

ATTACHMENT J01

Carlisle Barracks Electrical Distribution System

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J01 Carlisle Barracks Electrical Distribution System

J01.1 Carlisle Barracks Area Overview

Carlisle Barracks is the home of the U.S. Army War College and the U.S. Army Military History Institute and was founded in 1757. Carlisle Barracks is a small post, four fifths of a mile long and half a mile wide, containing 217 total acres. In addition to the main post, Carlisle Barracks includes family housing units at the nearby Stanwix Apartment area. A typical student body consists of 290 senior officers.

J01.2 Electrical Distribution System Description

J01.2.1 Electrical Distribution System Fixed Equipment Inventory

The Carlisle Barracks electric distribution system consists of all appurtenance physically connected to the distribution system from the point in which the distribution system enters the Installation, and/or Government ownership currently, starts to the point of demarcation defined by the real estate instruments. Generally, the point of demarcation will be the building footprint. The system may include, but is not limited to, substations, transformers, underground and overhead circuits, utility poles, switches, vaults, and lighting fixtures. The following description and inventory is included to provide the Offeror with a general understanding of the size and configuration of the distribution system. The inventory is assumed to be approximately 90 percent complete. The Offeror shall base the proposal on site inspections, information in the bidders library, other pertinent information, and to a lesser degree the following description. Under no circumstances shall the successful Contractor be entitled to any rate adjustments based on the accuracy of the following description and inventory.

J01.2.1.1 Description

Carlisle Barracks owns and operates an electrical utility system consisting of:

1. The Carlisle Barracks military base is divided into three sections; 1) the main cantonment area and facilities, 2) the Stanwix Apartments off-post housing area and facilities, and 3) the Installation golf course and club house.
2. The Electrical Substation (Bldg. 850) is located on west side of Claremont Road within the main cantonment. The substation is owned and operated by the U.S. Army. The substation contains two 5 MVA power transformers (69 kV to 12.47 / 7.2 kV) and is energized by two, overhead 69 kV three phase feeders from the Pennsylvania Power and Light Company. The PP&L ownership ends at the dead-end terminations of the lattice steel dead-end tower. The incoming feeders have 69 kV airbrake disconnect switches mounted on the dead-end tower to allow sectionalizing. Surge arresters are also installed on the incoming transmission feeders.
3. The low side portion of the substation contains a lineup of Westinghouse 15 kV rated metalclad switchgear containing two incoming 15 kV Circuit Breakers (1200 amp rated) and a 1200 amp rated bus-tie breaker. The 12.47 kV double bus arrangement contains four feeder bays in-service (300 amp rated) and two spare units.

4. The distribution system that originates in the main substation contains two basic feeders, Loop A, which feeds the northern portion of the Cantonment area and a portion of the central area and Loop B, which feeds the southern portion of the Cantonment and a portion of the central area. Practically all of the distribution system consists of underground cable feeders and padmounted transformers and switches (circa 1970s). The conductor sizes of the main loops are #4/0 AWG, 15 kV shielded with a #4/0 600 volt neutral. The two underground distribution loops are tied together with a loop tie circuit and disconnect switches near Vault 'E'. The remainder of the network, secondary loops and lateral feeds, are small conductor (i.e., less than #4/0 AWG). There are two small segments of overhead feeder circuits on the main cantonment. These are 12.47 / 7.2 kV primary feeders with small conductors that feed residential areas. The wood pole structures and circuits are about the 1955 to 1962 era. The condition of the overhead circuits is poor to fair due to the age and exposure conditions.
5. A problem occurred in the main substation about two years ago when a tripping relay coil failed to operate under a fault condition. Some of the substation equipment was burned. The problem has since been corrected and test procedures have been implemented to preclude recurrence of this problem.
6. The Installation is lighted by a series of street lights and area lights. A number of the streetlights are ornamental, in keeping with the historical nature of the military reservation. The street lights and area light circuits are independent to some degree from the primary distribution system. Some of the lighting areas are fed from building circuit breaker panelboards. The Army is not certain whether they wish to privatize these street lighting and area lighting portions. This study will include these facilities in our evaluation. The Army may choose to exclude them at a later date.
7. The Army owns the electric service facilities of the Stanwix Apartment complex in the Borough of Carlisle, PA. The housing units are located about one mile NW of the main gate. The area is served from a metered tap from PP&L at 12.47 / 7.2 kV. The pole dates of these facilities indicate a 1951 through 1962 construction period. The type of construction is similar to those facilities on the main cantonment. The DPW operates and maintains the distribution system within the boundary of Stanwix Apartments.
8. The Carlisle Barracks golf course is located outside the main cantonment, east of Claremont Road. Electrical power to the clubhouse and service areas is provided by a PP&L metered 12.47/ 7.2 kV overhead service tap. Pole dates in this area indicate a mid to late 1960s construction period. The Army owns and operates these facilities.
9. The subterranean conditions on the main cantonment area contain large amounts of limestone just below the earth's surface. This feature poses problems for all utility systems.

