

ATTACHMENT J4

Fort Hood Wastewater System

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J4 Fort Hood Wastewater System

J4.1 Fort Hood Overview

Fort Hood is located in central Texas, approximately 65 miles north of Austin and approximately 20 miles west of Interstate Highway 35 along U.S. Highway 190. The Post covers approximately 339 square miles, straddling Coryell and Bell counties and abutted to the east by the City of Killeen, Texas and to the west by the City of Copperas Cove, Texas.

Fort Hood consists of the five major areas: Main Cantonment area, West Fort Hood, North Fort Hood, maneuver and live-training areas (the Ranges), and the Belton Lake Outdoor Recreation Area (BLORA). The Main Cantonment area represents the original site for South Camp Hood. The site was originally selected in 1941 and construction started 1942. South Camp Hood was designated as Fort Hood in 1951.

Construction of North Camp Hood, which is now known as North Fort Hood, started shortly thereafter. North Fort Hood is located approximately 17 miles to the north of the Main Cantonment area. Approximately 244 square miles of land between North Fort Hood and the Main Cantonment area is used for maneuvers and live fire exercises. Fort Hood has two active airfields: Hood Army Airfield and Robert Gray Airfield. Hood Army Airfield is located on the eastern edge of the Cantonment area and Robert Gray Airfield is located on West Fort Hood. BLORA is located on the eastern-most portion of Fort Hood.

Fort Hood's primary mission is to prepare both active and reserve military components for deployment and execution of military and domestic missions worldwide. The Post is distinctive in that it is the only military installation in the United States capable of stationing and training two armored divisions. A major element of Fort Hood's mission is derived from its extensive training areas. The maneuver and training areas within the Ranges are used to simulate battlefield conditions and support infantry, armor, artillery, and air training operations.

Fort Hood has privatized the military family housing villages on the Post. The exception is Liberty Village (300), which is leased housing.

The Villages of Montague, Comanche I, Comanche II, Comanche III, Kouma, Pershing, Venable, McNair, Chaffee, Wainwright, Patton, and Walker were privatized on 1 October 2001 and were transferred to a limited partnership, Fort Hood Family Housing (FHFH). FHFH is renovating existing housing units, constructing 974 new housing units, and demolishing approximately 368 existing housing units over the first 5 years of the 50-year base contract period.

As of 1 December 2003, new construction has been completed on Comanche II Infill (36 units); Kouma 2a, 2b, 2c (224 units); Montague 3 (146 units); and Comanche 3a Infill (80 units). Construction is ongoing in Comanche 4 (326 units). The approved final construction plans for Montague 4 (80 units) and Comanche 5 (16 units) are expected to be awarded before 31 January 2004.

Six units have been demolished and an additional 26 units will be demolished as a part of the Comanche 5 project. The 336 units in Walker Village are expected to be demolished in the 2005-2006 timeframe.

All Star Maintenance maintains the privatized housing for FHFH. Actus-Lend Lease is the design and construction contractor (new houses, renovations, and demolition) for FHFH. The FHFH Partnership (includes Army) owns and depreciates the supporting utility infrastructure that it installs. The Army agreed to operate and maintain this infrastructure. In order to comply with requirements of the FHFH Partnership after utility privatization, the Army has included in this solicitation's scope the requirement to operate and maintain this infrastructure that will continue to be owned by the FHFH Partnership, and shall be titled "Government Retained" property.

J4.2 Wastewater System Description

J4.2.1 Wastewater System Fixed Equipment Inventory

The Fort Hood wastewater system consists of all appurtenances physically connected to the collection system as defined by the points of demarcation beginning at the connection to the treatment provider and ending at each end use facility. The system may include, but is not limited to, pipelines, manholes, lift stations, valves, controls, treatment plants, and meters. The actual inventory of items sold will be conveyed to the Contractor using the Bill of Sale shown in Attachment J42 to the RFP 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 collection and treatment systems. The description and inventory were developed based on best available data.

The Offeror shall base its proposal on site inspections, information in the technical library, and other pertinent information, as well as the following description and inventory. If after award the Offeror identifies additional inventory not listed in Paragraph J4.2.1.3, the Offeror may submit to the Contracting Officer a request for an equitable adjustment. If the Offeror determines that the inventory listed in Paragraph J4.2.1.3 is overstated, the Offeror shall report the extent of the overstatement to the Contracting Officer, who will determine an equitable adjustment.

J4.2.1.1 Description

The Fort Hood wastewater collection and treatment system is physically separated into three separate systems. One system serves the Main Cantonment area and West Fort Hood, the second serves North Fort Hood, and the third serves BLORA. The wastewater collection and treatment system at Fort Hood treats wastewater from administrative, industrial, and residential facilities. The system serves approximately 3,500 facilities on the Main Cantonment area, 100 facilities on West Fort Hood, 130 facilities on North Fort Hood, and 10 facilities at BLORA.

Construction of the wastewater collection and treatment infrastructure began in the early 1940s and has been upgraded and expanded regularly to handle system demands.

