622, F0822, N0922, F1222, N1322, F1522

E Series Air, Water or Remote User Manual

Installation:

This machine is designed to be used indoors, in a controlled environment. Operation outside the limits listed here will void the warranty.

Air temperature limits

	Minimum	Maximum
Ice maker	50°F.	100°F.
Remote condenser	-20°F.	120°F.

Water temperature limits

	Minimum	Maximum
All models	40°F.	100°F.

Water pressure limits (potable)

	Minimum	Maximum
All models	20 psi	80 psi

Water pressure limit to water cooled condenser is 150 PSI

Voltage limits

	Minimum	Maximum
115 volt	104	126
208-230 60 Hz	198	253

Minimum conductivity (RO water)

- 10 microSiemens / CM

Water Quality (ice making circuit)

- Potable

The quality of the water supplied to the ice machine will have an impact on the time between cleanings and ultimately on the life of the product. Water can contain impurities either in suspension or in solution. Suspended solids can be filtered out. In solution or dissolved solids cannot be filtered, they must be diluted or treated. Water filters are recommended to remove suspended solids. Some filters have treatment in them for dissolved solids.

Check with a water treatment service for a recommendation.

RO water. This machine can be supplied with Reverse Osmosis water, but the water conductivity must be no less than 10 microSiemens/cm.

Potential for Airborne Contamination

Installing an ice machine near a source of yeast or similar material can result in the need for more frequent sanitation cleanings due to the tendency of these materials to contaminate the machine.

Most water filters remove chlorine from the water supply to the machine which contributes to this situation. Testing has shown that using a filter that does not remove chlorine, such as the Scotsman Aqua Patrol, will greatly improve this situation.

Warranty Information

The warranty statement for this product is provided separately from this manual. Refer to it for applicable coverage. In general warranty covers defects in material or workmanship. It does not cover maintenance, corrections to installations, or situations when the machine is operated in circumstances that exceed the limitations printed above.

N0422, F0522, N0622, F0822, N0922, F1222, N1322, F1522

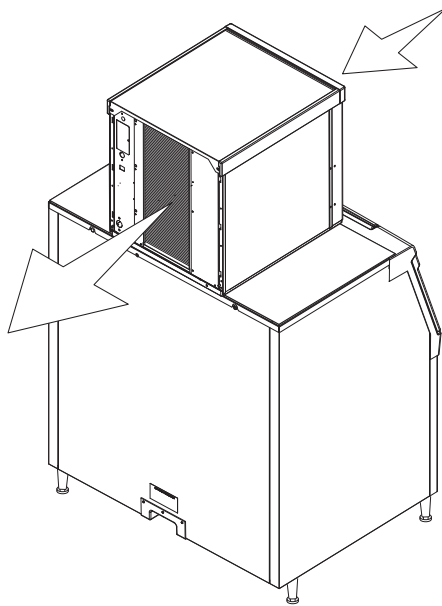
E Series Air, Water or Remote User Manual

Location:

While the machine will operate satisfactorily within the listed air and water temperature limits, it will produce more ice when those temperatures are nearer the lower limits. Avoid locations that are hot, dusty, greasy or confined. Air cooled models need plenty of room air to breathe. Air cooled models must have at least six inches of space at the back for air discharge; however, more space will allow better performance.

Airflow

Air flows into the front of the cabinet and out the back. The air filters are on the outside of the front panel and are easily removed for cleaning.



Airflow

Options

Side air flow kits KPFSA223 or KPFSA227 are available for air cooled models. A filter kit for the remote condenser is KERCF

Ice is made until it fills the bin enough to block an infrared light beam inside the base of the machine. A field installed kit is available to adjust the maintained ice level lower. The kit number is KVS.

The standard controller has excellent diagnostic capabilities and communicates to the user through the AutoAlert light panel, seen through the front panel. Field installed kits are available that can log data and provide additional information when the front panel is removed. The kit numbers are KSBU and KSB-NU. See page 21.

Bin compatibility

All models have the same footprint: 22 inches wide by 24 inches deep. Confirm available space when replacing a prior model.

Bin & adapter list:

- B322S – no adapter needed
- B330P or B530P or B530S – Use KBT27
- B842S – KBT39
- B948S – KBT38 for single unit
- B948S – KBT38-2X for two units side by side
- BH1100, BH1300 and BH1600 upright bins include filler panels to accommodate a single 22 inch wide ice machine. No adapter is needed.

Dispenser compatibility

Only nugget ice models may be used with ice dispensers. Flaked ice is not dispensable.

- ID150 – use KBT42 and KDIL-PN-150, includes KVS, KNUGDIV and R629088514
- ID200 – use KBT43 and KNUGDIV and KVS
- ID250 – use KBT43 and KNUGDIV and KVS

See sales literature for other brand model ice and beverage dispenser applications.

Other Bins & Applications:

Note the drop zone and ultrasonic sensor locations in the illustrations on the next pages.

Scotsman ice systems are designed and manufactured with the highest regard for safety and performance. Scotsman assumes no liability of responsibility of any kind for products manufactured by Scotsman that have been altered in any way, including the use of any part and/or other components not specifically approved by Scotsman.

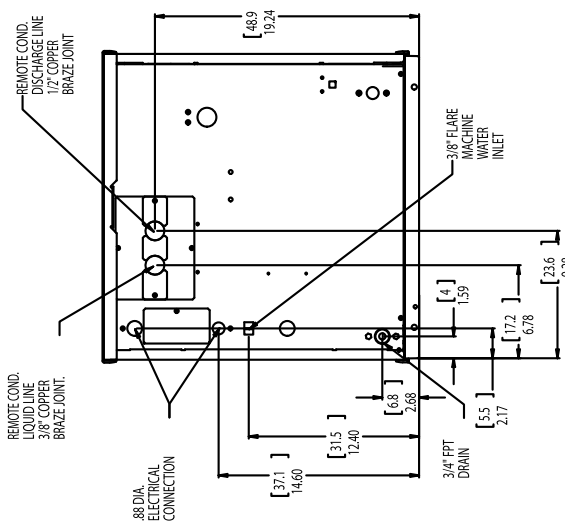
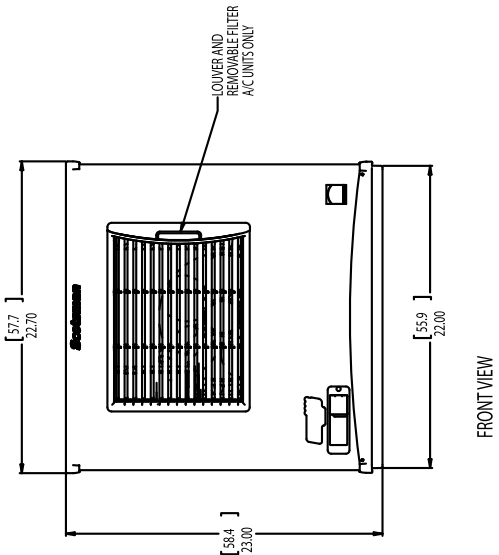
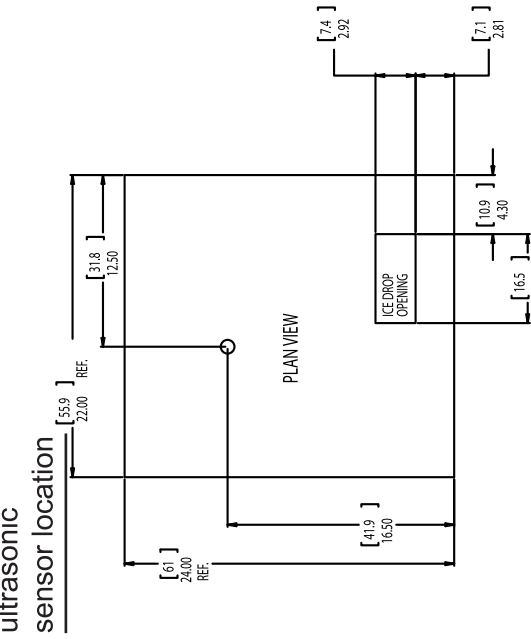
Scotsman reserves the right to make design changes and/or improvements at any time. Specifications and design are subject to change without notice.

N0422, F0522, N0622, F0822, N0922, F1222, N1322, F1522

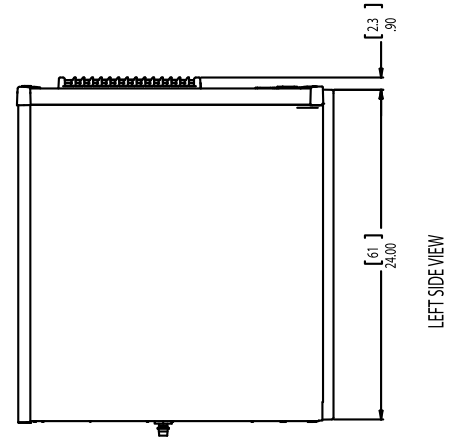
E Series Air, Water or Remote User Manual

N0422, F0522, N0622, F0822 Cabinet Layout

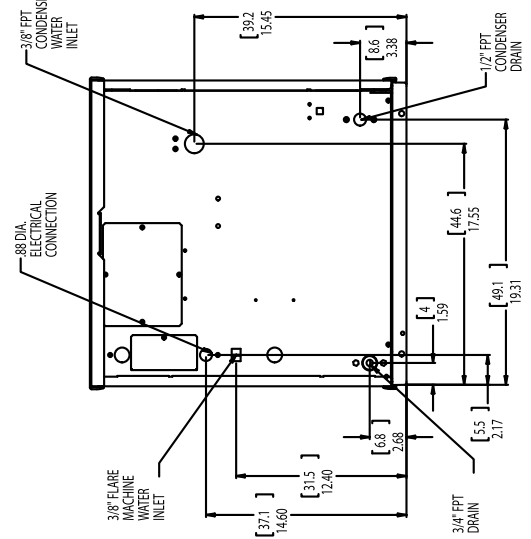
Note: Bin Top Cut-outs for drop zone should include ultrasonic sensor location



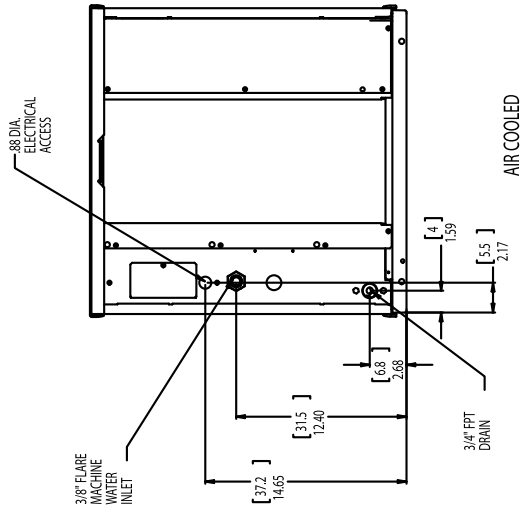
REMOTE COOLED BACKVIEW



LEFT SIDE VIEW



WATER COOLED BACKVIEW



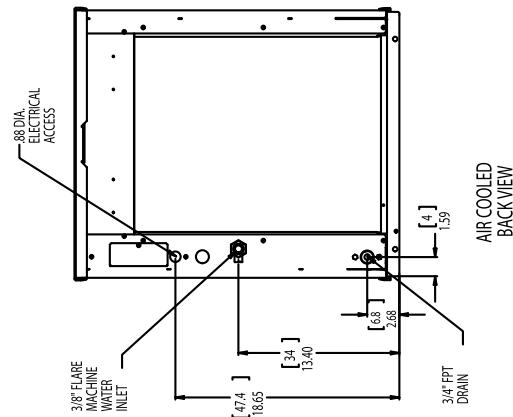
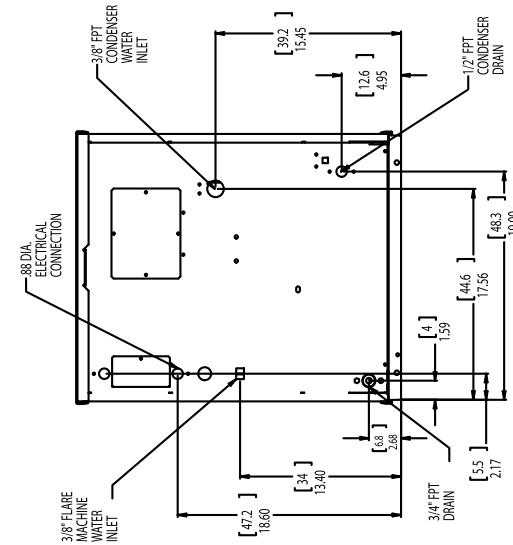
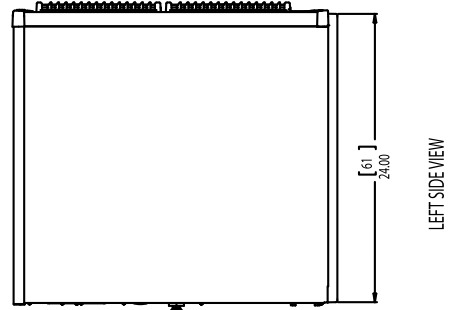
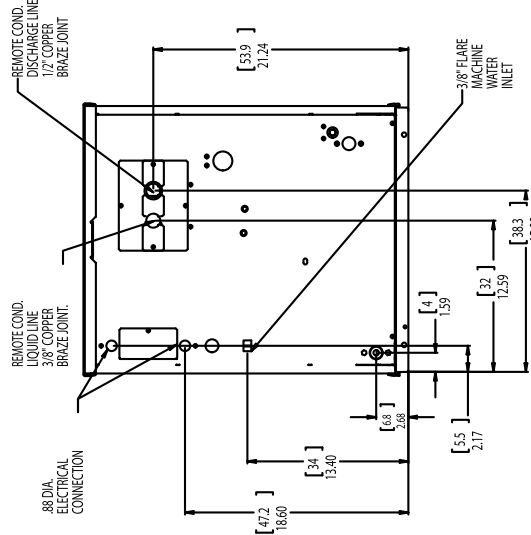
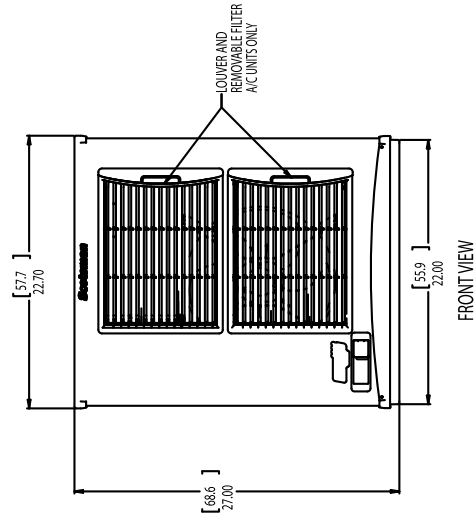
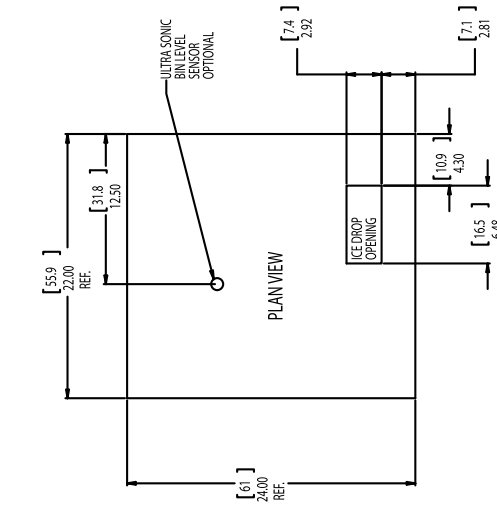
AIR COOLED BACKVIEW

N0422, F0522, N0622, F0822, N0922, F1222, N1322, F1522

E Series Air, Water or Remote User Manual

N0922, F1222, N1322, F1522 Cabinet Layout

Note: Bin Top Cut-outs for drop zone should include ultrasonic sensor location



N0422, F0522, N0622, F0822, N0922, F1222, N1322, F1522

E Series Air, Water or Remote User Manual

Unpacking & Install Prep

Remove the carton from the skid. Check for hidden freight damage, notify the carrier immediately if any is found. Retain the carton for the carrier's inspection.

