ATTACHMENT J5

U.S. Army Electric Distribution System

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J5.1 Selfridge Overview

Selfridge is located on the north side of the metropolitan area of Detroit, Michigan, along the western shore of Lake St. Clair. Selfridge is the home of a garrison of the United States Army and the 127th Wing of the Michigan Air National Guard. Army Garrison-Selfridge provides base operations and services to include housing , morale welfare and recreation, and family services to a joint military community, affiliated civilian employees and their family members. Housing units are located on the base and at an offsite housing area referred to as Sebille Manor. Many of the residents are part of the Tank-automotive and Armaments Command (TACOM) supporting tank construction in the Detroit area. Other army units stationed at Selfridge include an active Army Readiness unit, Army Reserves, and a unit of the Army Guard (Rangers). The Army portion of Selfridge also provides housing for military personnel. The airfield is the home of the 127th Wing of the Michigan Air National Guard. The Air Force Reserve (AFRC) 927th Air Refueling Wing provides the KC-135 mission on base and occupies numerous facilities on ANG property, making it the third largest group on base. The 127th Wing is the host command.

Several other branches of the U.S. military also have offices or units on the base. They include the 425th infantry and Army Guard Recruiting, Naval Mobile Construction Battalion, Naval Air Reserve Activity Selfridge, Naval Reserve Center, Immigration and Naturalization Service for U.S. Boarder Patrol, Marine Wing Support Group 47, the Army's 3rd Brigade, 85th Division, and the 75th Explosive Ordnance Company. The Coast Guard Air Station Detroit also uses Selfridge as a base of operations.

The population on the Army side of Selfridge is currently 468 staff and 2000 residents.

The site upon which Selfridge is located initially was established as an airfield during the early part of the 20th century. It began being used as an airfield for the U.S. Army Air Corps in the 1920s. Over the years, it grew into an active duty base for the Air Force. In 1971 the U.S. granted a license to the State of Michigan for the use of the former Selfridge Air Force Base for National Guard purposes. The base at that time consisted of roughly 3,075 acres of land, including a complete airfield, buildings to support base operations and flight-line activities, 593 on-base housing units and associated quality of life facilities, and miscellaneous other buildings. In 1989, the Air Force transferred 520 acres of the base and the 102-acre Sebille Manor housing area to the U.S. Army. The ANG also leases another area at the southeast corner of the base to the U.S. Army.

Currently the 127th Wing side of the base contains 228 buildings, and the U.S. Army side including Sebille Manor contains 495 buildings (mostly housing). The total structure surface area over the entire base covers 1,922,310 ANG, 1,513,954 Army for a total of 3,436,255 square feet.

In 1997 Team Selfridge completed the Vision 2000 Base Renovation Plan for the 127th Wing. The Vision 2000 document identifies the condition of many aspects of the utility infrastructure, pavement, and buildings on the site. It also lays out a plan for implementing

the recommendations for renovations presented in the plan. Based upon the Vision 2000 document, plans for demolition, construction, and new infrastructure projects have begun. Of particular interest to this feasibility analysis report is the expectation that demolition and construction on the base will result in a net reduction in the surface area of structures (127th Wing and U.S. Army). The reduction in building area is expected to result in a proportionate reduction in demand for the four commodities being analyzed by the project.

J5.2 Electric Distribution System Description

J5.2.1 Electric Distribution System Fixed Equipment Inventory

The U.S. Army electric distribution system consists of all appurtenances physically connected to the distribution system from the point in which the distribution system enters the U.S.Army owned property and U.S. Army ownership currently starts to the point of demarcation. The system may include, but is not limited to, transformers, circuits, protective devices, utility poles, ductbanks, switches, street lighting fixtures, and other ancillary fixed equipment. The actual inventory of items sold will be in the bill of sale at the time the system is transferred. The following description and inventory is included to provide the Contractor with a general understanding of the size and configuration of the distribution system. The Government makes no representation that the inventory is accurate. The Contractor shall base its proposal on site inspections, information in the technical library, other pertinent information, and to a lesser degree the following description and inventory. Under no circumstances shall the Contractor be entitled to any service charge adjustments based on the accuracy of the following description and inventory.