Specifically excluded from privatization of the wastewater collection and treatment system are:

- Stormwater systems.
- Oil/water separators, except those integral to the lift stations.
- Grease traps.
- Septic tanks and leach fields.
- Mains, service laterals, treatment facilities, and associated appurtenances in Liberty Village.
- Ownership of the mains, service laterals and appurtenances in housing areas defined as Comanche II Infill, Comanche 3a, Comanche 4, Comanche 5, Kouma 2 a&b, Kouma 2c, Montague 3, and Montague 4. The utility infrastructure in these housing areas is retained by the government and not included with the utility system being conveyed.

The Fort Hood wastewater collection and treatment system is physically separated into three separate systems. One system serves the Main Cantonment area and West Fort Hood, the second serves North Fort Hood, and the third serves BLORA.

J4.2.1.1.1 Main Cantonment Area and West Fort Hood

The system that serves the Main Cantonment area and West Fort Hood does not include any treatment facilities. Wastewater is collected and discharged to the Belton County Water Control and Improvement District (BCWCID) No. 1 sanitary wastewater treatment system.

There are four locations where wastewater is conveyed from government owned facilities to BCWCID for components of the wastewater collection system that serves the Main Cantonment area and West Fort Hood. The locations are: approximately two miles east of the Post boundary, south side of Walker Village at 4th Street in the City of Killeen, south side of Warrior Way at Stewart Street in the City of Killeen, and at the Bridge over Nolan Creek on the west side of Hwy. 195 just south of Business 190.

The first point of demarcation is located off-Post. The wastewater line exits the Post near the intersection of Fort Hood St. and Business Route 190. There are two meters at this location owned by BCWCID. This is the metering point for wastewater discharged through this line to the BCWCID facility. The Government owned line extends past the BCWCID meters, off-post in an easterly direction for approximately 2 miles in a Fort Hood perpetual easement that runs either along a railroad (Burlington Northern Santa Fe railroad) or generally parallel to the railroad line. The wastewater line terminates in a junction box located in a field just east of the intersection of Avenue G and Patton Dr. The point of demarcation for this location is where the 30-inch line enters the junction box two miles off-post. There are points of demarcation on each side of both BCWCID meters.

The second point of demarcation is the upstream side of the BCWCID meter located at 4th Street in the City of Killeen. The meter vault is located at the southeast corner of the intersection of the Installation boundary and Grave Drive, off Post.

The third point of demarcation is the upstream side of the BCWCID meter located at the end of Stewart Street in the City of Killeen. The meter vault is located south of the Installation boundary along Warrior Way, north of the dead end on Stewart Street.

The fourth point of demarcation is where the Government owned vertical drop pipe enters the City of Killeen sanitary sewer manhole on the west side of Hwy. 195. The manhole is located west of the bridge over Nolan Creek on Hwy 195, south of the intersection of Hwy 195 and Business 190.

J4.2.1.1.2 North Fort Hood

A treatment plant at North Fort Hood consisting of a facultative lagoon and chlorine contact basin treats wastewater collected from facilities on North Fort Hood. The treatment facility consists of two lagoons, connected in series, each with a surface area of approximately 6 acres. Each lagoon is approximately 750 feet long, 350 feet wide, and 3.5 feet deep, and the combined volume of the lagoons is approximately 13.2 million gallons, or 65,000 cubic yards. The system includes all appurtenances up to the outfall where treated wastewater is discharged into a drainage ditch that eventually flows into Leon River.

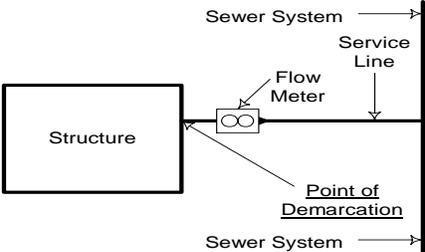
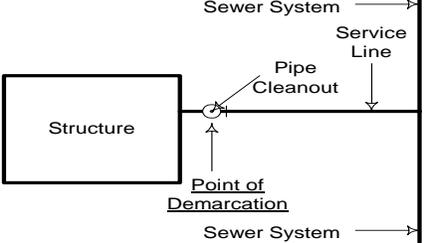
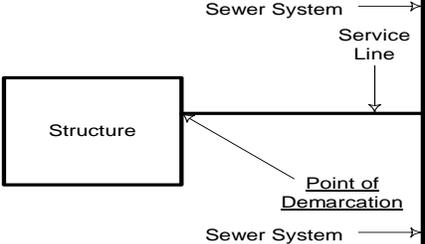
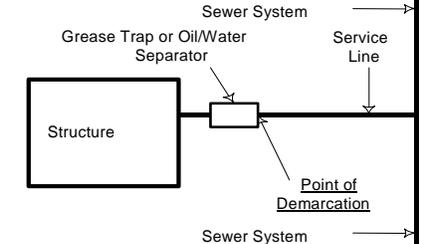
J4.2.1.1.3 BLORA