The machine is not bolted to the skid. If strapped remove the strap.

Place on Bin or Dispenser

If reusing an existing bin, be sure that the bin is in good shape and that the gasket tape on the top is not torn up. Water leaks, not covered by warranty, could result from a poor sealing surface. If installing a remote or a remote low side, a new bin is recommended due to the high cost to the user of replacing an old bin when a remote system is on top.

Install the correct adapter, following the directions supplied with that adapter.

Hoist the machine onto the adapter.

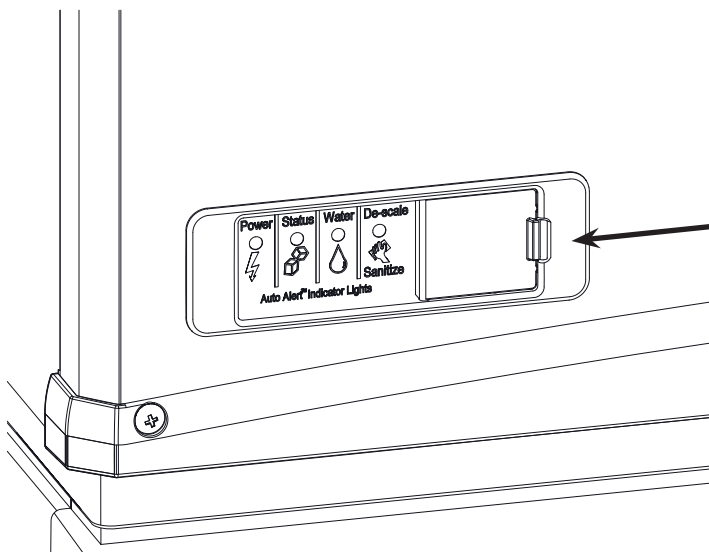
Note: The machine is heavy! Use of a mechanical lift is recommended.

Position the machine on the bin or adapter. Secure with straps from the hardware bag packed with the machine, or those supplied with the adapter.

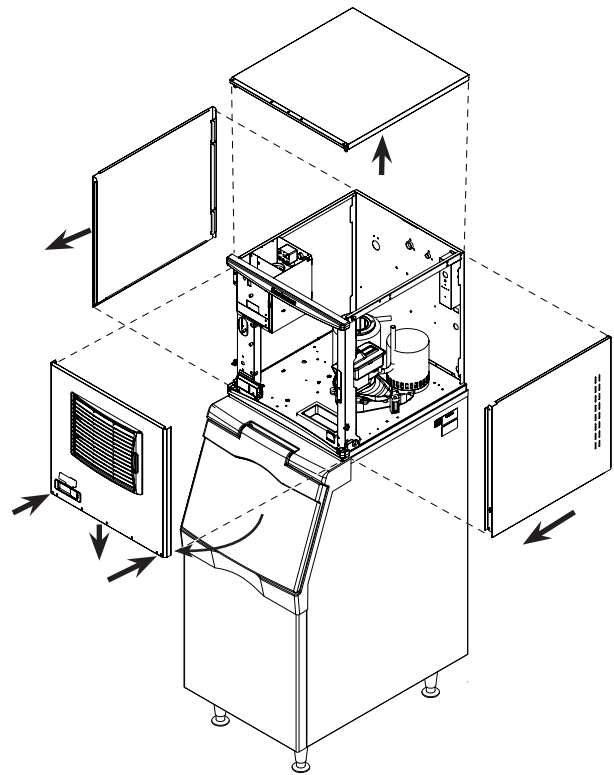
Remove any plastic covering the stainless steel panels.

Remove any packaging, such as tape or foam blocks, that may be near the gear reducer or ice chute.

Level the bin and ice machine front to back and left to right by using the bin leg levelers.



Panel Removal



1. Locate and loosen the two screws at the bottom of the front panel.
2. Pull the front panel out at the bottom until it clears.
3. Lower the front panel down and off the machine.
4. Remove two screws at the front of the top panel. Lift up the front of the top panel, push the top panel back an inch, then lift to remove.
5. Locate and loosen the screw holding each side panel to the base. Left side panel also has a screw holding it to the control box.
6. Pull the side panel forward to release it from the back panel.

Control Panel Door

The door can be moved to allow access to the on and off switches. To better limit switch access, a different door may be installed.

N0422, F0522, N0622, F0822, N0922, F1222, N1322, F1522

E Series Air, Water or Remote User Manual

Water - Air or Water Cooled

The water supply for ice making must be cold, potable water. There is a single 3/8" male flare potable water connection on the back panel. Water cooled models also have a 3/8" FPT inlet connection for the water cooled condenser. Chilled water can also be used for this connection.

Backflow

The design of the float valve and reservoir prevents potable water backflow by means of a 1" air gap between the reservoir's maximum water level and the float valve water inlet orifice.

Drain

There is one 3/4" FPT condensate drain fitting at the back of the cabinet. Water cooled models also have a 1/2" FPT discharge drain connection on the back panel.

Attach Tubing

Connect the potable water supply to the potable water fitting, 3/8" OD copper tubing or the equivalent is recommended.

Water filtration is recommended. If there is an existing filter, change the cartridge.

Connect the water cooled water supply to the condenser inlet.

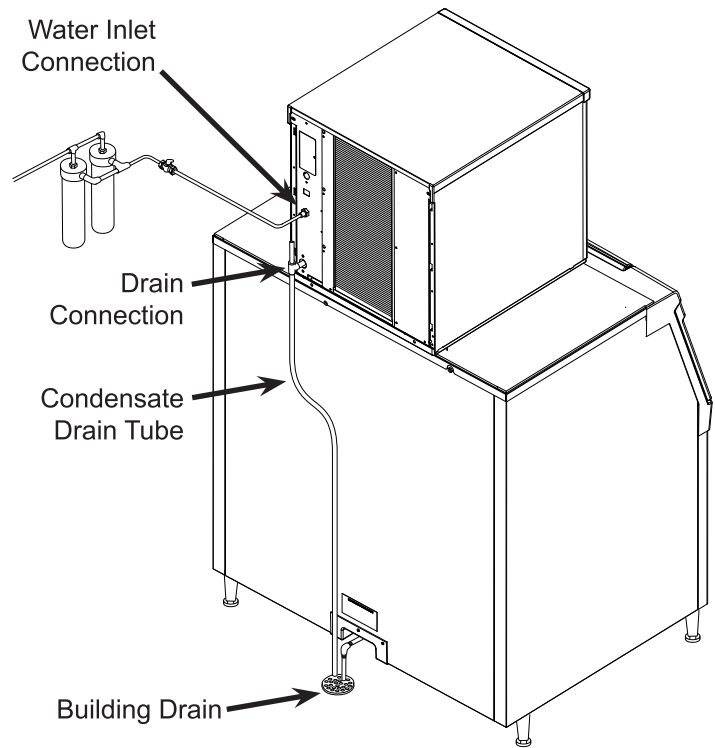
Note: Do NOT filter water to the water cooled condenser circuit.

Drains - use rigid tubing: Connect the drain tube to the condensate drain fitting. Vent the drain.

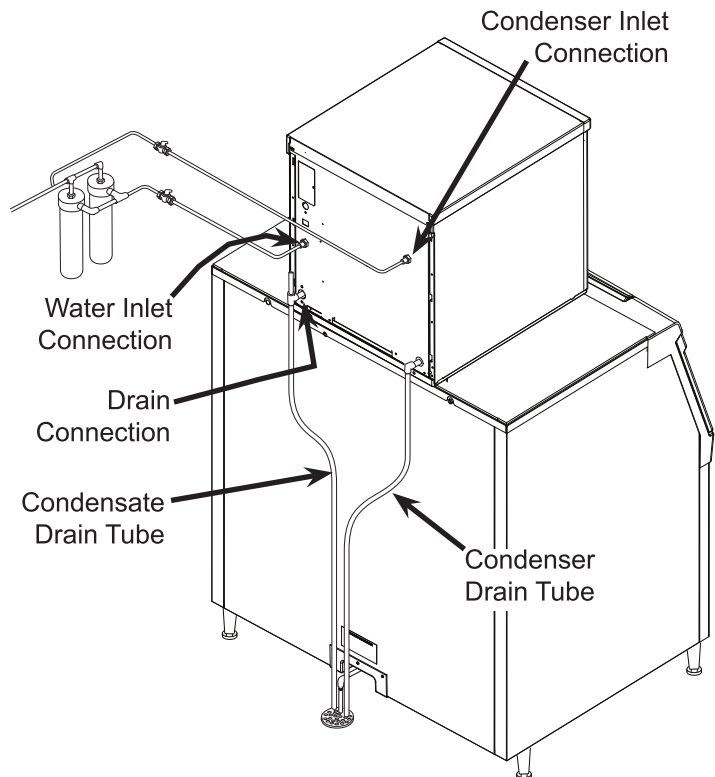
Connect the water cooled condenser drain tube to the condenser outlet. Do not vent this drain.

Do not Tee ice machine drains into the drain tube from the ice storage bin or dispenser. Back ups could contaminate and / or melt the ice in the bin or dispenser. Be sure to vent the bin drain.

Follow all local and national codes for tubing, traps and air gaps.



Air Cooled or Remote Plumbing



Water Cooled Plumbing

N0422, F0522, N0622, F0822, N0922, F1222, N1322, F1522

E Series Air, Water or Remote User Manual

Electrical - All Models

The machine does not include a power cord, one must be field supplied or the machine hard wired to the electrical power supply.

The junction box for the power cord is on the back panel. See the next page.

Refer to the dataplate on the machine for minimum circuit ampacity and determine the proper wire size for the application. The dataplate (on the back of the cabinet) also includes the maximum fuse size.

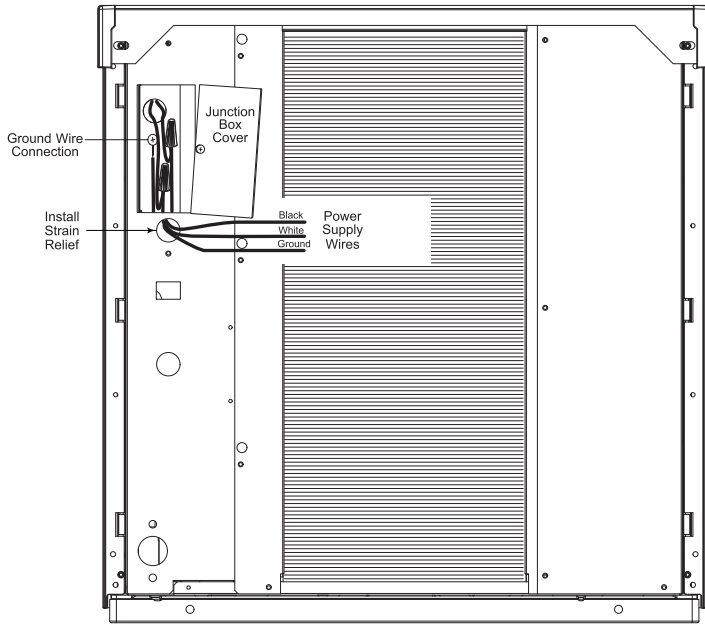
Connect electrical power to wires inside the junction box in the back of the cabinet. Use a strain relief and connect a ground wire to the ground screw.

Remote models power the condenser fan motor from marked leads in the junction box.

Do not use an extension cord. Follow all local and national codes.

Model	Series	Dimensions w" x d" x h"	Voltage Volts/ Hz/Phase	Condenser Type	Min Circ Ampacity	Max Fuse Size or HACR Type Circuit Breaker
N0422A-1	E	22 x 24 x 23	115/60/1	Air	15.2	20
N0422W-1	E	same	115/60/1	Water	14.4	20
F0522A-1	E	same	115/60/1	Air	15.2	20
F0522W-1	E	same	115/60/1	Water	14.4	20
N0622A-1	E	same	115/60/1	Air	18.3	25
N0622W-1	E	same	115/60/1	Water	16.7	25
N0622R-1	E	same	115/60/1	Remote	19.4	25
N0622A-32	E	same	208-230/60/1	Air	9.8	15
F0822A-1	E	same	115/60/1	Air	18.3	25
F0822W-1	E	same	115/60/1	Water	16.7	25
F0822R-1	E	same	115/60/1	Remote	19.4	25
F0822W-32	E	same	208-230/60/1	Water	8.9	15
N0922A-32	E	22 x 24 x 27	208-230/60/1	Air	13.2	20
N0922W-32	E	same	208-230/60/1	Water	12	15
N0922R-32	E	same	208-230/60/1	Remote	13	20
F1222A-32	E	same	208-230/60/1	Air	13.2	20
F1222W-32	E	same	208-230/60/1	Water	12	15
F1222R-32	E	same	208-230/60/1	Remote	13	20
F1222A-3	E	same	208-230/60/3	Air	10.5	15
F1222R-3	E	same	208-230/60/3	Remote	10.3	15
N1322A-32	E	same	208-230/60/1	Air	14.1	20
N1322W-32	E	same	208-230/60/1	Water	12.9	20
N1322R-32	E	same	208-230/60/1	Remote	13.9	20
N1322W-3	E	same	208-230/60/3	Water	6.3	15
F1522A-32	E	same	208-230/60/1	Air	14.1	20

N0422, F0522, N0622, F0822, N0922, F1222, N1322, F1522
E Series Air, Water or Remote User Manual
Refrigeration - Remote Condenser Models



Remote condenser models have additional installation needs.