Specifically excluded from the electric distribution system privatization are:

- Electrical Circuit from Base to Sebille Manor (it is owned by Detroit Electric)
- Miscellaneous emergency power generators
- Security lighting where the light fixture is attached to the building or Parking lot and security lights that are fed directly from buildings
- Water tower beacon lights

J5.2.1.1 Description

Detroit Edison supplies electric power to Selfridge through two 40-kV transmission lines that enter the north side of the base and terminate at the main substation, which is owned by Detroit Edison. Power is transformed at the main substation to 4,800 volts and delivered through a master meter to Selfridge's switchgear in building 854 for distribution throughout the base's nine feeders. The U.S. Army electrical system is connected with the 127th Wing system and the power supply originates from the 127th Wing system feeders in building 854.. Electrical power is delivered to Sebille Manor at 13.2 kV by a Detroit Edison owned circuit that originates from the substation.

The distribution system ranges from 120/240-volt, single-phase lines for housing units to 208-, 240-, and 480-volt, three-phase lines for industrial/commercial type buildings and pump stations. The primary distribution system consists of both overhead and underground

lines. The secondary system consists of both overhead and underground lines. The system also includes:

- 18 three-phase transformers ranging from 113 to 1000 kilovolt amperes (kVA)
- 191 single-phase transformers ranging from 5 to 250 kVA
- 224 utility poles
- 2 switches
- 207 street lights

Selfridge has an ongoing preventive maintenance program that is making progress toward removing and renewing parts of the electrical system that have reached the ends of their useful lives. Construction dates for the underground and overhead circuits and other system components range from the 1950s to the 1990s. There are roughly 6,000 linear feet of underground lines, most of which were constructed during the 1990s. There are about 37,200 linear feet of overhead lines, most of which were constructed between 1950 and 1990.

A detailed inventory of the electrical system is presented in the following section.

J5.2.1.2 Inventory

Table 1 provides a general listing of the major electric distribution system fixed assets for the U.S. Army electric distribution system (main base and Sebille Manor) included in the sale.

TABLE 1
Fixed Inventory
Electric Distribution System U.S. Army

Item	Size	Quantity	Unit	Approximate Year of Construction
Underground Circuits	**AWG**	**Length (ft)**		
3ph, 3w, in conduit	#6	5616	LF	1995
3ph, 3w, in conduit	#2/0	401	LF	1965
Overhead Circuits				
3ph, 4w, 600V, Conductor	#4/0 CU	17,629	LF	1960
3ph, 4w, 15000V, Conductor	#6 CU	1050	LF	1995
3ph, 4w, 15000V, Conductor	#6 CU	6752	LF	1985
3ph, 4w, 15000V, Conductor	#1/0 ACSR	1300	LF	1985
3 ph, 3 w, conductor	#2/0 CU	7413	LF	1965
3 ph, 3 w, conductor	#4/0 CU	12714	LF	1965
3ph, 4w, 15000V, Conductor	#2 CU	1865	LF	1955
3ph, 4w, 15000V, Conductor	#6 CU	3269	LF	1955
3ph, 4w, 15000V, Conductor	#2 CU	2882	LF	1955
Transformers	**Nom kVA**	**No.**		
3-Phase	150	1	EA	1970
3-Phase	300	1	EA	1970
3-Phase	500	1	EA	1970
3-Phase	750	2	EA	1970
3-Phase	1000	9	EA	1970
3-Phase	225	1	EA	1965

Item	Size	Quantity	Unit	Approximate Year of Construction
3-Phase	113	3	EA	1955
1-Phase	5	5	EA	1985
1-Phase	10	5	EA	1985
1-Phase	15	3	EA	1985
1-Phase	25	11	EA	1985
1-Phase	37.5	6	EA	1985
1-Phase	50	16	EA	1985
1-Phase	75	13	EA	1985
1-Phase	100	11	EA	1985
1-Phase	25	7	EA	1975
1-Phase	37.5	15	EA	1975
1-Phase	50	34	EA	1975
1-Phase	75	6	EA	1975
1-Phase	167	56	EA	1975
1-Phase	250	3	EA	1955
Utility Poles	**Height (ft)**	**No.**		
	50	112	EA	1975
	50	112	EA	1955
Switches	**Type**	**No.**		
	2-Way	2	EA	1965
Lighting	**Type**	**No.**		
	Street	207	EA	1975

Notes: AWG = American Wire Gauge
ea = each ph – phase
lf = linear feet V = volts
w = wire
Nom kVA = nominal kilovolt-amperes

J5.2.2 Electric Distribution System Non-Fixed Equipment and Specialized Tools

Table 2 lists other ancillary equipment (spare parts) and Table 3 lists specialized vehicles and tools included in the purchase. Offerors shall field verify all equipment, vehicles, and tools prior to submitting a bid. Offerors shall make their own determination of the adequacy of all equipment, vehicles, and tools.