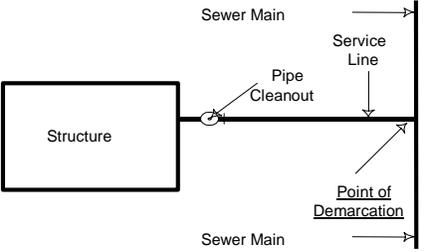
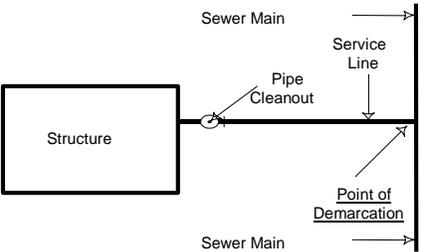
A 60,000-gallon-per-day (gpd) activated sludge package plant treats sanitary wastewater from the recreation area and discharges treated wastewater into a ditch that discharges into Nolan Creek, which terminates into Belton Lake. The point of demarcation for the BLORA system is the outfall where treated wastewater is discharged into the drainage ditch. Wastewater is discharged IAW NPDES permit TX0002313.

J4.2.1.2 Points of Demarcation

The Fort Hood wastewater collection and treatment system being studied consists of all components from the point where wastewater is collected from individual facilities to the point where the Post discharges wastewater to BCWCID, the Leon River or the drainage ditch for BLORA. The point of demarcation for each end user is defined as the point or component on the collection system where ownership changes from building owner to the utility owner. The beginning point of demarcation was described above in Paragraphs J4.2.1.1.1 through J4.2.1.1.3. In most cases the point of demarcation for the users is the first upstream component (i.e., cleanout, valve, etc.) of the system located outside of the facility footprint. Table 1 identifies the type of service and general location of the point of demarcation with respect to each building served by the collection system.

TABLE 1
 Wastewater Collection and Treatment System Points of Demarcation
 Wastewater Collection and Treatment System, Fort Hood, Texas

Point of Demarcation	Applicable Scenario	Sketch
<p>Point where the service line exits the structure</p> <p><i>Note: A new cleanout device should be installed within 25' of building during any stoppage or maintenance action. The upstream side of the cleanout device will then become the new point of demarcation.</i></p>	<p>Non-residential service. Wastewater system flow meter is located on the service line exiting the structure.</p>	 <p>The sketch shows a rectangular box labeled 'Structure' on the left. A horizontal line representing the 'Service Line' extends from the structure to the right, where it meets a vertical line representing the 'Sewer System'. A 'Flow Meter' is shown as a small circle with two horizontal lines on the service line, just outside the structure. An arrow points to this flow meter with the label 'Point of Demarcation'. Arrows on the sewer system line indicate flow direction.</p>
<p>Point of demarcation is the upstream side of the cleanout device.</p>	<p>Non-residential service. No flow meter exists and a wastewater system cleanout is located within 25 feet of the building perimeter on the service line exiting the structure.</p>	 <p>The sketch shows a rectangular box labeled 'Structure' on the left. A horizontal line representing the 'Service Line' extends from the structure to the right, where it meets a vertical line representing the 'Sewer System'. A 'Pipe Cleanout' is shown as a small circle with a vertical line extending upwards from the service line, just outside the structure. An arrow points to this cleanout with the label 'Point of Demarcation'. Arrows on the sewer system line indicate flow direction.</p>
<p>Point where the service line exits the structure</p> <p><i>Note: A new cleanout device should be installed within 25' of building during any stoppage or maintenance action. The upstream side of the cleanout device will then become the new point of demarcation.</i></p>	<p>Non-residential service. No flow meter or cleanout exists within 25 feet of the building perimeter on the service line exiting the structure.</p>	 <p>The sketch shows a rectangular box labeled 'Structure' on the left. A horizontal line representing the 'Service Line' extends from the structure to the right, where it meets a vertical line representing the 'Sewer System'. An arrow points to the junction of the service line and sewer system with the label 'Point of Demarcation'. Arrows on the sewer system line indicate flow direction.</p>
<p>Point of demarcation is the downstream side of grease trap or oil/water separator.</p> <p><i>Note: This point of demarcation does not apply to grease traps or oil/water separators included as a part of the wastewater system inventory (connected to lift/pump stations).</i></p>	<p>Non-residential service. Grease trap or oil/water separator.</p>	 <p>The sketch shows a rectangular box labeled 'Structure' on the left. A horizontal line representing the 'Service Line' extends from the structure to the right, where it meets a vertical line representing the 'Sewer System'. A 'Grease Trap or Oil/Water Separator' is shown as a small rectangle on the service line, just outside the structure. An arrow points to the downstream side of this separator with the label 'Point of Demarcation'. Arrows on the sewer system line indicate flow direction.</p>