The correct remote condenser fan and coil must be connected to the ice making head. Liquid and discharge tubing connections are on the back of the ice machine cabinet. Tubing kits are available in several lengths to accommodate most installations. Order the one that just exceeds the length needed for the installation.

The kit numbers are:

- BRTE10
- BRTE25
- BRTE40
- BRTE75

There are limits as to how far away from the ice machine and where the remote condenser can be located. See page 10 for those limits.

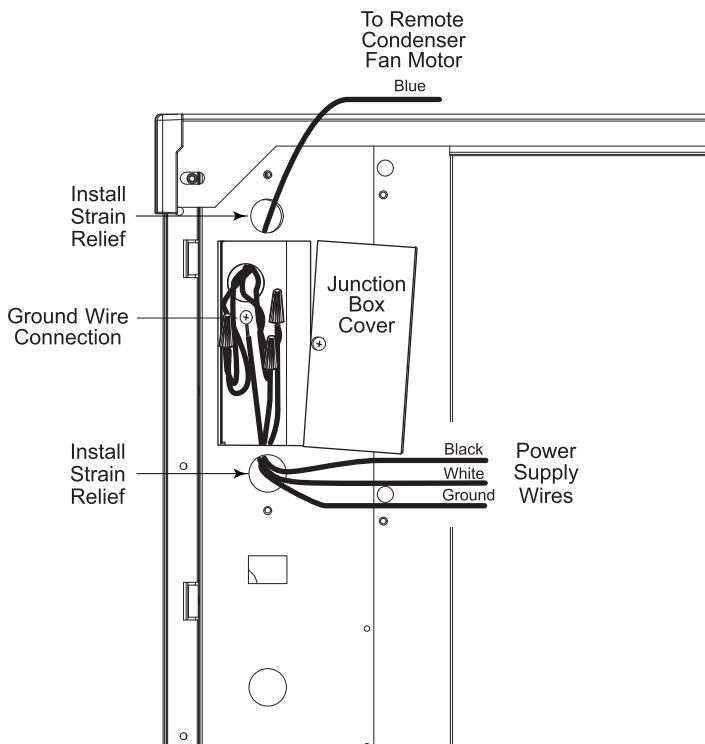
The correct condenser must be used.

Ice Machine Model	Voltage	Condenser Model
F0822R, N0622R	115	ERC111-1
F1222R, N0922R	208-230	ERC311-32
N1322R	208-230	ERC311-32

Do not reuse condenser coils contaminated with mineral oil (used with R-502 for example). They will cause compressor failure and will void the warranty.

A headmaster is required for all remote condenser systems. Prior condensers did not have a headmaster. New head / prior condenser retrofits can use headmaster kit KPFHM.

Use of non-Scotsman condensers requires pre-approval from Scotsman Engineering.



N0422, F0522, N0622, F0822, N0922, F1222, N1322, F1522

E Series Air, Water or Remote User Manual

Remote Condenser Location - Limits

Use the following for planning the placement of the condenser relative to the ice machine

Location Limits - condenser location must not exceed ANY of the following limits:

- Maximum rise from the ice machine to the condenser is 35 physical feet
- Maximum drop from the ice machine to the condenser is 15 physical feet
- Physical line set maximum length is 100 feet.
- Calculated line set length maximum is 150.

Calculation Formula:

- Drop = $dd \times 6.6$ (dd = distance in feet)
- Rise = $rd \times 1.7$ (rd = distance in feet)
- Horizontal Run = $hd \times 1$ (hd = distance in feet)
- Calculation: Drop(s) + Rise(s) + Horizontal
- Run = $dd+rd+hd$ = Calculated Line Length

Configurations that do NOT meet these requirements must receive prior written authorization from Scotsman to maintain warranty.

Do NOT:

- Route a line set that rises, then falls, then rises.
- Route a line set that falls, then rises, then falls.

Calculation Example 1:

The condenser is to be located 5 feet below the ice machine and then 20 feet away horizontally.

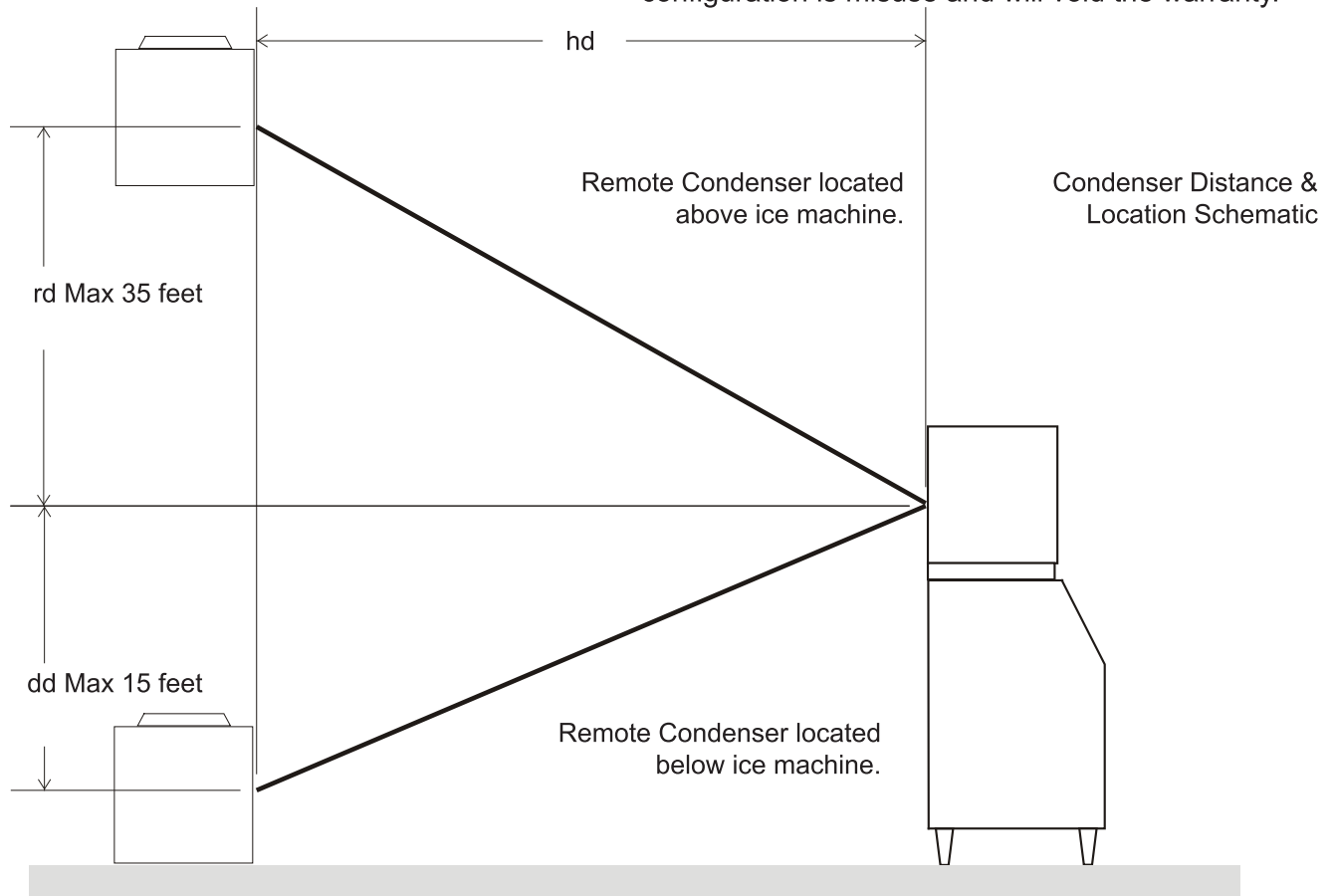
$5 \text{ feet} \times 6.6 = 33$. $33 + 20 = 53$. This location would be acceptable

Calculation Example 2:

The condenser is to be located 35 feet above and then 100 feet away horizontally. $35 \times 1.7 = 59.5$.

$59.5 + 100 = 159.5$. 159.5 is greater than the 150 maximum and is NOT acceptable.

Operating a machine with an unacceptable configuration is misuse and will void the warranty.



N0422, F0522, N0622, F0822, N0922, F1222, N1322, F1522
E Series Air, Water or Remote User Manual
For The Installer: Remote Condenser

Locate the condenser as near as possible to the interior location of the ice machine. Allow it plenty of space for air and cleaning: keep it a minimum of two feet away from a wall or other rooftop unit.

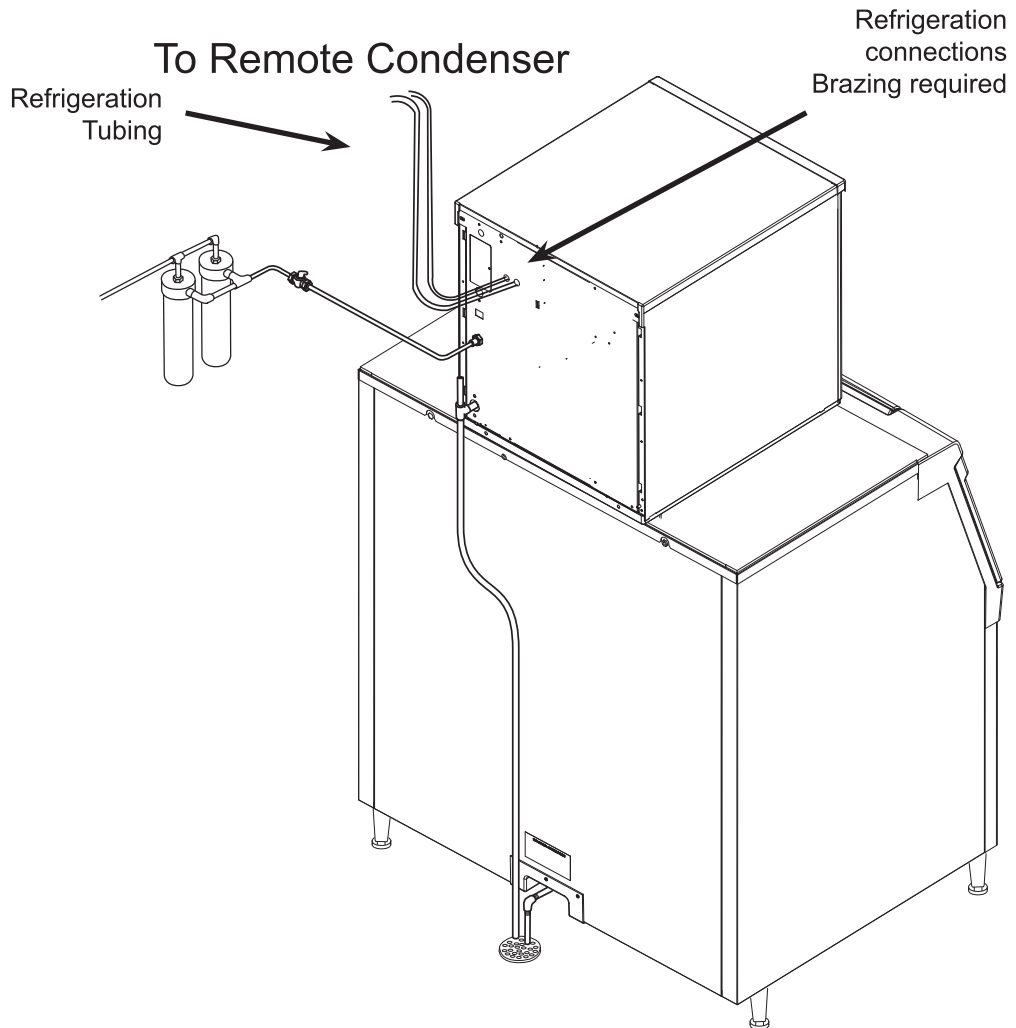
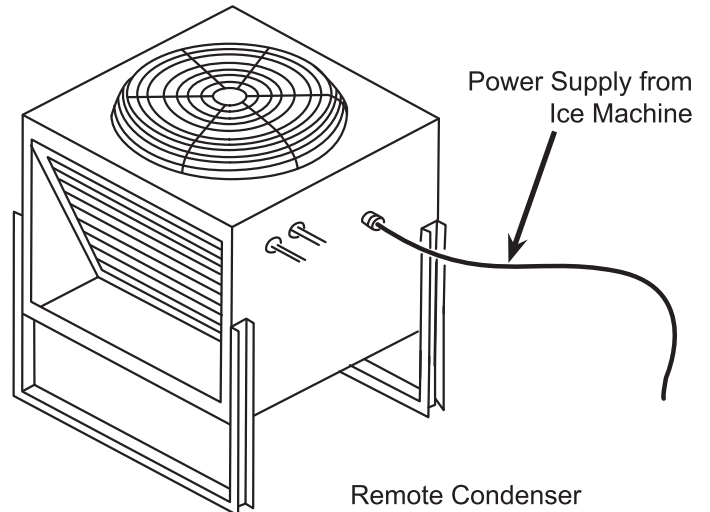
Note: The location of the condenser relative to the ice machine is LIMITED by the specification on the prior page.

Roof penetration. In many cases a roofing contractor will need to make and seal the hole in the roof for the line sets. The suggested hole diameter is 2 inches.

Meet all applicable building codes.

Roof Attachment

Install and attach the remote condenser to the roof of the building, using the methods and practices of construction that conform to the local building codes, including having a roofing contractor secure the condenser to the roof



N0422, F0522, N0622, F0822, N0922, F1222, N1322, F1522

E Series Air, Water or Remote User Manual

Line Set Routing and Brazing (applies to remote units only)

Do not connect the refrigeration tubing until all routing and forming of the tubing is complete. See the Coupling Instructions for final connections.