TABLE 2
Spare Parts
Electric Distribution System U.S. Army

Qty	Item	Make/Model	Description	Remarks
None				There are no spare parts to transfer with sale of the system

TABLE 3
Specialized Vehicles and Tools
Electric Distribution System U.S. Army

Description	Quantity	Location	Maker
There are no vehicles or tools to sell with the U.S. Army system	None		

J5.2.3 Electric Distribution System Manuals, Drawings, and Records

Table 4 lists the manuals, drawings, and records that will be transferred with the system.

TABLE 4
Manuals, Drawings, and Records
Electric Distribution System U.S. Army

Qty	Item	Description	Remarks
2	System Plan view	Drawing showing U.S. Army electrical system in plan view.	Expect one drawing to be available for base and one for Sebille Manor.

J5.3 Specific Service Requirements

The service requirements for the U.S. Army electric distribution system are as defined in the Section C, *Description/Specifications/Work Statement*. The following requirements are specific to the U.S. Army electric distribution system and are in addition to those found in Section C. If there is a conflict between requirements described below and Section C, the requirements listed below take precedence over those found in Section C:

- The contractor must subscribe to the *MISSDIG* utilities locating service.
- Grounds and structures areas shall be maintained to meet base standards.
- For all privatized lighting fixtures, operations and maintenance of lighting fixtures includes the purchase and replacement of the lighting element and the removal and disposal of replaced lighting element.

J5.4 Current Service Arrangement

The current electricity provider for Selfridge is Detroit Edison, and the total base (including the 127th Wing) peak demand for FY 1998 was 7,645 kilowatts (kW) (occurred in April, 1998). The U.S. Army Garrison receives its electricity from the 127th Wing. Sebille Manor receives electrical power directly from Detroit Edison. The FY 1998 average power consumption is 3,375,900 kWh (including the 127th Wing). Future demand is expected to stay constant or drop as the total square footage of building is reduced by demolition activities. Additional demand reduction should occur as a result of improved energy efficiency in the new construction.

J5.5 Secondary Metering

J5.5.1 Existing Secondary Meters

Table 5 provides a listing of the existing (at the time of contract award) secondary meters that will be transferred to the Contractor. The Contractor shall provide meter readings for all secondary meters IAW Paragraph C.3 and J5.6 below.

TABLE 5
Existing Secondary Meters
Electric Distribution System U.S. Army

Meter Location/Building Number	Meter Description
Sebille Manor Housing Area	Primary (master) meter at point where line enters housing area.
972,400,410,700,769,770,774,775,776,701, 715,780,781,903,970,971	15 buildings

570	golf clubhouse
571	golf course cart/maintenance building

J5.5.2 Required New Secondary Meters

The Contractor shall install and calibrate new secondary meters as listed in **Table 6**. New secondary meters shall be installed IAW Paragraph C.13, Transition Plan. After installation, the Contractor shall maintain and read these meters IAW Paragraphs C.3 and J5.6 below.

TABLE 6
New Secondary Meters
Electric Distribution System U.S. Army

Meter Location/Building Numbers	Meter Description
300, 308, 310, 325, 326, 327, 328, 330, 333, 334, 350, 672, 673, 697, 701, 710, 712, 714, 715, 748, 773, 409, 424, 426, 2250 (Teen center in Sebille Manor), 905, 907, 908, 909, 911, 912, 916, 922, 923, 924, 927, 929, 930, 931, 935, 936, 942, 944, 945, 950, 951, 969, 10 storage buildings in the 900 housing area, 1060.	Match base standards for meters with capability for remote reading.
Master (secondary) meter for 400 Housing Area buildings not noted above, and an additional master (secondary) meter for 200 Housing Area.	Match base standards for meters with capability for remote reading

J5.6 Monthly Submittals

The Contractor shall provide the Government monthly submittals for the following:

1. Invoice (IAW paragraph G.2). The Contractor's monthly invoice shall be presented in a format proposed by the Contractor and accepted by the Contracting Officer. Invoices shall be submitted by the 25th of each month for the previous month. Invoices shall be submitted to:

   Name: US Army Garrison-Selfridge, DPW
   Address: Building 970, Mount Clemens, MI 48045
   Phone number: (810) 307-4189

2. Outage Report. The Contractor's monthly outage report will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Outage reports shall be submitted by the 25th of each month for the previous month. Outage reports shall be submitted to:

   Name: US Army Garrison-Selfridge, DPW
   Address: Building 970, Mount Clemens, MI 48045
   Phone number: (810) 307-4189