Point of Demarcation	Applicable Scenario	Sketch
<p>Point of demarcation for is the point where the service line connects to the sewer main.</p> <p><i>Note: This point of demarcation has been established by the FHFH initiative. All components of the wastewater collection and treatment system not included as a part of the residence are included with wastewater collection and treatment system included for privatization.</i></p>	<p>Residential service in existing housing villages (McNair, Montague, Montague 2, Patton Park, Wainwright, Walker, Pershing Park, Venable, Kouma, Chaffee, Comanche I, Comanche II, and Comanche III.</p>	
<p>Point of demarcation for utility ownership is the point where the FHFH Partnership installed infrastructure connects to the existing sewer collection main.</p> <p><i>Note: This point of demarcation has been established by the FHFH initiative. All components of the wastewater collection and treatment system not included as a part of the residence are included with wastewater collection and treatment system included for privatization.</i></p>	<p>Residential housing installed by FHFH, Comanche II Infill, Comanche 3a, Comanche 4, Comanche 5, Kouma 2a&b, Kouma 2c, Montague 3, and Montague 4.</p>	<p>See Attachment J for general representations of points of demarcation separating FHFH installed infrastructure and existing sewer collection main.</p>
<p>Point of demarcation for utility service is the point where the service line connects to the new sewer main.</p> <p><i>Note: This point of demarcation has been established by the FHFH initiative. All components of the wastewater collection and treatment system not included as a part of the residence are included with wastewater collection and treatment system included for privatization.</i></p>	<p>Residential housing installed by FHFH, Comanche II Infill, Comanche 3a, Comanche 4, Comanche 5, Kouma 2a&b, Kouma 2c, Montague 3, and Montague 4.</p>	
<p>Point of demarcation is where the sanitary sewer main from the MATES Facilities enters the first manhole south of 28th street in North Fort Hood.</p> <p><i>Note: Contractor shall own the manhole.</i></p>	<p>MATES Facility at North Fort Hood</p>	<p>None</p>

J4.2.1.3 Condition Assessment

Several components in the Fort Hood wastewater collection piping have either exceeded or are approaching the end of their useful lives. These include:

- Cast iron and concrete pipe installed in the 1940s and 1950s.
- Brick manholes installed in the 1940s.

Most of the lift stations at Fort Hood are in good condition. Deficiencies have been reported for a few lift stations.

The post-wide supervisory control and data acquisition (SCADA) system in place at Fort Hood has not been adequately maintained and most of the system is no longer functional and is not being used. The individual lift stations are being controlled manually and do not provide reliable data to the SCADA system.

The following recent reports provide greater detail regarding the condition of the Fort Hood Wastewater Collection System:

- “Wastewater System Evaluation”, prepared by the U.S. Army Center for Health Promotion and Preventive Medicine, May 2001.
- “Engineering Assistance for Water/Wastewater Study: Wastewater System Report Fort Hood, Texas”, prepared by CH2M HILL, September 2003.

J4.2.1.4 Inventory

The wastewater collection system piping consists of approximately 200 miles of buried piping ranging in size from 4-inch service laterals to 30-inch main lines. There are 39 wastewater pump/lift stations to collect and transfer wastewater to treatment facilities. Other components include manholes, valves, cleanouts, and meters. Detailed inventories of the wastewater collection system piping, lift/pump stations, other system components, and wastewater treatment facilities are shown in **Tables 2A, 2B, 2C, and 2D** respectively.

The approximate year of construction for distribution mains were based on the oldest age of facilities served on a particular collection line, and then adjusted based on a review of the drawings with utility shop personnel to account for system replacements and new construction. The approximate year of construction was then adjusted to a mid-decade convention e.g., components constructed in the 1970s were shown in the inventory as 1975. Components installed since 2000 were shown in the inventory as 2000.

The components of the wastewater collection system that are being retained by the government are shown in **Table 2E**. This infrastructure represents the mains, services and appurtenances in Comanche II Infill, Comanche 3a, Comanche 4, Comanche 5, Kouma 2 a&b, Kouma 2c, Montague 3, and Montague 4, and will not be conveyed with the utility system being privatized; however, the Contractor shall provide utility services for this infrastructure in accordance with Section C of the service contract and this utility specific J Attachment.

When not specifically identified by system drawings, the size and type of system components were estimated, generally based on the size of the piping the component was

connected to. Additionally, when the year of construction was not known, it was estimated based on the age of the piping (for system valves and fire hydrants) or the age of the facility served (for isolation valves). Facility ages were based on the Fort Hood Real Property report.