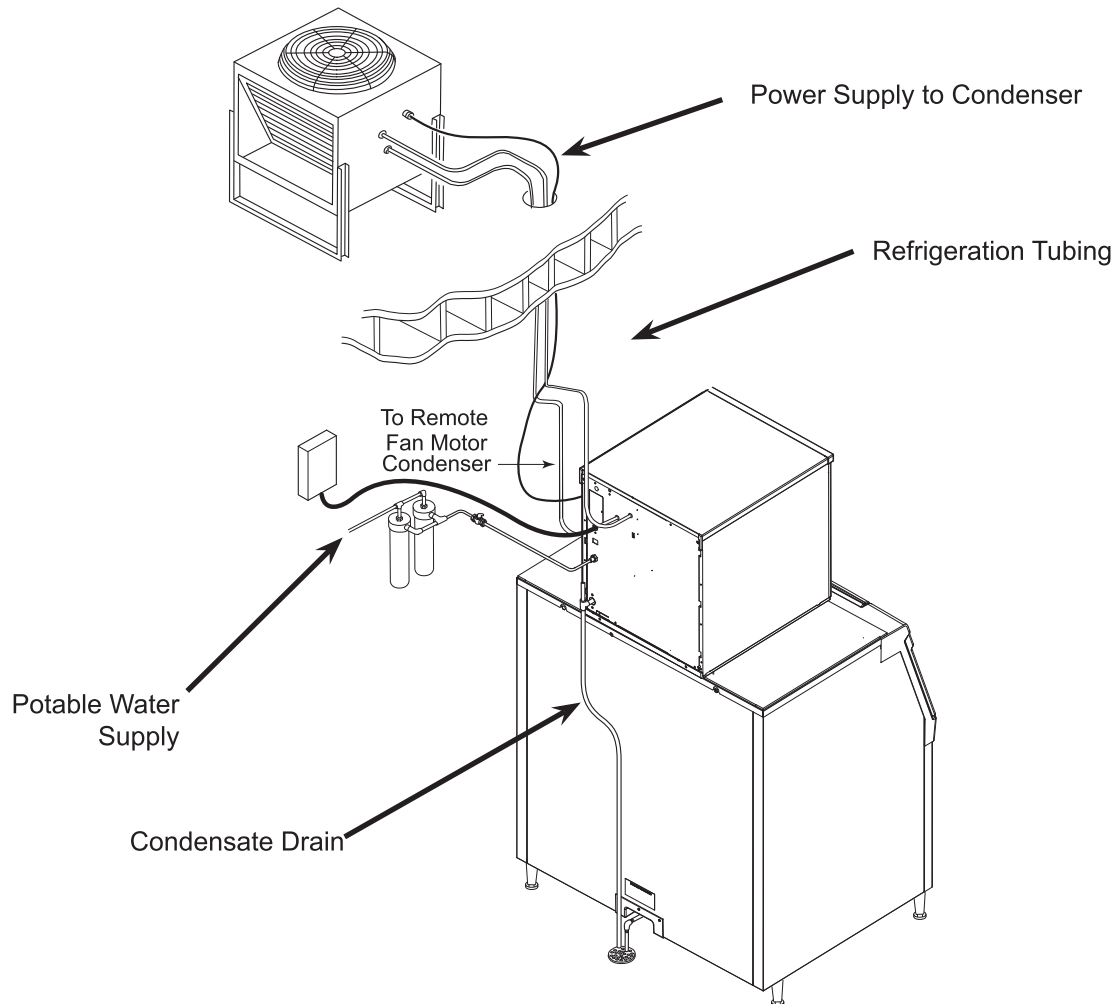
1. Each set of tubing lines contains a 3/8" diameter liquid line, and a 1/2" diameter discharge line. Both ends of each line are designed for field brazed connections.

Note: The openings in the building ceiling or wall, listed in the next step, are the minimum sizes recommended for passing the refrigerant lines through.

2. Have the roofing contractor cut a minimum hole for the refrigerant lines of 2". Check local codes, a separate hole may be required for the electrical power supply to the condenser.

Caution: Do NOT kink the refrigerant tubing while routing it.

3. Route the refrigerant tubes thru the roof opening. Follow straight line routing whenever possible. Excess tubing must be cut to proper length prior to connecting to the ice maker and condenser.
4. The tubing must be evacuated after connection to the ice maker or condenser before opening the ball valve.
5. Have the roofing contractor seal the holes in the roof per local codes



Line Set Routing and Brazing

Do not connect the refrigerant tubing until all routing and forming of the tubing is complete. Final connections requires brazing, steps must be performed by an EPA certified type II or higher technician.

The Lineset of tubing contains a 3/8" diameter liquid line, and a 1/2" diameter discharge line.

Note: The openings in the building ceiling or wall, listed in the next step, are the minimum sizes recommended for passing the refrigerant lines through.

2. Have the roofing contractor cut a minimum hole for the refrigerant lines of 1 3/4". Check local codes, a separate hole may be required for the electrical power supply to the condenser.

Caution: Do NOT kink the refrigerant tubing while routing it.

At Condenser:

1. Remove protective plugs from both connections and vent the nitrogen from the condenser.
 2. Remove the tubing access bracket to allow more room for brazing.
 3. Route the lineset tubes to there connection.
 4. Clean tubing ends and position into stubs.
-

Note: Be sure tube and stubs are round, dress with swage tool if needed.

At Head:

1. Remove the tubing access bracket to allow more room for brazing.
2. Confirm connection ball valves are fully closed.
3. Remove protective plugs from both connections.
4. Remove caps from access valve connections.
5. Remove cores from access valves.
6. Connect refrigeration hoses to access valves.
7. Connect dry nitrogen source to liquid line connection.
8. Shorten tubing to correct length, clean ends

and insert them into valve stubs.

Note: Be sure tube and stubs are round, dress with swage tool if needed.

9. Add heat sink material to ball valve body.
10. Open nitrogen and flow 1 psi nitrogen into liquid line tube and braze the liquid line and suction line tubes to the valve stubs.
11. With nitrogen flowing braze the liquid and suction line connections.

At Condenser:

1. Braze the liquid and suction line connections.

At Head:

1. Remove nitrogen source.
 2. Return valve cores to access valves.
 3. Connect vacuum pump to **both** access valves and evacuate the tubing and head to at least a 300 micron level.
 4. Remove vacuum pump and add R-404A to all three tubes to provide a positive pressure.
 5. Leak check the all braze connections and repair any leaks.
 6. Open both valves to full open.
-

Note: The full refrigerant charge is contained in the receiver of the ice machine.

N0422, F0522, N0622, F0822, N0922, F1222, N1322, F1522

E Series Air, Water or Remote User Manual

Water - Remote Models

The water supply for ice making must be cold, potable water. There is a single 3/8" male flare potable water connection on the back panel.

Backflow

The design of the float valve and reservoir prevents potable water backflow by means of a 1" air gap between the reservoir's maximum water level and the float valve water inlet orifice.

Drain

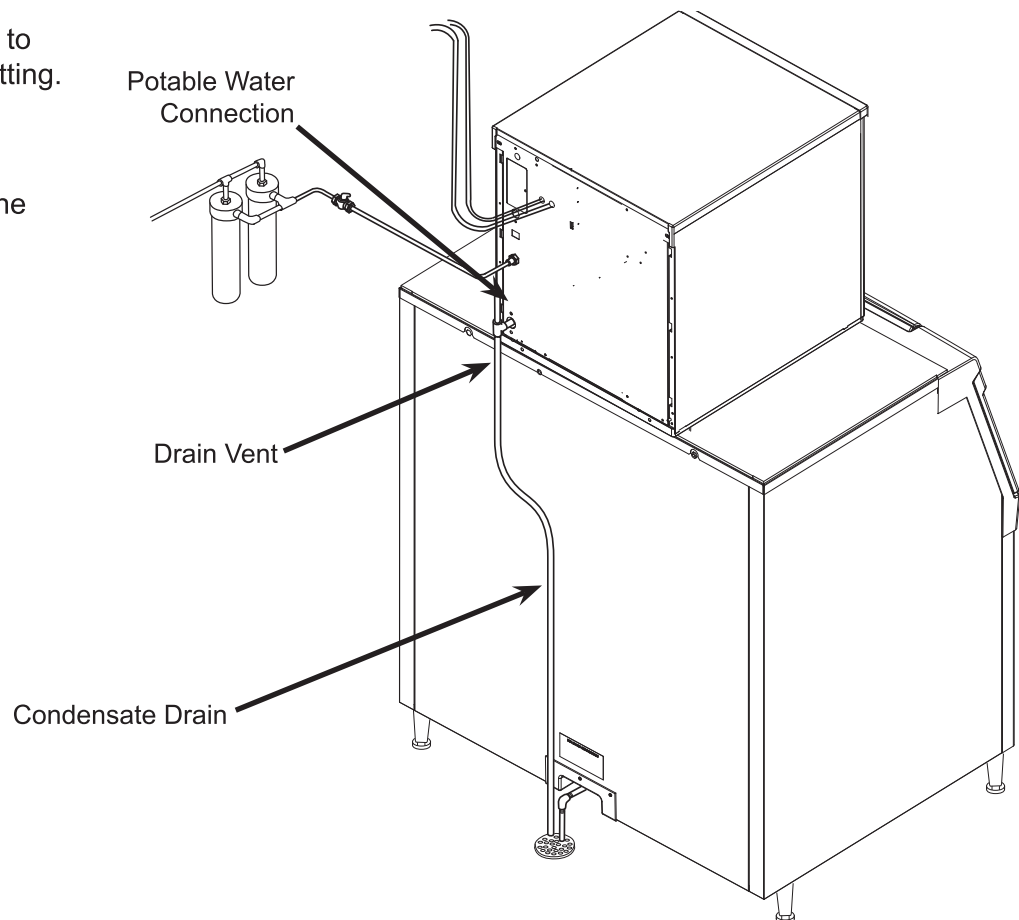
There is one 3/4" FPT condensate drain fitting at the back of the cabinet.

Attach Tubing

1. Connect the potable water supply to the potable water fitting, 3/8" OD copper tubing or the equivalent is recommended.
2. Change the cartridge on the existing water filter (if any present).
3. Connect the drain tube to the condensate drain fitting. Use rigid tubing.
4. Vent the drain tubing between the ice machine and the building drain.

Do not Tee ice machine drains into the drain tube from the ice storage bin or dispenser. Back ups could contaminate and / or melt the ice in the bin or dispenser. Be sure to vent the bin drain.

Follow all local and national codes for tubing, traps and air gaps.



N0422, F0522, N0622, F0822, N0922, F1222, N1322, F1522

E Series Air, Water or Remote User Manual Final Check List

After connections:

1. Wash out the bin. If desired, the interior of the bin could be sanitized.
2. Locate the ice scoop (if supplied) and have it available for use when needed.
3. Remote only: Switch on the electrical power to warm up the compressor. Do not start the machine for 4 hours.

Final Check List:

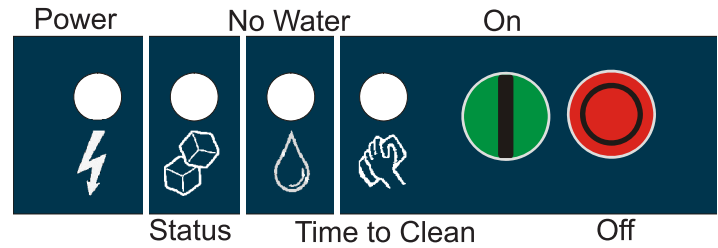
1. Is the unit located indoors in a controlled environment?
2. Is the unit located where it can receive adequate cooling air?
3. Has the correct electrical power been supplied to the machine?
4. Have all the water supply connections been made?
5. Have all the drain connections been made?
6. Has the unit been leveled?
7. Have all unpacking materials and tape been removed?
8. Has the protective covering on the exterior panels been removed?
9. Is the water pressure adequate?
10. Have the drain connections been checked for leaks?
11. Has the bin interior been wiped clean or sanitized?
12. Have any water filter cartridges been replaced?
13. Have all required kits and adapters been properly installed?

Control and Machine Operation

Once started, the ice machine will automatically make ice until the bin or dispenser is full of ice. When ice level drops, the ice machine will resume making ice.

Caution: Do not place anything on top of the ice machine, including the ice scoop. Debris and moisture from objects on top of the machine can work their way into the cabinet and cause serious damage. Damage caused by foreign material is not covered by warranty.

There are four indicator lights at the front of the machine that provide information on the condition of the machine: **Power, Status, Water, De-scale & Sanitize.**



Note: If the De-Scale & Sanitize light is ON, following the cleaning process will clear the light for another cleaning time interval.

Two button switches are at the front – On and Off. To switch the machine OFF, push and release the Off button. The machine will shut off at the end of the next cycle. To switch the machine ON, push and release the On button. The machine will go through a start up process and then resume ice making.

Lower Light and Switch Panel

This user accessible panel provides important operational information and duplicates the lights and switches on the controller. It also allows access to the On and Off buttons that operate the ice machine.

Sometimes access to the switches should be limited to prevent unauthorized operation. For that purpose a fixed panel is shipped in the hardware package. The fixed panel cannot be opened.

To install the fixed panel:

1. Remove the front panel and remove the bezel.
2. Spread the bezel frame open and remove original door, insert fixed panel into bezel. Be sure it is in the closed position.
3. Return bezel to panel and install panel on unit.

N0422, F0522, N0622, F0822, N0922, F1222, N1322, F1522

E Series Air, Water or Remote User Manual

Initial Start Up and Maintenance

1. Turn the water supply on. Remote models also open the liquid line valve.
2. Switch the electrical power on. Confirm voltage is correct for the model.
3. Push and release the On button. The machine will start in about two minutes.
4. Soon after starting, air cooled models will begin to blow warm air out the back of the cabinet and water cooled models will drain warm water from the condenser drain tube. Remote models will be discharging warm air from the remote condenser. After about 5 minutes, ice will begin to drop into the bin or dispenser.
5. Check the machine for unusual rattles. Tighten any loose screws, be sure no wires are rubbing moving parts. Check for tubes that rub. Remote models check brazed connections for leaks, retighten as needed.
6. Fill out the warranty registration form and either file it on line or mail it.
7. Notify the user of the maintenance requirements and whom to call for service.

Maintenance

This ice machine needs five types of maintenance:

- Air cooled and remote models need their air filters or condenser coils cleaned regularly.
- All models need scale removed from the water system.
- All models require regular sanitization.
- All models require sensor cleaning.
- All models require a top bearing check.

Maintenance Frequency:

Air filters: At least twice a year, but in dusty or greasy air, monthly.

Scale removal. At least twice a year, in some water conditions it might be every 3 months. The yellow De-Scale & Sanitize light will switch on after a set period of time as a reminder. The default time period is 6 months of power up time.

Sanitizing: Every time the scale is removed or as often as needed to maintain a sanitary unit.

Sensor Cleaning: Every time the scale is removed.

Top bearing check: At least twice a year or every time the scale is removed.

Maintenance: Air filters

1. Pull air filter(s) from panel.
2. Wash the dust and grease off the filter(s).
3. Return it(them) to their original position(s).

Do not operate the machine without the filter in place except during cleaning.

Maintenance: Air cooled condenser

If the machine has been operated without a filter the air cooled condenser fins will need to be cleaned.

They are located under the fan blades. The services of a refrigeration technician will be required to clean the condenser.

Maintenance: Remote air cooled condenser

The condenser fins will occasionally need to be cleaned of leaves, grease or other dirt. Check the coil every time the ice machine is cleaned.

Maintenance: Exterior Panels

The front and side panels are durable stainless steel. Fingerprints, dust and grease will require cleaning with a good quality stainless steel cleaner

Note: If using a sanitizer or a cleaner that contains chlorine on the panels, after use be sure to wash the panels with clean water to remove chlorine residue.