3. Meter Reading Report. The monthly meter reading report shall show the current and previous month readings for all secondary meters. The Contractor's monthly meter reading report will be prepared in the format proposed by the Contractor and accepted by the Contracting Officer. Meter reading reports shall be submitted by the 15th of each month for the previous month. Meter reading reports shall be submitted to:

   Name: US Army Garrison-Selfridge, DPW
   Address: Building 970, Mount Clemens, MI 48045
   Phone number: (810) 307-4189

4. System Efficiency Report. If required by Paragraph C.3, the Contractor shall submit a system efficiency report in a format proposed by the Contractor and accepted by the Contracting Officer. System efficiency reports shall be submitted by the 25th of each month for the previous month. System efficiency reports shall be submitted to:

   Name: US Army Garrison-Selfridge, DPW
   Address: Building 970, Mount Clemens, MI 48045
   Phone number: (810) 307-4189

J5.7 Energy Saving Projects

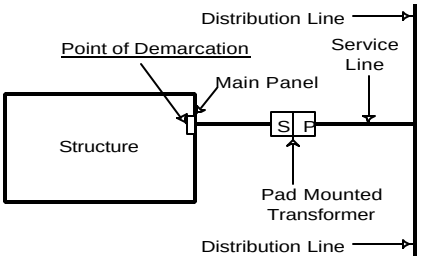
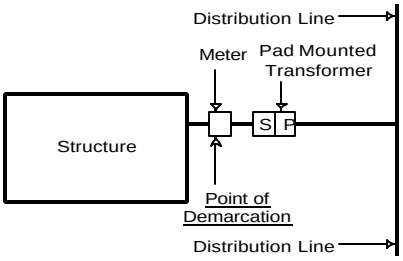
IAW Paragraph C.3, Requirement, the following projects have been implemented on the distribution system by the Government for energy conservation purposes:

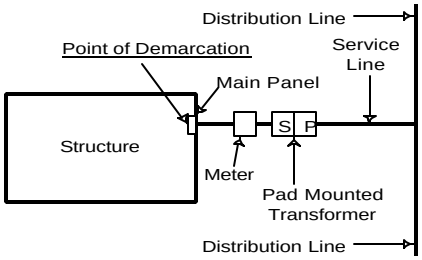
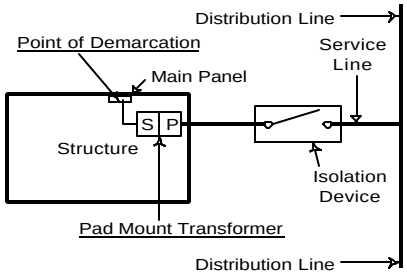
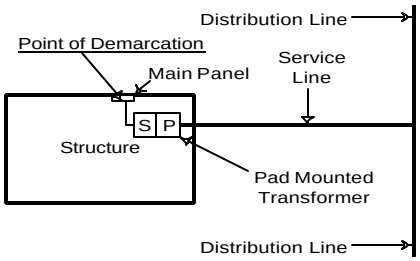
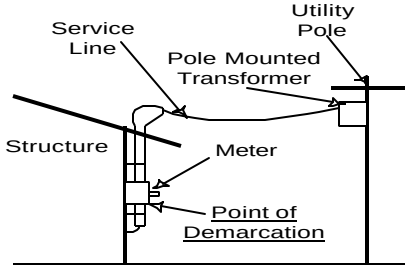
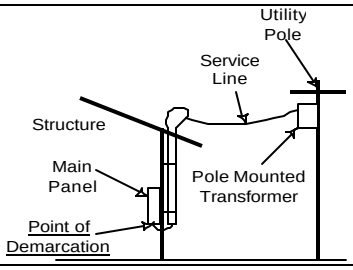
- Demolition of unused structures
- Installation and reading of meters on buildings to monitor energy use
- Upgrade transformer locations to improve operation efficiency of system
- Install energy efficient equipment such as heating plants and lighting

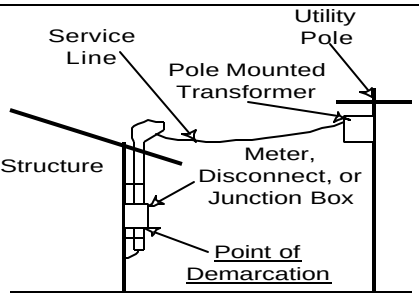
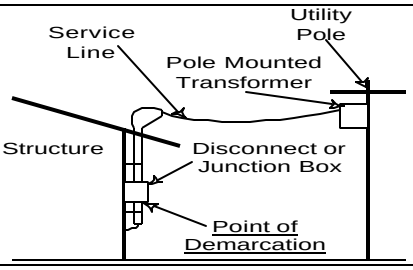
J5.8 Service Area and Points of Demarcation

IAW Paragraph C.4, Service Area, the service area is defined as all areas within U.S. Army boundaries including the Sebille Manor housing area. The following discusses the points of demarcation for the system.