J01.2.1.2 Inventory

Table 1 provides a general listing of the major electrical system fixed assets for the Carlisle Barracks electrical distribution system included in the purchase. The system will be sold in an “as is, where is” condition without any warrant, representation, or obligation on the part of the Government to make any alterations, repairs, or improvements. All ancillary equipment attached to and necessary for operating the system, though not specifically mentioned here in, is considered part of the purchased utility.

TABLE 1
Fixed Inventory
Electrical Distribution System Inventor

Item	Quantity	Unit	Approximate Year of Construction
Substation			
Structure/Buswork	1	Lot	1962
Power Transformer	10	MVA	1974
Low Side Switchgear / Breakers	9	Each	1974
Overhead Distribution Lines			
3-phase – Large	0.130	Miles	Various
3-phase – Small	0.198	Miles	Various
1-phase	0.359	Miles	Various
Secondary	0.172	Miles	Various
Group-Operated Air Break Switch	18	Each	Various
Underground Distribution Lines			
3-phase – Large	0.713	Miles	Various
3-phase – Small	0.470	Miles	Various
1-phase	0.793	Miles	Various
Secondary	0.494	Miles	Various
Pad Mounted Switches	20	Each	Various
Transformers			
Pole Type			
15 kVA and smaller	1	Each	Various
25 kVA	3	Each	Various
37.5 kVA	14	Each	Various
50 kVA	12	Each	Various
75 kVA	13	Each	Various
100 kVA	1	Each	Various
Pad Type			
25 kVA (Single Phase)	2	Each	Various
37.5 kVA (Single Phase)	6	Each	Various
50 kVA (Single Phase)	2	Each	Various
75 kVA (Single Phase)	4	Each	Various
112 kVA and smaller (Three Phase)	7	Each	Various
150 kVA (Three Phase)	5	Each	Various
225 kVA (Three Phase)	5	Each	Various
300 kVA (Three Phase)	7	Each	Various
500 kVA (Three Phase)	3	Each	Various

750 kVA (Three Phase)	1	Each	Various
1000 kVA (Three Phase)	1	Each	Various
1500 kVA (Three Phase)	1	Each	Various
2500 kVA (Three Phase)	1	Each	Various
Services			
1-phase	97	Each	Various
3-phase	58	Each	Various
Street Lights			
Fixtures	123	Each	Various
Poles	112	Each	Various
Circuitry	3.210	Miles	Various

J01.2.2 Electrical Distribution System Non-Fixed Equipment and Specialized Tools Inventory

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 and tools prior to submitting a bid. Offerors shall make their own determination of the adequacy of all equipment and tools. The successful Contractor shall provide any and all equipment, vehicles, and tools, whether included in the purchase or not, to maintain a fully operating system under the terms of this contract.