TABLE 2A
 Fixed Inventory, Wastewater Collection Piping
 Wastewater Collection and Treatment System, Fort Hood, Texas

Approximate Year of Construction (quantity is LF)									
MATERIAL	Size	1945	1955	1965	1975	1985	1995	2000	Total
C-900 Pipe	6 in.						5,595		5,595
C-900 Pipe	8 in.						3,471		3,471
C-900 Pipe	12 in.						2,886		2,886
C-900 Pipe	14 in.							18,810	18,810
C-900 Pipe Total		-	-	-	-	-	11,952	18,810	30,762
CI Pipe	4 in.				1,914				1,914
CI Pipe	6 in.	393		696			490		1,579
CI Pipe	8 in.		417		4,095				4,512
CI Pipe	10 in.				9,527				9,527
CI Pipe	12 in.		704		1,070				1,774
CI Pipe Total		393	1,121	696	16,606	-	490	-	19,306
Clay Tile Pipe	8 in.					1,517			1,517
Concrete Pipe	4 in.	15,677	11,948	14,234	6,135	3,212		52	51,258
Concrete Pipe	6 in.	14,099	13,530	15,440	5,508	3,459	37		52,073
Concrete Pipe	8 in.	53,883	55,971	63,673	12,720	9,002	2,301	365	197,915
Concrete Pipe	10 in.	16,797	5,447	10,736	13,170	82			46,232
Concrete Pipe	12 in.	15,120	4,571	1,897	3,552	7,411	873		33,424
Concrete Pipe	15 in.			2,401	1,254				3,655
Concrete Pipe	18 in.	2,165		1,916	3,647				7,728
Concrete Pipe	21 in.	3,628	4,199	3,154					10,981
Concrete Pipe	24 in.	2,882	4,891						7,773
Concrete Pipe	27 in.		427		4,059				4,486
Concrete Pipe	30 in.	8,142				4,365	1,944		14,451

UTILITIES PRIVATIZATION

Approximate Year of Construction (quantity is LF)									
MATERIAL	Size	1945	1955	1965	1975	1985	1995	2000	Total
Concrete Pipe Total		132,393	100,984	113,451	50,045	27,531	5,155	417	429,976
PE Pipe	3 in.							959	959
PE Pipe	4 in.						2,483		2,483
PE Pipe	8 in.							530	530
PE Pipe	10 in.							208	208
PE Pipe Total		-	-	-	-	-	2,483	1,697	4,180
PVC Pipe	2 in.				5,502	627	2,507	494	9,130
PVC Pipe	3 in.				3,091	221	1,616	340	5,268
PVC Pipe	4 in.				9,558	14,727	14,156	6,692	45,133
PVC Pipe	5 in.					481			481
PVC Pipe	6 in.				72,404	25,965	72,122	6,073	176,564
PVC Pipe	8 in.				33,223	32,645	65,361	8,566	139,795
PVC Pipe	10 in.				8,681	8,271	1,985	1,243	20,180
PVC Pipe	12 in.				8,047	14,399	9,953	12,704	45,103
PVC Pipe	15 in.				260		3,012		3,272
PVC Pipe	18 in.				547		2,882		3,429
PVC Pipe	24 in.							6,439	6,439
PVC Pipe Total		-	-	-	141,313	97,336	173,594	42,551	454,794
VC Pipe	4 in.	2,014	5,885	1,769	306	275			10,249
VC Pipe	6 in.	1,167	2,468	440	928	276			5,279
VC Pipe	8 in.	7,860	2,822	9,467	526	166			20,841
VC Pipe	10 in.	1,958	625	1,007	95				3,685
VC Pipe	12 in.	3,408	304						3,712
VC Pipe	18 in.	1,743	1,557						3,300
VC Pipe	21 in.				997				997
VC Pipe Total		18,150	13,661	12,683	2,852	717	-	-	48,063
Grand Total		150,936	115,766	126,830	210,816	127,101	193,674	63,475	988,598

MATERIAL	Size	Approximate Year of Construction (quantity is LF)							Total
		1945	1955	1965	1975	1985	1995	2000	
Notes:		PVC = polyvinyl chloride							
C-900 = PVC pipe, class 900		VC = vitrified clay							
CI = cast iron		LF = linear feet							
PE = polyethylene									

TABLE 2B
 Fixed Inventory, Wastewater Pump/Lift Stations
 Wastewater Collection and Treatment System, Fort Hood, Texas

Lift Station/Pumps	Size	Quantity	Unit	Approximate Year of Construction
Lift Station 13083, Wetwell Only, Concrete	4' dia.x 16'	1	EA	1996
pumps, submersible	5 HP	2	EA	1996
Lift Station 1972, Wetwell Only, Concrete	4' dia.x 16'	1	EA	1986
pumps, submersible	3HP	2	EA	1986
Lift Station 26015, Wetwell Only, Concrete	4' dia.x 8'	1	EA	1986
pumps, submersible	5HP	2	EA	1986
Lift Station 44014, Wetwell Only, Concrete	8' dia. x 16'	1	EA	1988
pumps, submersible	5 HP	2	EA	1988
Lift Station 6949, Wetwell Only, Concrete	6' wide x 6' long x 6'	1	EA	1986
pumps, submersible	1 HP	2	EA	1986
Lift Station 22023, Wetwell Only, Concrete	7' dia. x 23'	1	EA	1994
pumps, submersible	5 HP	2	EA	1994
Fence, chain link	6 feet Chain Link	51	LF	1994
Lift Station 32031, Wetwell Only, Concrete	8' dia. x 31'	1	EA	1986
pumps, submersible	7.5 HP	2	EA	1986
Fence, chain link	6 feet Chain Link	51	LF	1986
Lift Station 30045, Wetwell Only, Concrete	4' dia.x 35'	1	EA	1996
pumps, submersible	5 HP	2	EA	1996
Fence, chain link	6 feet Chain Link	57	LF	1996
Lift Station 11037, Wetwell Only, Concrete	4' dia.x 6'	1	EA	1993
pumps, submersible	2 HP	2	EA	1993
Fence, chain link	6 feet Chain Link	72	LF	1993
Lift Station 88016, Wetwell Only, Concrete	7' dia. x 17'	1	EA	1988