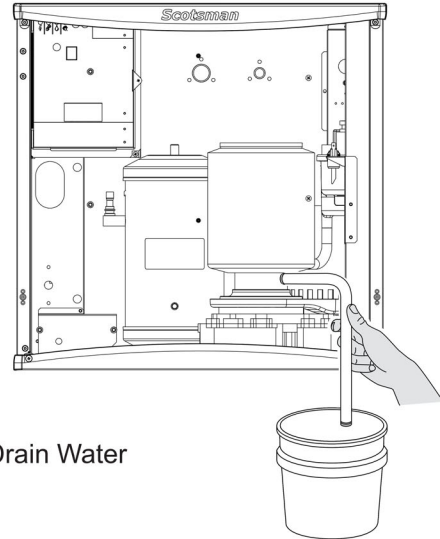
Maintenance: Water filters

If the machine has been connected to water filters, check the cartridges for the date they were replaced or for the pressure on the gauge. Change cartridges if they've been installed more than 6 months or if the pressure drops too much during ice making.

**E Series Air, Water or Remote User Manual
Maintenance: Scale Removal and Sanitation**


Note: Following this procedure will reset the de-scale and sanitize light.

1. Remove front panel.
2. Push and release the Off button.
3. Remove ice from bin or dispenser.
4. Turn the water supply to the float valve OFF.
5. Drain the water and evaporator by disconnecting the leg of the hose connected to the water sensor and draining it into the bin. Return the hose to its original position.
6. Remove the water reservoir cover.
7. Mix a solution of 8 ounces of Scotsman Clear One Scale Remover and 3 quarts of 95-115 degree F. potable water.



Drain Water

Discard or melt all ice made during the previous step.

WARNING	Ice machine scale remover contains acids. Acids can cause burns. If concentrated cleaner comes in contact with skin, flush with water. If swallowed, do NOT induce vomiting. Give large amounts of water or milk. Call Physician immediately. Keep out of the reach of children.
	

8. Pour the scale remover solution into the reservoir. Use a small cup for pouring.
9. Push and release the Clean button: the auger drive motor and light are on, C is displayed and the De-scale light blinks. After 20 minutes the compressor will start.
10. Operate the machine and pour the scale remover into the reservoir until it is all gone. Keep the reservoir full. When all the scale remover solution has been used, turn the water supply back on. After 20 minutes of ice making the compressor and auger motor will shut off.
11. Turn the water supply to the ice machine OFF
12. Drain the water reservoir and evaporator by disconnecting the leg of the hose connected to the water sensor and draining it into the bin or a bucket. Return the hose to its original position.

13. To sanitize the water system, mix a locally approved sanitizing solution. An example of a sanitizing solution is mixing one ounce of liquid household bleach and two gallons of 95 – 115 degree F. water.
14. Pour the sanitizing solution into the reservoir.
15. Push and release the On button.
16. Switch the water supply to the ice machine on.
17. Operate the machine for 20 minutes.
18. Push and release the Off button.
19. Wash the reservoir cover in the remaining sanitizing solution.
20. Return the reservoir cover to its normal position.
21. Melt or discard all ice made during the sanitizing process.
22. Wash the inside of the ice storage bin with the sanitizing solution.
23. Push and release the On button.
24. Return the front panel to its original position and secure with the original screws

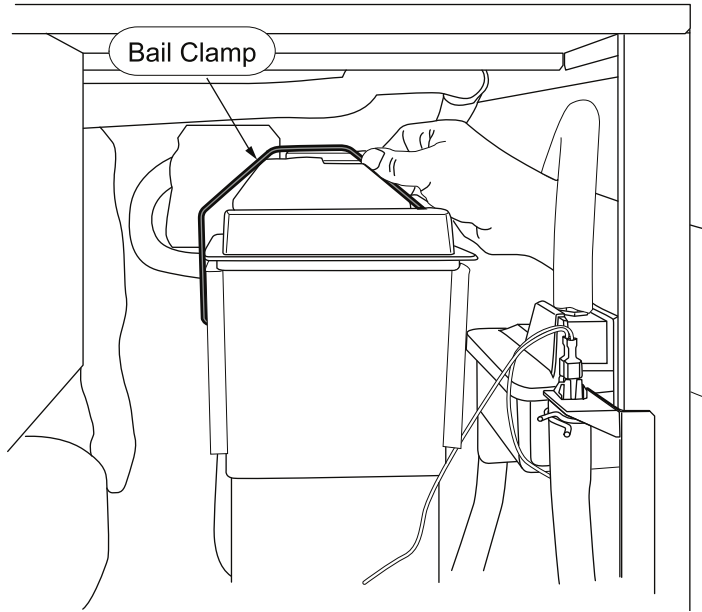
N0422, F0522, N0622, F0822, N0922, F1222, N1322, F1522
E Series Air, Water or Remote User Manual
Maintenance: Check Top Bearing

This task should only be done by a qualified service technician

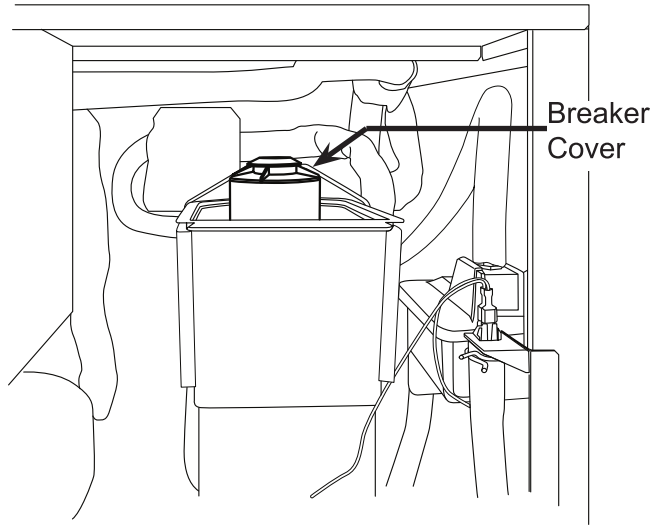
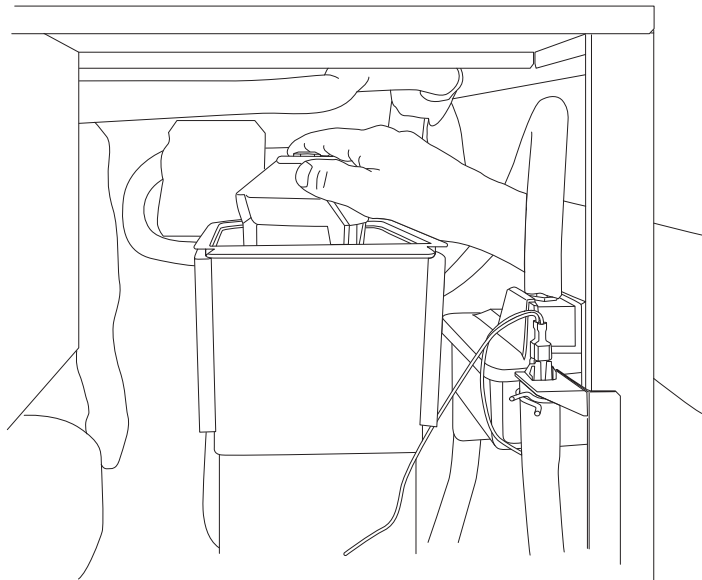
The bearing in the breaker should be checked at least two times per year.

Check the bearing by:

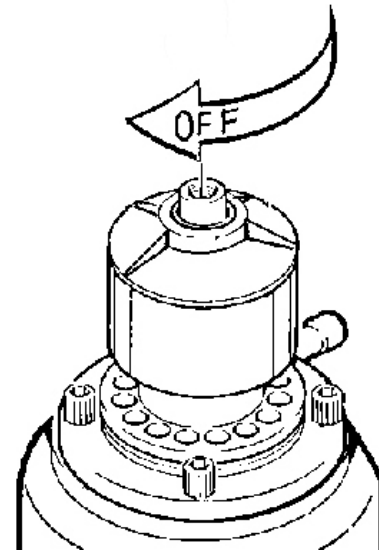
1. Removing the bail clamp and ice chute cover



2. Unscrewing the ice sweep



3. Removing the water shed & unscrewing the breaker cover (left hand threads).



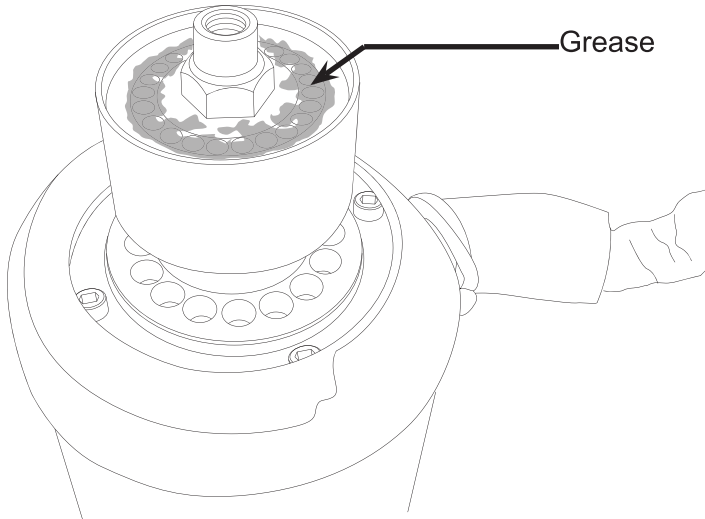
Inspect the top of the bearing. When new the grease is white, over time some gray will appear over the rollers, that is normal. Add grease to replace the gray grease or if gaps between rollers are visible. If grease is watery, all gray or rust is visible, have the bearing replaced. See the next page for more information.

Note: When checking the top bearing, always inspect the drip pan for water seal leaks. If water is present in the drip pan, service the water seal and check the gear reducer's lubricant. See the next page.

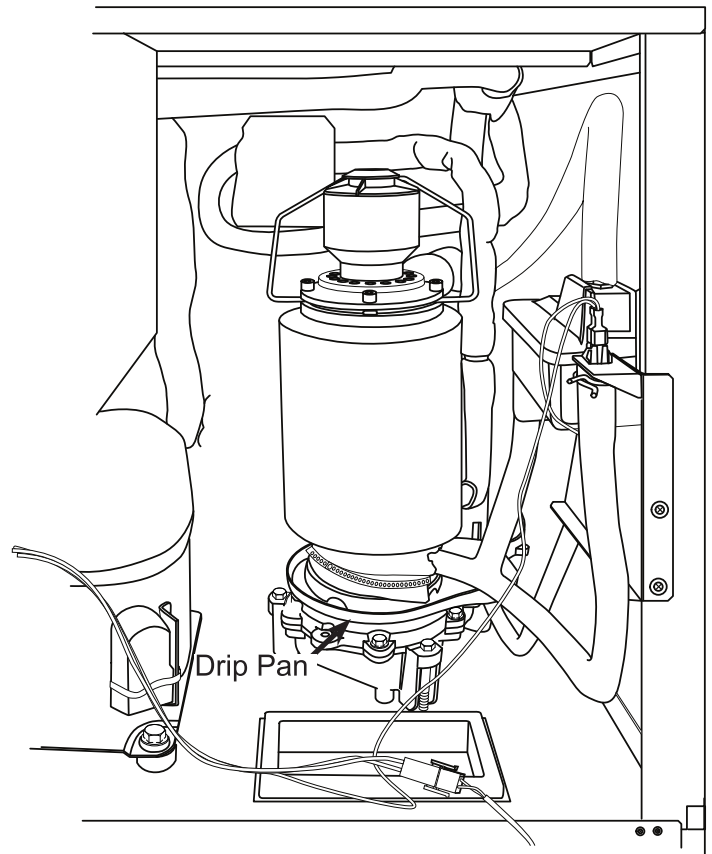
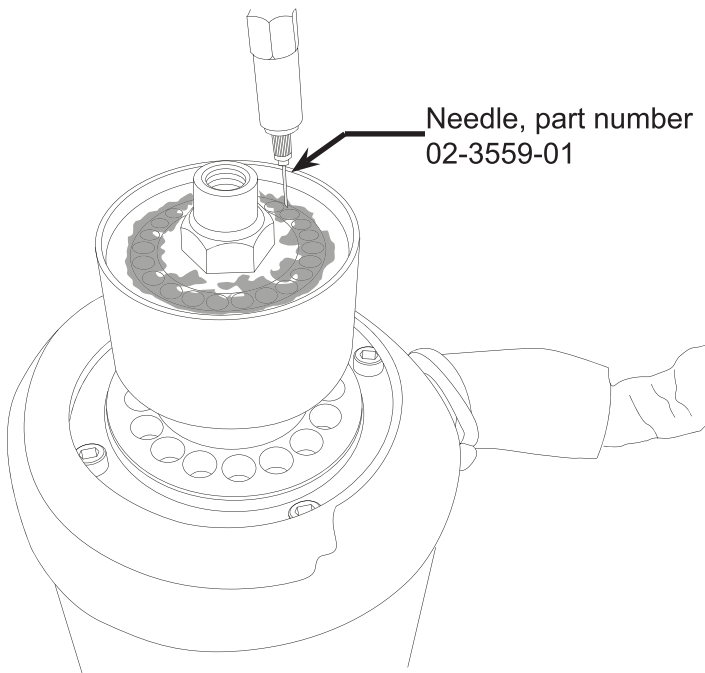
Bearing Service

This task should only be done by a qualified service technician

If the grease is uniformly white, no further action is needed. If very gray, rusty, wet or has any embedded metal, have the bearing replaced.



If the bearing only needs grease, or to confirm the quality of the grease low in the bearing, inject grease into the lower part of the bearing using Scotsman grease needle pn 02-3559-01 and Scotsman bearing grease cartridge, pn A36808-001. Be sure to inject grease evenly and thoroughly.



Change De-Scale Notification Interval

This feature is accessible only from standby (Status Light Off).

1. Press and hold Clean button for 3 seconds.

This starts the Time to Clean Adjustment State and displays the current time to clean setting.