TABLE 2
Spare Parts
Electrical Distribution System Carlisle Barracks

Qty	Item	Make/Model	Description	Remarks
None Identified				

TABLE 3
Specialized Equipment and Vehicles
Electrical Distribution System Carlisle Barracks Area

Description	Quantity	Location	Maker
None Identified			

J01.2.3 Electrical System Manuals, Drawings, and Records Inventory

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

TABLE 4
Manuals, Drawings, and Records
Electrical Distribution System Carlisle Barracks Area

Qty	Item	Description	Remarks
	None		

J01.3 Current Service Arrangement

Currently, Carlisle Barracks purchases wholesale electric power from Pennsylvania Power and Light Company (PP&L) at three locations. The main cantonment area is metered at the substation (Building 850); the golf course and the Stanwix Apartments are metered by PP&L at the 12.47/7.2 taps to their system.

As required by this contract, the Contractor shall demonstrate the ability to meet and shall establish any and all requirements to provide electric distribution service to Carlisle Barracks Area.

J01.4 Secondary Metering

The Base may require secondary meters for internal billings of their reimbursable customers, utility usage management, and energy conservation monitoring. The Contractor shall assume full ownership and responsibility for existing and future secondary meters IAW Clause C.3.

J01.4.1 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 once a month for all secondary meters IAW H.5 and J01.5 below.

TABLE 5

Existing Secondary Meters

Electrical Distribution System Carlisle Barracks Area

CARLISLE BARRACKS SECONDARY METER LIST

Meter	Meter No.	Bldg Number	Location/Remarks
Electric	75975587	259 Ambassador Hse	
Electric	36814977	216A	
Electric	36814978	216B	
Electric	36814976	207B	
Electric	339342	686 Strike Zone	
Electric	31042017	650 Rm 1054A CSL	
Electric	81790906	627 Vet Clinic	
Electric	36814975	615	
Electric	98490551	108 Forbes Ave.	Transformer (Backyard)
Electric	97858204	105 Transformer	Behind garage
Electric	97858203	111B Transformer	Behind garage

Electric	50713516	122 Root Hall-left	(Qtrly)
Electric	50713515	122 Root Hall-right	(Qtrly)
Electric	19313248	313 LVCC Transformer	FIXED
Electric	78591902	313 LVCC FH O Club	Behind Bldg
Electric	78591901	316 Pool House	
Electric	80053440	301 Heat Plant	(Qtrly)
Electric	82428513	28 Royal Circle	Transformer (Rear)
Electric	81501570	34 Flower Rd.	
Electric	13524708	36	OUTSIDE NEAR #37
Electric	16059344	37 Guest House Annex	
Electric	96162531	38 Hessian Guard Hse	
Electric	80203695	3 Garrison Lane	
Electric	12444113	2 Garrison Lane	
Electric	12199931	4 Garrison Lane	
Electric	12199929	5A Garrison Lane	
Electric	12199932	5B Garrison Lane	
Electric	71539970	7 Guest House	
Electric	95040475	116 A-Bay VSSD	
Electric	49316284	451 Maint Bldg(a/c)	
Electric	91434265	455 Child Dev Centr	Transformer
Electric	42600100	901 Golf House	
Electric	97903672	NDB New Meter	
Electric	48539898	HELIPAD	
Electric	60584349	844 PX	
Electric	85985550	860 PX Class Six	
Electric	82098050	Sub Station #1	(Qtrly)
Electric	82098069	Sub Station #2	(Qtrly)
Electric	86010945	Sub-Station	
Electric	11986025	842 Credit Union	Utility closet
Electric	1233857	842 Laundry	End of bldg-right meter
Electric	8510000	851 Commissary Wh.	Upstairs
Electric	82196420	849 Motor Pool	(Qtrly)
Electric	12068871	595 College Arms	
Electric	L.E.D.	830 Water Plant	(Qtrly) Near pump panel #1
Electric	19736270	509 College Arms	
Electric	12068868	547 College Arms	
Electric	12068870	549 College Arms	
Electric	94992274	560 College Arms	Next to Water Plant
Electric	16924169	513 College Arms	BEHIND TALL BUSH
Electric	16924171	559 College Arms	
Electric	19736278	575 College Arms	
Electric	85665460	253 Med Supply	Boiler room (Rear)
Electric	70509602	257 War Games	(Qtrly)

J01.4.2 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 Clause C.17, Transition Plan. After installation, the Contractor shall maintain and read these meters IAW Clauses C.3, H.5, and J01.5 below.