UTILITIES PRIVATIZATION

Lift Station/Pumps	Size	Quantity	Unit	Approximate Year of Construction
pumps, submersible	20 HP	2	EA	1988
Fence, chain link	6 feet Chain Link	91	LF	1988
Lift Station 90106, Wetwell Only, Concrete	5' dia. x 20'	1	EA	1988
pumps, submersible	2 HP	2	EA	1988
Backup generator, diesel	5 KW	1	EA	1988
Fence, chain link	6 feet Chain Link	96	LF	1988
Lift Station 721, Wetwell Only, Concrete	7' dia. x 14'	1	EA	1986
pumps, submersible	5 HP	2	EA	1986
Fence, chain link	6 feet Chain Link	111	LF	1986
Lift Station 90110, Wetwell Only, Concrete	9' wide x 8' long x 15'	1	EA	1986
pumps, submersible	14.8 HP	2	EA	1986
Backup generator, diesel	30 KW	1	EA	1986
Fence, chain link	6 feet Chain Link	240	LF	1986
Lift Station 4115, Wetwell Only, Concrete	10' wide x 6' long x 8'	1	EA	1942
pumps, submersible	3 HP	2	EA	1991
Building, cinderblock	8'x10', estimated	80	SF	1976
Fence, chain link	6 feet Chain Link	72	LF	1976
Lift Station 9534, Wetwell Only, Concrete	12' dia. x 5'	1	EA	1956
pumps, submersible	5 HP	1	EA	1991
Building, cinderblock	10'x16', estimated	160	SF	1956
Lift Station 93040, Wetwell Only, Concrete	14' wide x 6' long x 20'	1	EA	2002
pumps, submersible	250 HP	3	EA	2002
pumps, submersible	50 HP	3	EA	2002
pumps, grinders	5 HP	2	EA	2002
Backup generator, diesel	500 KW, estimated	1	EA	2002
Electric Controls		1	EA	2002
Building, cinderblock, 2 story	8'x12', estimated	192	SF	1973
Building, cinderblock	8'x8', estimated	64	SF	1973
Building, metal skid mounted	6'x10', estimated	60	SF	2002
Fence, chain link	6 feet Chain Link	1,000	LF	2002
Site work, 2 acres + berm w/ concrete riprap		7,466	CY	2002

UTILITIES PRIVATIZATION

Lift Station/Pumps	Size	Quantity	Unit	Approximate Year of Construction
Lift Station 41012, Wetwell/Drywell, Concrete	8' wide x 16' long x 16', 11' wide x 12' long x 14'	1	EA	1968
3 pumps, centrifugal	20 HP	3	EA	1991
Backup generator, diesel	130 KW	1	EA	1986
Building, fiberglass	5'x8', estimated	40	SF	1968
Fence, chain link	6 feet Chain Link	98	LF	1968
Lift Station 38020, Wetwell Only, Concrete	10' dia. x 16'	1	EA	1977
pumps, submersible	5 HP	2	EA	1991
Building, fiberglass	5'x8', estimated	40	SF	1977
Fence, chain link	6 feet Chain Link	120	LF	1977
Lift Station 20122, Wetwell Only, FRP	5' dia.x 6'	1	EA	2001
pumps, submersible	5 HP	2	EA	2001
Lift Station 20141, Wetwell Only, Concrete	8' dia.x 30'	1	EA	2001
pumps, submersible	5 HP	2	EA	2001
Lift Station 50012, Wetwell Only, FRP	5' dia. x 5'	1	EA	1997
pumps, submersible	5 HP	2	EA	1997
Lift Station 50007, Wetwell Only, FRP	7' dia. x 5'	1	EA	1998
pumps, submersible	2 HP	2	EA	1998
Lift Station 52387, Wetwell Only, FRP	5' dia. x 5'	1	EA	1994
pumps, submersible	2 HP	2	EA	1994
Lift Station 20151, Wetwell Only, FRP	5' dia.x 6'	1	EA	1977
pumps, submersible	5 HP	2	EA	1991
Fence, chain link	6 feet Chain Link	45	LF	1977
Lift Station 7087, Wetwell Only, FRP	4' dia.x 8'	1	EA	1995
pumps, submersible	2 HP	2	EA	1995
Fence, chain link	6 feet Chain Link	45	LF	1995
Lift Station 20148, Wetwell Only, FRP	5' dia.x 6'	1	EA	1977
pumps, submersible	5 HP	2	EA	1991
Fence, chain link	6 feet Chain Link	68	LF	1977
Lift Station 53905, Wetwell Only, FRP	6' dia. x 12'	1	EA	2000
pumps, submersible	5 HP	2	EA	2000
Fence, chain link	6 feet Chain Link	80	LF	2000