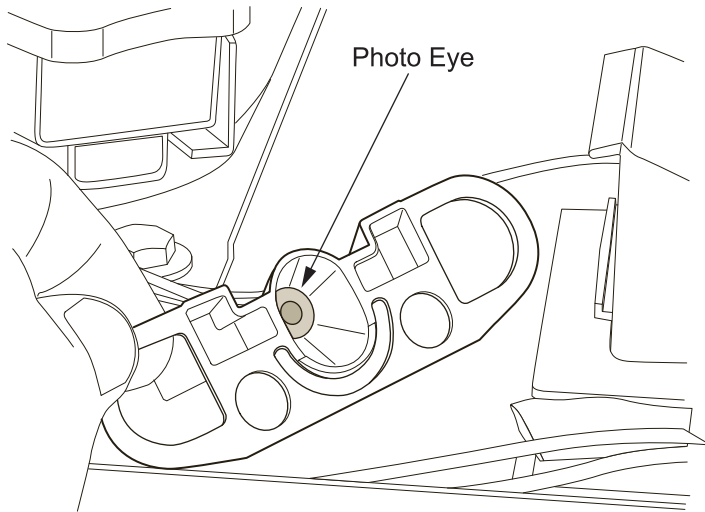
2. Press the clean button repeatedly to cycle through the 4 possible settings:

- 1 year
- 0 (disabled)
- 4 months
- 6 months(default)

3. Push Off to confirm the selection.

Maintenance: Sensors

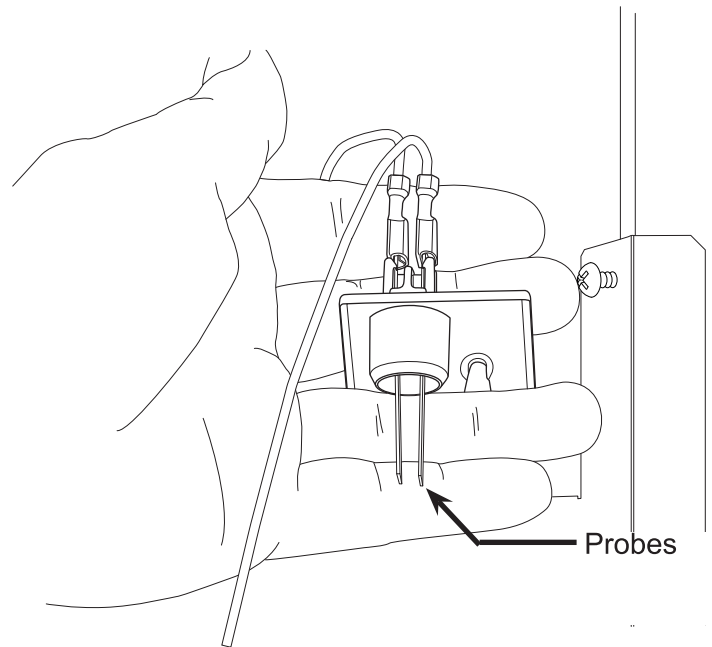
The control that senses bin full and empty is a photo-electric eye, therefore it must be kept clean so it can “see”. At least twice a year, remove the ice level sensors from the base of the ice chute, and wipe the inside clean, as illustrated.



1. Remove front panel.
2. Pull photo eye holders forward to release them.
3. Wipe clean as needed. Do not scratch the photo-eye portion.
4. Return the eye holders to their normal positions and return the front panel to its original position.

Note: Eye holders must be mounted properly. They snap into a centered position and are properly located when the wires are routed to the back and the left eye is the one with 2 wires at the connector.

The ice machine senses water by a probe located near the water reservoir. At least twice a year, the probe should be wiped clean of mineral build-up.



1. Shut off the water supply.
2. Remove front panel.
3. Remove the hose from the water sensor, use a hose clamp pliers for this.
4. Loosen mounting screw and release the water sensor from the frame of the unit.
5. Wipe probes clean,

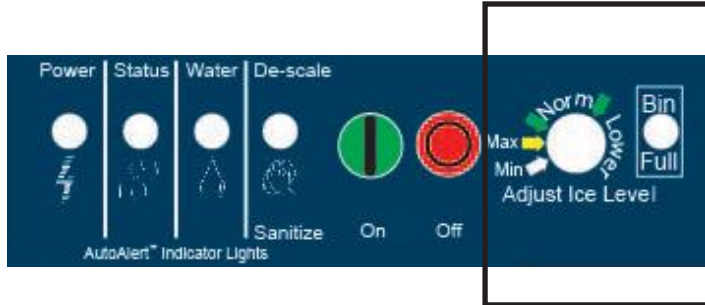
N0422, F0522, N0622, F0822, N0922, F1222, N1322, F1522

E Series Air, Water or Remote User Manual

Options

Vari-Smart

Optional adjustable ice level control (KVS). When this option is present there is an adjustment post and an additional indicator light to the right of the four indicator lights mentioned earlier.



The ultrasonic ice level control allows the user to control the point that the ice machine will stop making ice before the bin or dispenser is full.

Reasons for this include:

- Seasonal changes in ice used
- Planning to sanitize the bin
- Faster turnover for fresher ice
- Certain dispenser applications where maximum ice level is not desired

Use of adjustable ice level control

There are several positions the ice level can be set to, including Off or Max (knob and label indicators lined up), where it fills the bin until the standard bin control shuts the machine off. See the kit's instructions for complete details.



Rotate the adjustment post to the desired ice level.

The machine will fill up to that level and when it shuts off the indicator light next to the adjustment post will be On.

Note: The maximum fill position is when the arrow on the knob points to the arrow on the label.

Dispenser applications - Nugget ice only:

Set the adjustment knob arrow to the Norm area between the green arrows. Select either the first or second positions as a starting point and adjust as needed.

N0422, F0522, N0622, F0822, N0922, F1222, N1322, F1522

E Series Air, Water or Remote User Manual

What to do before calling for service

Normal Operation:

Ice

The machine will make either flaked or nugget ice, depending upon the model. The ice will be produced continuously until the bin is full. It is normal for a few drops of water to occasionally fall with the ice.

Heat

On remote models most heat is exhausted at the remote condenser, the ice machine should not generate significant heat. Water cooled models also put most of the heat from ice making into the discharge water. Air cooled models will generate heat, and it will be discharged into the room.

Noise

The ice machine will make noise when it is in ice making mode. The compressor and gear reducer will produce sound. Air cooled models will add fan noise. Some ice making noise could also occur. These noises are all normal for this machine.

Reasons the machine might shut itself off:

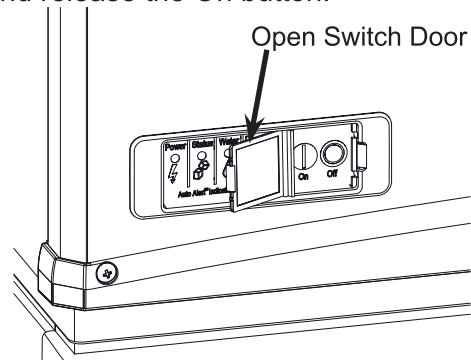
- Lack of water.
- Does not make ice
- Auger motor overload
- High discharge pressure.
- Low refrigeration system pressure.

Check the following:

1. Has the water supply to the ice machine or building been shut off? If yes, the ice machine will automatically restart within minutes after water begins to flow to it.
2. Has power been shut off to the ice machine? If yes, the ice machine will automatically restart when power is restored.
3. Has someone shut the power off to the remote condenser while the ice machine still had power? If yes, the ice machine may need to be manually reset.

To Manually Reset the machine.

- Open the switch door
- Push and release the Off button.
- Push and release the On button.



To Shut the Machine Off:

Push and hold the Off button for 3 seconds or until the machine stops.

	Indicator Lights & Their Meanings			
	Power	Status	Water	De-Scale & Sanitize
Steady Green	Normal	Normal	-	-
Blinking Green	Self Test Failure	Switching on or off. When Smart-Board used, machine attention recommended.	-	-
Blinking Red	-	Diagnostic shut down	Lack of water	-
Yellow	-	-	-	Time to descale and sanitize
Blinking Yellow	-	-	-	In Cleaning Mode
Light Off	No power	Switched to Off	Normal	Normal

SCOTSMAN ICE SYSTEMS

101 Corporate Woods Parkway

Vernon Hills, IL 60061

800-726-8762

www.scotsman-ice.com

MODEL NUMBER
N0622A - 1B



SERIAL NUMBER
14111320012976



AC SUPPLY VOLTAGE	115	HERTZ	60
TOTAL LOAD AMPS		PHASE	1
MINIMUM CIRCUIT AMPACITY	18.3	WIRES	2
MAX FUSE SIZE OR HACR TYPE CIRCUIT BREAKER			25
HEATER WATTS			

MOTORS		VOLTS	RLA/FLA	W/HP	LRA
1	COMPRESSOR	115	9.7		50.0
2	FAN	115	.8	16	
1	DRIVE	115	4.6	1/4	

RATED POWER CONSUMPTION (KW)

REFRIGERANT 404A CHARGE/CIRCUIT 14.0 OZ 397 GRAMS

NUMBER OF REFRIGERANT CIRCUITS



DESIGN PRESSURES	P.S.I.	250	- LO	500	- HI
	BARS	17.6	- LO	35.1	- HI
	MPa	1.724	- LO	3.448	- HI



ICEMAKER WITHOUT STORAGE MEANS



Scotsman

SCOTSMAN ICE SYSTEMS
FAIRFAX, SC USA

Existing Tag

Construct New FOB North
Expand FOB Sentinel South
Attachment

- Section 1400, Environmental Protection

SECTION 01400 - ENVIRONMENTAL PROTECTION

1. APPLICABLE ENVIRONMENTAL REGULATIONS, LAWS, AND PUBLICATIONS:

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only. All publications shall be the latest version / edition / revision of the documents listed below, in effect on the date of this solicitation, except where a date is given.

1.1 Code of Federal Regulations (CFR):

29 CFR, Part 1910	Hazardous Waste Operation and Emergency Response
40 CFR 61, Subpart M	National Emissions Standard for Hazardous Air Pollutants
40 CFR, Part 82	Protection of Stratospheric Ozone
40 CFR, Part 117	Determination of Reportable Quantities for Hazardous Substances
40 CFR, Part 122	National Pollutant Discharge Elimination System (NPDES) Regulations
40 CFR, Parts 260 - 282	Solid Waste Regulations
40 CFR, Part 302	Designation, Reportable Quantities, and Notification
49 CFR, Parts 171-176	Hazardous Materials Regulations, Department of Transportation, (DOT) Rules

1.2 Environmental Protection Agency Publication (EPA):

EPA Publication No. SW-846	Test Methods for Evaluating Solid Waste
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1.3 Environmental Laws:

Archaeological and Historic Preservation Act (AHPA)

Archaeological Resources Protection Act (ARPA)

Clean Air Act (CAA) and all amendments

Clean Water Act (CWA) as amended

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

Endangered Species Act (ESA)

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

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) as amended

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

1.4 State Regulations (Texas Administrative Code):

25 TAC	295	Occupational Health
30 TAC	205	General Permit to Discharge Waste
30 TAC	290	Public Drinking Water
30 TAC	335	Industrial Solid Waste and Municipal Hazardous Waste

1.5 Air Force Instruction (AFI):

32-7001 Environmental Management

1.6 Air Force Manual (AFMAN)

32-7002 Environmental Compliance and Pollution Prevention

1.6 Energy Independence and Security Act (EISA) Section 438

2. ENVIRONMENTAL ISSUES

2.1 Activities which are implemented, in whole or in part with approved funding, must comply with applicable legislation and regulations established to protect the human or physical environment. The Contractor will remain in compliance with Federal statutes during the performance of the contract, including but not limited to the Clean Air Act (CAA), Clean Water Act (CWA), Endangered Species Act (ESA), Resource Conservation and Recovery Act (RCRA), and other applicable laws, regulations, and requirements.

2.2 In order to comply with all Environmental Laws and Regulations as set forth by Federal, State, Department of Defense, Air Force and any other mandated requirements for Federal installations, Goodfellow AFB (GAFB) must comply with and are required to track all chemicals (hazardous materials), air emissions, stormwater, and construction and debris (C&D) that are transported, managed, used, and disposed of from any part of this installation are properly identified, managed, and tracked. This

requirement is for all installation organizations, workplaces, work centers, shops, and for all Contractors doing any work on the installation. Contractors shall investigate, comprehend, and comply with all environmental rules and regulations applicable to their chosen method of accomplishment of the work under this contract.

2.3 The Contractor will be responsible for and will indemnify and hold the Government harmless for any and all spills, releases, emissions, and discharges of any toxic or hazardous substance, any pollutant, or any waste, whether sudden or gradual, caused by or arising under the performance of this contract or any substance, material, equipment, or facility utilized therefore for the purposes of any environmental statute or regulation, the Contractor will be considered the "operator" for any facility utilized in the performance of the contract, and will indemnify and hold the Government harmless for the failure to adhere to any applicable law or regulation established to protect the human or physical environment. The Contractor will be responsible in the same manner as above regardless of whether activities leading to or causing a spill, release, emission, or discharge is performed by the contractor, its agent or designee, an offender, visitor, or any third party.

3. PROTECTION OF RESOURCES: Construction activities are NOT exempt from air emission, stormwater, hazardous waste, and other environmental compliance rules and regulations. Contractor shall investigate, comprehend, and comply with all environmental rules and regulations applicable to his/her chosen method of accomplishment of the work under this contract.

3.1 Protection of Land Resources: The Contractor shall confine his/her construction activities to areas defined by the plans and specifications and/or as approved in his/her Storage Area submittal (refer to paragraph 7 of Section 01010). Except in areas to be cleared, the Contractor shall not remove, cut, deface, injure or destroy trees or shrubs without written permission from the Natural Resource Officer/Manager and Contracting Officer. Do not fasten or attach ropes, cables, or guys to existing or nearby trees for anchorage unless authorized by the Natural Resource Officer/Manager and the Contracting Officer. Where such use of ropes, cables, or guys is authorized, the Contractor shall be responsible for any resultant damage.

3.2 NOT APPLICABLE - ~~Protection of the Stratospheric Ozone: The Contractor shall comply with 40 CFR Part 82. To the maximum extent practicable, the Contractor shall utilize safe alternatives and products made with or containing safe alternatives to Class I or II Ozone Depleting Substances (ODS), identified under 42~~

~~U.S.C. 7671K. Class I Ozone Depleting Substance is defined in section 602 (a) of the Clean Air Act (CAA).~~

~~Per manufacturer's recommendations, Contractor's shall utilize acceptable refrigerant substitutes such as:~~

~~HCFC 134a HFC 410a~~

3.3 Protection of Historical and Archaeological Resources: All known Historical, Archaeological, and Cultural Resources, if any, within the Contractors work area will be designated on the contract drawings. The Contractor shall take precautions during the contract to preserve all Resources as they existed at the time of contract award and comply with the Archaeological and Historic Preservation Act (AHPA) and the Archaeological Resources Protection Act (ARPA). The Contractor shall provide all protective devices such as off limit markings, fencing, barricades, or other devices as designated on the contract drawings and shall be responsible for preservation of the sites during this contract.

3.3.1 Recording and Preserving Historical and Archaeological Finds: All items having any apparent historical or archaeological interest outside of designated areas which are discovered in the course of any construction activities shall be carefully preserved. The Contractor shall protect the find in-place by leaving the archaeological find undisturbed and by using flags to mark a fifty-foot radius area around the find. The find shall be immediately reported to the Contracting Officer and the Cultural Resources Manager so that the proper authorities may be notified. All work shall be stopped at once in the immediate area of the discovery until directed by the Contracting Officer to resume work. Any work required to preserve or protect these finds shall be accomplished before work resumes.