The point of demarcation is defined as the point on the distribution system where ownership changes from the utility owner to the building owner. This point of demarcation will typically be at the point the utility enters a building structure or the load side of a transformer within a building structure. The diagrams below identify the type and general location of the point of demarcation with respect to the building for each scenario.

Point of Demarcation	Applicable Scenario	Sketch
Point of demarcation is the line side of the main panel in the structure. *Note: Disconnect switch may be installed at the structure at any time. Disconnect switch will become the point of demarcation.*	Pad Mounted Transformer located outside of structure with underground service to the structure and no meter exists.	
Point of demarcation is the load side of the meter. .	Government Owned Residential service (less than 200 amps and 240V 1-Phase), and three phase self contained meter installations.	

Point of Demarcation	Applicable Scenario	Sketch
Point of demarcation is the line side of the main panel in the structure. *Note: Disconnect switch may be installed at the structure at any time. Disconnect switch will become the point of demarcation.*	Three Phase CT metered service.	
Point of demarcation is the line side of the main panel in the structure.	Transformer located inside of structure and an isolation device is in place with or without a meter Note: Utility Owner must be granted 24-hour access to transformer room.	
Point of demarcation is the line side of the main panel in the structure.	Transformer located inside of structure with no isolation device in place. Note: Utility Owner must be granted 24-hour access to transformer room.	
Point of demarcation is the load side of the electric meter.	Electric meter is connected to the exterior of the building on an overhead secondary line.	
Point of demarcation is the line side of the main panel in the structure. *Note: Disconnect switch may be installed at any time. Disconnect switch will become the point of demarcation.*	Pole Mounted Transformer located outside of structure with secondary attached to outside of structure with no meter.	

Point of Demarcation	Applicable Scenario	Sketch
Point of demarcation is the load side of the meter, disconnect, or junction box. *Note: Disconnect switch may be installed at the structure at any time. Disconnect switch will become the point of demarcation.*	Government Owned Residential service (less than 200 amps and 240V 1-Phase), and three phase self contained meter installations.	
Point of demarcation is the line side of the disconnect switch or junction box on the structure.	Service may be overhead or underground. A disconnect switch or junction box is mounted to the exterior of the structure with no meter.	

The following paragraphs list anomalous (unique) points of demarcation that do not fit the above scenarios.

Building No.	Point of Demarcation Description
Sebille Manor Housing Area	The U.S. Army takes ownership of the electrical line that enters Sebille Manor at the point that the Detroit Edison line attaches to the transformer near the Sebille Manor property line. The transformer is included as part of the privatized system.
Lines crossing shared Property Line between Air National Guard and U.S. Army Garrison	The utility system transfers from ownership by the U.S. Army to ownership by the Air National Guard at points where the system crosses the shared property line between these to entities.

J5.9 Off-Installation Sites

The Sebille Manor Housing area is an off-installation site located 2.6 miles north of the base. It is currently owned and managed by the U.S. Army. Sebille Manor is included in the sale of the electric distribution system.

J5.10 Specific Transition Requirements

IAW Paragraph C.13, Transition Plan, **Table 7** provides a listing of service connections and disconnections required upon transfer.

TABLE 7
Service Connections and Disconnections
Electric Distribution System U.S. Army

Location	Description
None Identified	

J5.11 Government Recognized System Deficiencies

Table 8 provides a listing of system improvements that the Government has planned. The Government recognizes these improvement projects as representing current deficiencies associated with the U.S. Army electric distribution system. If the system is sold, the Government will not accomplish these planned improvements. The Contractor shall make a determination as to its actual need to accomplish and the timing of any and all such planned improvements. Capital upgrade projects shall be proposed through the Capital Upgrades and Renewal and Replacement Plan process and will be recovered when the upgrade is put in useful service and, as proposed in Schedule L-3. Renewal and Replacement projects will be recovered through Sub-CLIN AB.

Table 8
System Deficiencies
Electric Distribution System U.S. Army

Project Location	Project Description
Golf Course	Main feed needs upgrade. It fails regularly.