UTILITIES PRIVATIZATION

Lift Station/Pumps	Size	Quantity	Unit	Approximate Year of Construction
Lift Station 20131, Wetwell Only, FRP	8' dia.x 15'	1	EA	2001
pumps, submersible	5 HP	2	EA	2001
Fence, chain link	6 feet Chain Link	118	LF	1982
Lift Station 88018, Wetwell/Drywell, Concrete	6' dia. x 14', 13' dia. x 24'	1	EA	1993
pumps, centrifugal	1.5 HP	2	EA	1993
Fence, chain link	6 feet Chain Link	118	LF	1993
Lift Station 20143, Wetwell Only, Steel	4' dia.x 6'	1	EA	1977
pumps, submersible	5 HP	2	EA	1991
Lift Station 7036, Wetwell Only, Steel	8' dia.x 16'	1	EA	1987
pumps, submersible	5 HP	2	EA	1987
Fence, chain link	6 feet Chain Link	55	LF	1987
Lift Station 90049, Wetwell Only, Steel	6' dia.x 12'	1	EA	1963
pumps, submersible	5 HP	2	EA	1991
Building, cinderblock	24'x24', estimated	576	SF	1963
Lift Station 8001, Wetwell/Drywell, Concrete	14' wide x 12' long x 20'	1	EA	1956
pumps, centrifugal	10 HP	3	EA	1991
Backup generator, diesel	130 KW	1	EA	1986
Building, cinderblock	8'x10', estimated	80	SF	1956
Fence, chain link	6 feet Chain Link	170	LF	1956
Lift Station 90070, Wetwell/Drywell, Steel	8' dia.x 12'	1	EA	1987
pumps, centrifugal	20 HP	2	EA	1987
Lift Station 22019, Wetwell Only, FRP	3' dia.x 6'	1	EA	2001
pumps @ 2 HP	2 HP	2	EA	2001

Notes:

EA = each

FRP = fiberglass reinforced plastic

HP = horsepower

KW = kilowatts

LF = linear feet

SF = square feet

TABLE 2C
 Fixed Inventory, Wastewater Collection System Cleanouts, Manholes, and Valves
Wastewater Collection and Treatment System, Fort Hood, Texas

Material	Size	Approximate Year of Construction (quantity is EA)							Total
		1945	1955	1965	1975	1985	1995	2000	
Cleanout	2 in.				13		2		15
Cleanout	3 in.				5	19	22	1	47
Cleanout	4 in.		2		31	1	13		47
Cleanout	4 in.	31	151	169	243	164	48	35	841
Cleanout	6 in.		2	3	105	1	15	4	130
Cleanout	6 in.	43	44	29	86	82	132	19	435
Cleanout	8 in.		1	13	69	1	4		88
Cleanout	8 in.	10	8	12	20	15	12	5	82
Cleanout	10 in.				11				11
Cleanout	10 in.	2			1				3
Cleanout	12 in.				4		5		9
Cleanout	12 in.							3	3
Cleanout	14 in.							2	2
Cleanout	18 in.	2			1				3
Cleanout	21 in.			3					3
Cleanout Total		88	208	229	589	283	253	69	1,719
Brick Manhole		365	338	387	22	60	39	6	1,217
Concrete Manhole		10	3	10	600	303	556	66	1,548
Manhole Total		375	341	397	622	363	595	72	2,765

TABLE 2D
 Fixed Inventory, Wastewater Treatment Facilities
Wastewater Collection and Treatment System, Fort Hood, Texas

Description	Size	Quantity	Unit	Approximate Year of Construction
NFH Wastewater Treatment Plant				
Sludge Lagoons	65,000	CY	CY	1976

UTILITIES PRIVATIZATION

Description	Size	Quantity	Unit	Approximate Year of Construction
Aerators	3 HP	3	EA	1991
Aerators, Solar auxiliary powered, 24 volt system	3 HP	2	EA	2003
Pumps, centrifugal	5 HP	2	EA	2003
Chlorinating System		1	EA	2003
Building, Steel	16'x16', estimated	256	SF	1976
BLORA Wastewater Treatment Plant	Package Plant	60,000	GPD	2001
Pumps, centrifugal	5 HP	2	EA	2001
Pumps, centrifugal	2 HP	1	EA	2001
Blowers	5 HP	2	EA	2001
Blowers	5 HP	2	EA	2001
Lift Station 20146, Wetwell Only, Steel	6' dia. x 7'	1	EA	1977
Pumps, centrifugal	5 HP	2	EA	1995
Backup generator, diesel	30 KW	1	EA	2001
Chlorinating System		1	EA	2001
Building, Cinderblock	8'x16', estimated	128	SF	2001
Fence, chain link	6 feet Chain Link	192	LF	2001