3.4 Protection of Water Resources: The Contractor shall not pollute streams, lakes, or reservoirs with fuels, oils, bitumens, calcium chloride, acids, construction wastes, siltation from stormwater runoff, or other harmful materials identified in 40 CFR Parts 117 and 302. It is the responsibility of the Contractor to investigate, comprehend, and comply with all applicable Federal, State, County, and Municipal regulations and ordinances concerning pollution of rivers and streams. All work under this contract shall be performed in such a manner that objectionable or nuisance conditions will not be created in lakes, reservoirs, or streams through or adjacent to the project areas. At least 30 days prior to the start of construction, the Contractor shall apply for coverage under the storm water construction general permit TX 150000, by filing a Notice of Intent (NOI) via the Texas Commission on Environmental Quality (TCEQ) Form 20022 for stormwater discharges associated with his/her construction activities for all soil disturbance of more than one acre. A pre-requisite of filing the NOI is to prepare a Storm Water Pollution Prevention Plan (SWPPP) meeting all regulatory requirements and show the Contractor's proposed methodology for controlling erosion, sedimentation, and pollution at the site. Copies of this plan shall be submitted for Government Approval (GA) and copies of the NOI shall be submitted to the Contracting Officer and to the 17 CES Environmental Element/Water Quality Manager. All non-storm water discharges shall be in accordance with the governing State and Federal regulations. Any Task Order which adds 5,000 SF or more of new horizontal impervious surface must be Energy Independence and Security Act (EISA) Section 438 compliant.

3.4.1 NOT APPLICABLE - ~~For all soil disturbance of more than one acre, the Contractor shall prepare a Storm Water Pollution Prevention Plan (SWPPP) meeting all requirements specified in the construction general permit and will include the Contractor's Best Management Practices for erosion and sedimentation control at the site. Copies of this plan shall be submitted for Government Approval (GA) via AF Form 3000.~~

3.4.2 Regardless of the amount of soil disturbed, all non-storm water discharges shall conform with the base's Storm Water Management Program regulated by TPDES General Permit TXR040000 for Small Municipal Separate Storm Sewer Systems (MS4).

3.4.3 NOT APPLICABLE - ~~If a Notice of Intent (NOI) is required for permit coverage, the Contractor shall submit the NOI to the State and provide copies to the Government via Form 3000 for FIO. Contractor shall make required MS4 notifications to the City of San Angelo and the base. Copies of all notifications will be provided to the Contracting Officer via Form 3000 FIO. Contractor shall be responsible for fees associated with obtaining coverage under permit TXR150000.~~

3.4.4 NOT APPLICABLE - ~~The Contractor shall also file a Notice of Termination (NOT) TCEQ Form 20023 promptly after site stabilization is achieved, in accordance with the construction general permit. These forms may be found at the TCEQ website (<http://www.tceq.texas.gov>). The prime Contractor's principal shall sign to certify the NOI/NOC/NOT or Construction Site Notice. A copy of the NOT shall be provided to the Contracting Officer and Base Environmental Coordinator, FIO.~~

3.4.5 NOT APPLICABLE - ~~The Government will specify if the contracted project is part of a larger common development requiring additional storm water measures be taken to obtain permit coverage, or if the project area of construction is greater than five acres.~~

3.4.6 Post-Construction Cleanup or Obliteration: The Contractor shall obliterate all evidence of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess materials, or any other vestiges of construction. It is anticipated that excavation, filling, and plowing of roadways shall be required to restore the area to near natural conditions, which will permit the growth of vegetation thereon. The disturbed areas shall be graded and filled as required, and topsoil shall be spread to a depth of approximately four inches over the entire area and the entire area seeded with thirty pounds (pure live seed) of common Bermuda per 1000 square feet, and then watered as required until a lush, hardy growth is established to the satisfaction of the Contracting Officer. Restoration to original contours is required unless otherwise directed by the Contracting Officer. If applicable, final stabilization shall be achieved prior to terminating the TXR 150000 Construction General Permit coverage.

3.5 Protection of Fish and Wildlife: The Contractor shall follow all Federal, State, County, and Municipal laws regarding the protection of fish and wildlife. The Contractor shall at all times perform all work and take such steps required to prevent any interference of disturbance to fish and wildlife. The Contractor shall not alter water flows or otherwise disturb native habitat adjacent to the project area, which, through Contracting Officer and GAFB Natural Resources Officer/Manager, that are critical to fish or wildlife. Construction of check dams in live streams will not be permitted. Fouling or polluting of water will not be permitted. Harassment, harvesting, or taking of any wildlife is not permitted on Federal property, nor is the taking of any resource such as antler sheds, skulls, plant life, or rocks/gems.

3.6 Protection of Air Quality: The Contractor shall investigate, comprehend, and comply with all applicable Federal, State, County and Municipal laws concerning air pollution, particularly the CAA (and all subsequent amendments). All work under this contract shall be performed in such a manner that objectionable or nuisance conditions will not be created in the air, nor will objectionable particulates be released to the air. Material usage of welding rods, welding gases, paints, thinners, solvents, fuels, and asphalt will require reporting to (through Contracting Officer) GAFB Air Quality Program Manager, 17 CES/CEIEC (325)-654-5946 monthly throughout the project (VIA AF Form 3000). No open burning shall be permitted on base.

3.6.1 Dust Control: The Contractor shall maintain all excavations, embankments, stockpiles, haul roads, permanent access roads, plant sites, waste areas, borrow areas, and all other work areas within or without the project boundaries free from dust in accordance with all applicable local, state, and Federal regulations for the control of dust and particulate emissions. Temporary methods of stabilization consisting of sprinkling with water are required to control dust. Sprinkling with water shall be repeated at such intervals as to keep all parts of the disturbed area at least damp at all times. Gravel paving shall be provided for entrance and exit drives, parking areas, and unpaved roads carrying more than 25 vehicles per day on the construction site.

4. POLLUTION PREVENTION AND RIGHT TO KNOW REQUIREMENTS:

4.0 HAZARDOUS MATERIALS:

4.1 Contractors using any type of chemicals (hazardous materials) on Goodfellow AFB must comply with the review and approval process and shall provide the Contracting Officer with a list of proposed materials that it plans to use on the installation during the performance of the contract.

4.2 The Contractor shall provide to the Contracting Officer an AF Form 3000, Material and Approval Submittal, listing all materials that will be utilized during the contract period. If any of the material is classified as hazardous and is covered under Emergency Planning and Community Right-to-Know Act (EPCRA) (42 U.S.C. 11001-11050) or other applicable host Nation, Federal, State, or Local tracking or reporting requirements and also covered under the Occupational Safety and Health Administration (OSHA) Hazard Communication (HAZCOM) Standard (29 CFR 1910.1200).

4.2.1 The Installation HAZMAT Management Program (IHMP) office will determine if any of the proposed materials to be used are hazardous materials (HAZMATs) and will require approval authorizations prior to bringing on or using any of those materials on the installation.

4.3 The Contractor will submit a Chemical/Hazardous Material Request Authorization (form will be provided to Contractor) for each of the material items with all supporting information as required for approval and must supply an up-to-date, current Safety Data Sheet (SDS) for each requested item listed as a hazardous material, as defined to be delivered under this contract. The Contractor must maintain a file of all SDS during the performance of this contract.

4.4 The Contractor must obtain written authorization from the Contracting Officer and IHMP office prior to bringing or using any hazardous chemicals on the installation. The Contractor shall submit for Government Approval (via AF Form 3000) to the Contracting Officer on a monthly, quarterly basis, or at the end of the contract, as determined by the Contracting Officer and the IHMP. The report usage of all HAZMAT materials will be in two or more copies within that period on the required Contractor Hazardous Materials Usage Tracking Form.

4.4.1 The main Contractor is responsible for the chemical submittals for approval and all required reporting requirements for all sub-contractors who will be working on the project from the date of their contract for working on the project and throughout the duration of their contract to the Contracting Officer and then to the IHMP office.

4.5 A copy of the DOD INSTALLATIONS OR FACILITIES STANDARD OPERATING PROCEDURE (SOP) - Contractor Tracking Requirement document will be provided to the Contractor at the pre-performance to meet the requirement for all Contractors to submit a Contractor Hazardous Materials Usage Tracking Form (to be completed by the Contractor) and copies of the Safety Data Sheets (SDS's) for all chemicals that will be used under any contract.

4.6 If additional materials are required during the course of the contract, the Contractor shall complete an authorization worksheet and provide a SDS for each additional material prior to the Contracting Officer via AF Form 3000 for Government Approval prior to bringing or using any additional materials on the installation. The Contractor shall submit the new authorization request no later than 15 days prior to delivery of the materials onto the installation.

4.7 The Contractor shall report hazardous material usage data to the IHMP office on a monthly or quarterly basis, as determined by the Contracting Officer and the IHMP via AF Form 3000 for Government Approval. The report will show the product name and part number (stock number if already

assigned to each material), any amount received during this period, unit of issue, amount used during this period, and any balance left to still be used by the Contractor.

4.8 For each Contractor-identified material that the IHMP determines does meet the Air Force definition of a HAZMAT, Civil Engineer (CE) authorization of the AF Form 3952 Hazardous Materials Authorization/Review Request Form with required supporting documentation, to include a current Safety Data Sheet (SDS) is required. The IHMP authorization must be obtained prior to bringing, or using HAZMAT on Goodfellow AFB.

4.9 Safety Data Sheets (SDS) are required as specified in the latest version of Federal Standard No. 313 (including revisions adopted during the term of the contract) for any other material designated by a Government technical representative as potentially hazardous and requiring safety controls. SDSs must be submitted by the Contractor upon contract award. Failure to provide SDSs or certificate when requested could result in the Contractor being considered non-responsive and result in termination of the contract.

4.9.1 While there is no single definition that encompasses every type of hazardous chemicals, these items generally have a Safety Data Sheet (SDS) prepared by the manufacturer. It is important to note that not every material with an SDS is not automatically considered a hazardous material. When there is a question regarding whether or not a material is hazardous, additional guidance should be sought from the CO/COR where they can then pass on any questions about those materials to the installations Environmental, Safety and Occupational Health (ESOH) team thru the IHMP office.

4.9.2 Due to the new requirement of the current Globally Harmonized System (GHS) of Classification and Labeling of Chemicals, per 29 CFR 1910.1200(g) requires that the chemical manufacturer, distributor, or importer provide Safety Data Sheets (SDSs) for each hazardous chemical to downstream users to communicate information on these hazards. It also mandates that all workplaces shall not have any SDSs older than five (5) years old and meet the new GHS requirements.

4.10 The Contractor shall not use products that are, or contain Toxic 17 chemicals, Extremely Hazardous Substances (EHS), Ozone Depleting Substances (ODS), CFC's, or Persistent Bio-accumulative and Toxic (PBT) chemicals. Any Hazardous Material (HM) containing any of these banned substances will not be allowed on the installation.

4.11 If the hazardous material request is for a Class I ODS, CE will ensure there is an applicable and current Air Force Senior Acquisition Official (SAO) approval for contract Class I ODS requirements before approving the hazardous material authorization and make available to the Contractor.

4.12 If there is a change in IHMP-approved HAZMAT, the Contractor shall promptly notify the Contracting Officer and resubmit data as required.

4.13 For each Contractor-identified chemical that the IHMP determines does not meet the definition of a HAZMAT, IHMP requirements do not apply. IHMP will notify the Contracting Officer that the Contractor has authorization to bring and use that material on the installation without reporting usage unless required under Green Procurement Program or specifications requiring data submittals.

4.14 Reporting Requirements: The Contractor shall submit all information needed by the base to comply with the following:

- a. Emergency planning reporting requirements of Section 302 of EPCRA.
- b. Emergency notice requirements of Section 304 of EPCRA
- c. List of Safety Data Sheets required by Section 311 of EPCRA
- d. Emergency and hazardous chemical inventory forms of Section 312 of EPCRA
- e. Toxic chemical release inventory of Section 313 of EPCRA, which includes the reduction and recycling information required by Section 6607 of PPA
- d. Toxic chemical reduction goals requirements of Section 3-302 of Executive Order 12856
- e. Pollution Prevention and Right-to-Know Information as per the FAR 52.223-5 (Apr 1998)
- f. Executive Order 13148 Greening the Government Through Leadership in Environmental Management
- g. Executive Order 13423, Strengthening Federal Environmental, Energy and Transportation Management

5. DISPOSAL OF WASTES (NON-HAZARDOUS, SPECIAL, AND HAZARDOUS) GENERATED AT GOODFELLOW AFB: (Refer to Specification Section 01010 paragraph 6.1 for waste determination and classification).

5.1 Non-Hazardous Wastes: Non-hazardous solid waste is regulated under 42 U.S. Code Chapter 82 – Solid Waste Disposal - Resource Conservation and Recovery Act (RCRA) Subtitle D, 40 CFR Part 239-259 and under State of Texas 30 TAC §330 - Municipal Solid Waste Rules. Regulations established under Subtitle D ban open dumping of waste and set minimum federal criteria for the operation of municipal waste and industrial waste landfills, including design criteria, location restrictions, financial assurance, corrective action (cleanup), and closure requirement. States play a lead role in implementing these regulations and may set more stringent requirements. In absence of an approved State program, the Federal requirements must be met by waste facilities.

5.2 The Contractor shall transport and dispose of all non-hazardous wastes to and in a State of Texas permitted facility or other disposal facility permitted by the state in which the disposal facility is located. Special Wastes: Special Wastes are any wastes that are non-hazardous yet have to be stored, transported, and/or disposed of in a special manner; for example, asbestos containing wastes or petroleum contaminated soil. Contractor shall store, transport and dispose of all Special Wastes in accordance with all Federal, State, and Local laws, rules and regulations as applicable. Contractor shall dispose of Special Wastes in a State of Texas permitted facility. The disposal facility must also be approved by the Installations Environmental Office prior to transportation. Contractor shall make all necessary arrangements with the disposal facility for disposal of Special Wastes. Contractor shall submit all necessary paper work, including but not limited to, bill of lading, manifests, etc. at no additional cost to the Government.

6. HAZARDOUS WASTE:

6.1 The Contractor shall accumulate, transport, and dispose of all hazardous waste in accordance with Federal hazardous waste regulations 40 CFR 260-279 and Texas industrial solid and municipal hazardous waste regulation 30 TAC 335, and Federal transportation regulations 49 CFR 171-176. The Contractor shall prepare and maintain all records, shipping documents, training certificates, plans, and other documents required by regulation. The Contractor shall submit for information (FIO), a copy of all of the records, shipping documents, training certificates, plans and other documents required in 30 TAC, Chapter 335 to the Contracting Officer. This includes copies of the manifests and land disposal restrictions. All manifests and land disposal restrictions must be signed by the Installations Environmental Office.