TABLE 6

New Secondary Meters

Electrical Distribution System Carlisle Barracks Area

Meter Location	Meter Description
None Identified	

J01.5 Submittals

In addition to the submittal requirements from Clause H.5, the Contractor shall provide the Government monthly submittals for:

1. Invoicing (IAW G.2) for the previous months' services. The Contractor's invoice shall be prepared in a format proposed by the Contractor and accepted by the Contracting Officer.
2. Monthly Outage Report for the previous month. The Contractor's monthly outage report shall be prepared in the format presented in Attachment 1.
3. Meter Reading Report in support of internal billings, energy usage management, and monitoring. The Contractor's monthly meter reading report shall be prepared in the format presented in Attachment 2.
4. System Efficiency Report. If, at any time during the contract, as required by Clause C.3 the Contractor shall submit a system efficiency report in a format proposed by the Contractor and accepted by the Contracting Officer.

J01.6 Energy Savings Projects

IAW C.3, Utility Service Requirement, the following projects have been implemented by the Government for managing and monitoring I&I:

?? None

J01.7 Service Area

IAW Clause C.4, Service Area, the service area is defined as all areas within the Carlisle Barracks Area boundaries.

J01.8 Off-Installation Sites

There are no off-installation sites associated with this scope.

J01.9 Specific Transition Requirements

IAW Clause C.17, Transition Plan, **Table 7** lists service connections and disconnections required upon transfer, and **Table 8** lists the improvement projects required upon transfer of the Carlisle Barracks Area electrical distribution system.

TABLE 7
 Service Connections and Disconnections
 Electrical Distribution System Carlisle Barracks Area

Location	Description
None Identified	

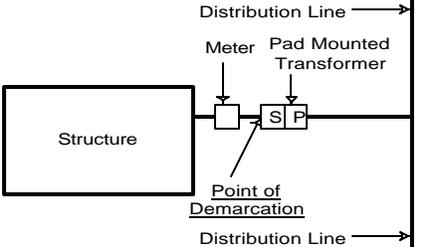
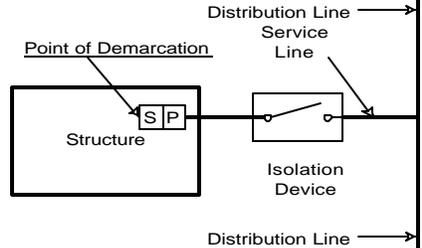
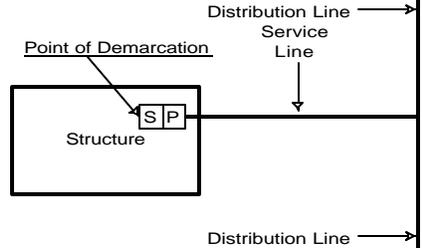
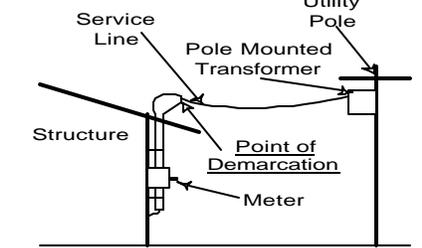
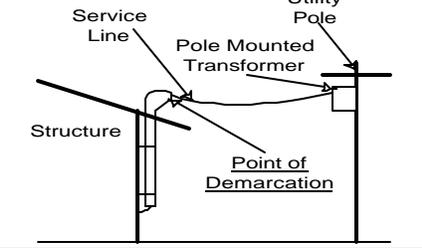
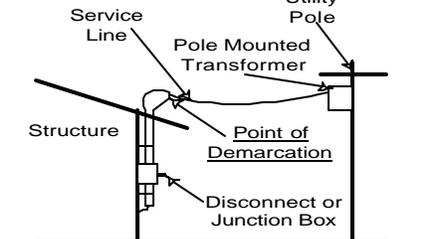
TABLE 8
 System Improvement Projects
 Electrical Distribution System Carlisle Barracks

Location	Description
None Identified	

Electric Distribution System Points of Demarcation

The point of demarcation is defined as the point on the distribution system where ownership changes from the Grantee 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 table below identifies 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 transformer secondary terminal spade.	Pad Mounted Transformer located outside of structure with underground service to the structure and no meter exists.	<p>The diagram shows a rectangular box labeled 'Structure' on the left. A line representing an underground service line connects the structure to a square box labeled 'S/P' (Pad Mounted Transformer) located outside the structure. An arrow points to the connection point between the structure and the transformer, labeled 'Point of Demarcation'. To the right of the transformer, a vertical line represents the 'Distribution Line'. A horizontal line labeled 'Service Line' connects the transformer to the distribution line.</p>
Down current side of the meter	Residential service (less than 200 amps and 240V 1-Phase), and three phase self contained meter installations. Electric Meter exists within five feet of the exterior of the building on an underground secondary line.	<p>The diagram shows a rectangular box labeled 'Structure' on the left. A line representing an underground secondary line connects the structure to a square box labeled 'S/P' (Pad Mounted Transformer) located outside the structure. A square box labeled 'Meter' is located on the underground secondary line between the structure and the transformer. An arrow points to the meter, labeled 'Point of Demarcation'. To the right of the transformer, a vertical line represents the 'Distribution Line'. A horizontal line labeled 'Pad Mounted Transformer' connects the transformer to the distribution line.</p>

Point of Demarcation	Applicable Scenario	Sketch
<p>Point of demarcation is the transformer secondary terminal spade.</p>	<p>Three Phase CT metered service.</p>	
<p>Secondary terminal of the transformer inside of the structure</p>	<p>Transformer located inside of structure and an isolation device is in place with or without a meter</p> <p>Note: Utility Owner must be granted 24-hour access to transformer room.</p>	
<p>Secondary terminal of the transformer inside of the structure</p>	<p>Transformer located inside of structure with no isolation device in place.</p> <p>Note: Utility Owner must be granted 24-hour access to transformer room.</p>	
<p>Point of demarcation is the point where the overhead conductor is connected to the weatherhead.</p>	<p>Electric meter is connected to the exterior of the building on an overhead secondary line.</p>	
<p>Point of demarcation is the point where the overhead conductor is connected to the weatherhead.</p>	<p>Pole Mounted Transformer located outside of structure with secondary attached to outside of structure with no meter.</p>	
<p>Point of demarcation is the point where the overhead conductor is connected to the weatherhead.</p>	<p>Service may be overhead or underground. A disconnect switch or junction box is mounted to the exterior of the structure with no meter.</p>	

Unique Points of Demarcation

The following table lists anomalous points of demarcation that do not fit any of the above scenarios.

Building No.	Point of Demarcation Description
<i>["None" if appropriate]</i>	<p data-bbox="537 422 995 449"><i>Text description of point of demarcation</i></p> <p data-bbox="537 474 1398 579"><i>"User Note: Examples May include: High Security Area, Weapons Storage, Athletic Fields, Generators, Fire Pumps, Sump Pumps, Lift Stations, Condensate Stations, Airfield Lighting Vault, Parade Grounds, Parks, Static Displays, Traffic & Warning Lights, Perimeter/Security Lights, etc."</i></p>

Plants and Substations

Description	Facility #	State Coordinates	Other Information
<p data-bbox="237 810 505 837"><i>["None" if appropriate]</i></p> <p data-bbox="237 858 1398 940"><i>"User Note: This table should include any parcels of land that the Grantee will need to be granted exclusive use under the right-of-way. This land should be described according to a state coordinate system."</i></p>			