6.2 The Contractor shall remove all hazardous waste from Goodfellow AFB on a daily basis unless the accumulation and storage is specifically approved in writing by the Contracting Officer and the Installations Environmental Office. Such approval must be given prior to the generation of any hazardous waste. Approval for accumulation or storage of hazardous wastes in excess of 55 gallons or greater than 1 quart acutely hazardous waste, for greater than three (3) calendar days will require a minimum lead time of forty-five (45) calendar days from the date of the receipt of the request and may not be approved at that time. The Contractor shall transport hazardous wastes from Goodfellow AFB to a Treatment, Storage, or Disposal Facility (TSDF) permitted by the State of Texas, the EPA, and approved by the Base Environmental Coordinator. Under no circumstances shall disposal or treatment of hazardous wastes be allowed on Goodfellow AFB by the Contractor.

6.3 Reasonable and appropriate measures shall be taken by the Contractor to prevent chemicals, fuels, oils, greases, bituminous materials, waste washings, herbicides and insecticides, and construction materials or debris from polluting the construction site and surrounding area.

6.3.1 The Contractor will be responsible for any and all spills, releases, emissions, and discharges of any toxic or hazardous substance, any pollutant, or any waste, whether sudden or gradual, caused by or arising under the performance of the contract or any substance, material, equipment, or facility utilized therefore for the purposes of any environmental statute or regulation to protect the human or physical environment.

6.3.2 The Contractor will be responsible in the same manner as above, regardless of whether activities leading to or causing a spill, release, emission or discharge is performed by the contractor, its agent or designee, an offender, visitor, or any third party. If the contractor spills or releases any substance into the environment, the Contractor will immediately report the incident to the Contracting Officer, the Installation Environmental Office and the Installation Fire Department.

6.3.3 The liability for the spill or release of such substances rests solely with the contractor and its agent and at no time will the contractor dispose of hazardous, toxic or caustic substances by unsafe methods. Unsafe methods include spreading or pouring it onto the ground, dumping in a lake, river or stream, and flushing into sewers.

6.3.4 Disposal of any materials, wastes, effluents, trash, garbage, oil, grease, chemicals, and similar hazardous substances shall be transported to a suitable disposal site by the Contractor subject to the approval of the Contracting Officer and the Installation Environmental Office.

6.3.5 Aerosol Cans: Aerosol cans, after use, must be punctured and drained of product and propellant via approved equipment manufactured for that purpose. The empty cans may then be recycled as scrap metal. Disposal of the internal can contents shall be accomplished according to its waste classification.

6.3.6 Other Containers: Refer to 30 TAC 335.41(f) for criteria regarding management and disposal of other containers.

6.3.6.1 Contractor shall submit certification of proper disposal (via AF Form 3000) of all wastes including original manifests signed by the transportation agent and the disposal facility operator to the Contracting Officer prior to the Final Inspection. The Contracting Officer then submits all documentation to the Installation Environmental Office.

6.3.6.2 The Government will, as is deemed necessary, inspect the Contractor's operations and records for compliance with State and Federal regulations. The Contractor shall cooperate fully with the TCEQ, US EPA and/or Government representatives during these inspections, if any. The Contractor shall be fully and completely responsible for payment of all fines and/or penalties imposed by the TCEQ or US EPA for violation of regulations governing Environmental Management during performance of this contract.

6.3.7 Contractor shall submit certification of proper disposal (via AF Form 3000) of all wastes including original manifests signed by the transportation agent and the disposal facility operator to the Contracting Officer prior to the Final Inspection. The Contracting Officer will then submit all documentation to the Installation Environmental Office.

6.4 The Government will, as is deemed necessary, inspect the Contractor's operations and records for compliance with State and Federal regulations. The Contractor shall cooperate fully with the TCEQ, US EPA and/or Government representatives during these inspections, if any. The Contractor shall be fully and completely responsible for payment of all fines and/or penalties imposed by the TCEQ or US EPA for violation of regulations governing Environmental Management during performance of this contract.

6.5 NOTICE: No hazardous materials, lubricants, oils, liquids or related materials shall be deposited in the refuse containers on base. The contractor will adhere to all other Federal, State, and Local guidelines regarding environmental practices.

7. MAINTENANCE OF POLLUTION CONTROL FACILITIES DURING CONSTRUCTION: During the life of this contract the Contractor shall maintain all facilities constructed for pollution control under this contract as long as the operations creating the particular pollutant are being carried out or until the material concerned has become stabilized to the extent that pollution is no longer being created. During the construction period, the Contractor shall conduct frequent training courses for his/her maintenance personnel. The curricula shall include methods of detection of pollution, familiarity with pollution standards, and installation and care of vegetation covers, plants, and other facilities to prevent and correct environmental pollution.

8. PESTICIDES (INSECTICIDES, FUNGICIDES, HERBICIDES, ETC.): Application of all pesticides shall be accomplished by licensed pest control applicators or under the direct supervision of a State of Texas licensed pesticide applicator. Delivery and storage of pesticides shall be monitored by licensed personnel to insure the adequacy of containers and the safe storage of toxic materials. Disposal of containers and chemicals will be monitored to prevent pollution of natural drainage systems or the

unintentional release of pesticide particulates into the air. The Contractor shall comply with FIFRA and submit copies of certifications for operator to Contracting Officer (via AF Form 3000) for approval prior to application of pesticides. Additionally, the CE Entomology Section at GAFB shall be notified at (325)-654-3496 at least five calendar days in advance by the Contractor of proposed application of any pesticides and copies of all application records shall be submitted to the CE Entomology Shop. The Contractor shall use the GAFB pesticide Application Form, available at CE Operations Flight.

9. SPILLS: Goodfellow AFB maintains, follows, and enforces the following spill plans for regulated substances.

- a. Hazardous Materials Emergency Response Plan
- b. Spill Prevention Control and Counter Measures Plan
- c. National Oil and Hazardous Substance Pollution Contingency Plan

9.1 These plans are maintained by the Installation Management Flight of Civil Engineering at 460 E. Kearney Blvd, Goodfellow AFB. The Contractor shall take preventive measures (secondary containment for fuel storage, avoid overfilling of trucks, etc.) to avoid spills. If a spill does occur, the Contractor shall immediately notify the Installations Fire Department at phone number 325-654-3532 or 325-654-7000. The Installation Fire Department is the first responder who will take charge to secure/neutralize the event, if required and will coordinate cleanup/remedial actions. Notification shall be made even if the spill is within the cleanup capabilities of the Contractor.

9.2 If the Contractor spills or releases any substance listed in 40 CFR 302 into the environment, the contractor shall immediately report the incident to the Installation Environmental Office at 325-654-5946 or 325-654-3456. The Contractor shall be liable for containment and environmental clean-up of the spill or release of such substance. Accordingly, the Contractor shall report all spills immediately, as they occur, to permit proper response by GAFB and Contractor personnel.

9.3 Accordingly, the Contractor shall report all spills immediately, as they occur, to permit proper response by GAFB and Contractor personnel. Contractor may be held liable for all expenses incurred by the Government during the spill response and any cleanup operations including, but not necessary limited to a hazardous materials/wastes cleanup, Contractor supplies and equipment rental, waste transportation, laboratory analysis, and disposal costs.

9.4 No hazardous materials, lubricants, oils, liquids or related materials shall be deposited in the refuse containers on the installation.

10. DEMOLITION

10.1 Demolition Notification: When a project involves demolition, a written notification on the form specified by the Texas Dept. of State Health Services (DSHS), shall be received by the DSHS at least twenty (20) calendar days prior to Contractor's proposed demolition start date. The notification shall be signed by the Base Environmental Coordinator. Contractor shall be responsible for completing the notification and timely mailing to the DSHS. Contractor shall submit a copy of the signed notification to the Contracting Officer annotated with the date of mailing to the DSHS. The Contractor shall be responsible for timely payment of all fees associated with the work and permit.

10.2 The Contractor shall use all means available to divert to the greatest extent practicable and economically feasible, construction and demolition waste from landfills. At the end of the project, and prior to final acceptance, the Contractor shall submit a solid waste diversion report by completing the form at the end of this section 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. The report shall be submitted via AF Form 3000 to the Contracting Officer for Government Approval.

11. ASBESTOS:

11.1 Abatement: Not Applicable

11.2 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 40 CFR 61, National Emission Standards for Hazardous Air Pollutants of 1990, to GAFB.

11.3 Asbestos – Free Certification: Prior to final acceptance, the Contractor shall submit a signed statement, accompanied by SDS sheets 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 via Form 3000 for Government Approval.

12. LEAD:

Under no circumstances, under the provisions of this contract, shall the Contractor be allowed to provide Lead Based Paint (LBP), paint products or lead building materials. The definition of Lead Based Paint is paint or other surface coating that contains lead to or in excess of 1.0 milligrams per square centimeter or more than .5% by weight (5000ppm).

13. 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 GAFB and contemplating a release of non-hazardous water into the sanitary sewer system shall 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 same.

14. GREEN PROCUREMENT PROGRAM (GPP)

14.1 Green Procurement is defined as "The purchase of environmentally preferable products and services in accordance with Federally-mandated 'green' procurement preference programs.

14.2 Priority should be given to products that emphasize the source reduction aspect of the Air Force's Pollution Prevention hierarchy and those that incorporate one, or all, of the following mandatory GPP elements: Recovered Materials, Energy and Water Efficient, Alternate Fuels and Fuel Efficiency, Bio-based, Ozone Depleting Substances, Priority Chemicals, and Environmentally Preferable Products (EPP).

15. AIR EMISSION SOURCE REPORTING

15.1 The Contractor shall comprehend and comply with all applicable Federal, State, County and Municipal laws concerning air pollution, particularly the Clean Air Act (CAA) and all subsequent amendments. All work under this contract shall be performed in such a manner that objectionable or nuisance conditions will not be created in the air nor will objectionable particulates be released into the air. Material usage of welding rods, welding gases, paints, thinners, solvents, and asphalt will require reporting to (through the Contracting Officer) the Installations Air Quality Program Manager, 17 CES/CEIEC (325)-654-3456 monthly throughout the project (VIA AF Form 3000). No open burning shall be permitted on base.

15.2 Dust Control: The Contractor shall maintain all excavations, embankments, stockpiles, haul roads, permanent access roads, plant sites, and waste areas, borrow areas, and all other work areas within or without the project boundaries free from dust in accordance with all applicable local, state, and Federal regulations for the control of dust and particulate emissions. Temporary methods of stabilization consisting of sprinkling with water are required to control dust. Sprinkling with water shall be repeated at such intervals as to keep all parts of the disturbed area at least damp at all times. Gravel paving shall be required for entrance and exit drives, parking areas, and unpaved roads carrying more than twenty five (25) vehicles per day on the construction site.

15.3 The Installation Environmental Office has overall management and execution responsibility of the Installation's environmental programs and is the focal point for monitoring the Installation's compliance status with all applicable Federal, State, and Local requirements. To ensure that the Installation's current Air Emissions Inventory (AEI) and Potential To Emit (PTE) emissions contributions are explicitly documented as required, and periodically updated in the air emissions inventory and in the installation's specific State Implementation Plan (SIP) emission budget. To maintain the Installation's baseline emissions inventory in order to determine if proposed physical or operational changes to stationary sources require "netting" or offset requirements under New Source Review (NSR) and other CAA programs.

16. CONSTRUCTION & DEBRIS

16.1 Construction and Demolition (C&D) debris consists of the waste generated during construction, renovation, and demolition projects. Covering a wide array of materials, this waste often contains bulky, heavy materials, including concrete, wood, asphalt (from roads and roofing shingles), gypsum (the main component of drywall), metals, bricks, plastics, and plant materials from site clearing. C&D debris also includes salvaged building components such as doors, windows, and plumbing fixtures.

16.2 When a project involves any type of construction, remodeling, rebuilding or demolition, the Contractor shall use all means available to divert to the greatest extent practicable and economically feasible, construction and demolition waste from landfills. At the end of the project, and prior to final acceptance, the Contractor shall submit a solid waste diversion report (the form, Construction Waste Management Form, will be provided to the Contractor) 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. The report shall be submitted via AF Form 3000 to the Contracting Officer for Government Approval.

16.3 A written notification is required do to any type of demolition of a facility, to the Texas Dept. of State Health Services (DSHS), shall be received by the DSHS at least twenty (20) calendar days prior to Contractor's proposed demolition start date. The notification shall be signed by the Installation Environmental Coordinator. The Contractor shall be responsible for completing the notification and timely mailing to the DSHS. The Contractor shall submit a copy of the signed notification to the Contracting Officer annotated with the date of mailing to the DSHS. The Contractor shall be responsible for timely payment of all fees associated with the work and permit.

16.4 Any type of construction work being done on the Installation, that will have to do with any type of construction, remodeling, rebuilding, installation or demolition of roadways, sidewalks, buildings, landscaping or any other type of work that will affect any areas of this Installation, is mandated to be reported. The report shall be submitted to the Contracting Officer by the 5th day of the month. It will then be forwarded to the Contracting Officer Representative who will forward it to the installation IHMP office within 5 working days or as per the requirement of the contract. If the project is less than 6 months, the Contract/Project Manager will provide the tracking data before the end of the projects targeted suspense date for each said project.

17. TRAINING

17.1 The Contractor shall ensure all employees complete the required Hazardous Communication (HAZCOM), Hazardous Materials and Hazardous Waste training required for this project. The Contractor shall appoint a primary and alternate HAZMAT and Hazardous Waste monitor. The Contractor is responsible for training all Contractor personnel regarding hazardous material containers maintained within GAFB.

18. ENVIRONMENTAL MANAGEMENT SYSTEM (EMS):

18.1 All Contractors' employees must complete an Environmental Management System (EMS) General Awareness Training prior to commencement of any activities. The Contractor's on site supervisory personnel shall complete the EMS Awareness Training (EMS100AFIT00004) program. The Base Civil Engineer Environmental Element - should be contacted at (325) 654-5946 for information about this 7 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 The Environmental Awareness Course Hub (TEACH) available through any internet access at <https://usaf.learningbuilder.com/>

18.2 The training above will be tracked by the Environmental System Administrator.

Material Type	Recycled (pounds)	Recycling Company	Landfill (pounds)	Landfill Used	Costs / Proceeds
Asphalt					
Bricks					
Concrete					
Dirt/Soil					
Dumpster Debris					
Freons/Refrigerants					
Light Bulbs					
Lumber/Wood					
Metals					
Oil/Petroleum					
Plastics					
Roofing					
Steel					
Wastewater					
Tress/Brush					
Other					

San Angelo Area Recycling Haulers and Markets

Ric Abbott Co., 6577 S. US Hwy 277, San Angelo, TX (325) 651-7330

Acme Iron & Metal Co., 720 N. Buchanan, San Angelo, TX (325) 653-1407

Butts Recycling Inc., 615 W 11th St, San Angelo, TX (325) 653-8957

San Angelo Area Landfill

Republic Services Inc., 3002 Old Ballinger Hwy, San Angelo, TX (325) 655-6869 (7:00 AM -5:30 PM
Mondays-Fridays / 7:00 AM -12:00 PM Saturdays / Closed Sundays)

END OF SECTION