TABLE 2E
 Fixed Inventory, Government Retained Infrastructure
Wastewater Collection and Treatment System, Fort Hood, Texas

Approximate Year of Construction is 2002				
Village Name	Material	Size	Units	Quantity
COMANCHE II INFILL	PVC Pipe	6 in.	LF	1,619
COMANCHE II INFILL	Cleanout	6 in.	EA	7
COMANCHE II INFILL	Concrete Manhole		EA	5

Approximate Year of Construction is 2002				
Village Name	Material	Size	Units	Quantity
RCI Pump Station in Comanche II (51400), Wetwell Only, Concrete	9' dia.x 11'		EA	1
pumps, submersible	100 HP		EA	3
Backup generator, diesel	350 KW		EA	1
Fence, chain link	6 feet Chain Link		LF	270
COMANCHE 3a	PVC Pipe	6 in.	LF	3,001
COMANCHE 3a	Concrete Manhole		EA	11
RCI Pump Station in Comanche III (52380), Wetwell Only, Concrete	9' dia.x 11'		EA	1
pumps, submersible	20 HP		EA	3
Backup generator, diesel	150 KW		EA	1
Fence, chain link	6 feet Chain Link		LF	224
COMANCHE 4	PVC Pipe	8 in.	LF	22,181
COMANCHE 4	Cleanout	8 in.	EA	16
COMANCHE 4	Concrete Manhole		EA	56
COMANCHE 5	PVC Pipe	8 in.	LF	655
COMANCHE 5	Concrete Manhole		EA	4
KOUMA 2 a&b	PVC Pipe	6 in.	LF	2,835
KOUMA 2 a&b	PVC Pipe	8 in.	LF	1,625
KOUMA 2 a&b	Cleanout	6 in.	EA	5
KOUMA 2 a&b	Concrete Manhole		EA	16
KOUMA 2c	PVC Pipe	6 in.	LF	3,016
KOUMA 2c	Cleanout	6 in.	EA	13
KOUMA 2c	Brick Manhole		EA	1
KOUMA 2c	Concrete Manhole		EA	14
RCI Pump Station in Kouma (48512), Wetwell Only,	8' dia.x 21'		EA	1

Approximate Year of Construction is 2002				
Village Name	Material	Size	Units	Quantity
Concrete				
pumps, submersible	30 HP		EA	2
Backup generator, diesel	75 KW		EA	1
Fence, chain link	6 feet Chain Link		LF	890
MONTAGUE 3	PVC Pipe	6 in.	LF	3,771
MONTAGUE 3	PVC Pipe	8 in.	LF	2,976
MONTAGUE 3	Cleanout	6 in.	EA	2
MONTAGUE 3	Brick Manhole		EA	1
MONTAGUE 3	Concrete Manhole		EA	27
MONTAGUE 4	PVC Pipe	8 in.	LF	3,761
MONTAGUE 4	Cleanout	8 in.	EA	4
MONTAGUE 4	Brick Manhole		EA	1
MONTAGUE 4	Concrete Manhole		EA	16

J4.2.2 Wastewater System Non-Fixed Equipment and Specialized Tools

Table 3 lists other ancillary equipment (spare parts), and **Table 4** 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 3
Spare Parts
Wastewater Collection and Treatment System, Fort Hood, Texas

Qty	Item	Make/Model	Description	Remarks
No spare parts are included with the Fort Hood Wastewater Collection and Treatment System.				

TABLE 4
Specialized Vehicles and Tools
Wastewater Collection and Treatment System, Fort Hood, Texas

Qty	Item	Make/Model	Description	Remarks
No specialized tools or vehicles are included with the Fort Hood Wastewater Collection and Treatment System.				

J4.2.3 Wastewater System Manuals, Drawings, and Records

Table 5 lists the manuals, drawings, and records that will be transferred with the system.

TABLE 5
Manuals, Drawings, and Records
Wastewater Collection and Treatment System, Fort Hood, Texas

Qty	Item	Description	Remarks
1	Drawing	CAD Drawing	Hard Copy
1	Electronic	CAD Drawing	Electronic Copy
1	Electronic Database	GIS Database	Electronic Copy
2	O&M Manuals	Manuals for O&M of system components	Hard Copy
4	Reports	System Analysis/Performance Reports	Hard Copy
2	Reports	Utility Studies	Hard Copy
1	FHT 420-X10	Digging Permit Process Form	Hard Copy
1	Exercises Procedures	Requirements of utility support during exercises	Hard Copy
2	Reports	Discharge Reports for NPDES reporting	Hard Copy

Note: Manuals, drawings, records, and reports included with the Fort Hood Wastewater Collection and Treatment System are included in the Bidders' Library

J4.3 Specific Service Requirements

The service requirements for the Fort Hood wastewater system are as defined in the Paragraph C, *Description/Specifications/Work Statement*. The following requirements are specific to the Fort Hood wastewater system and are in addition to those found in Paragraph C. If there is a conflict between requirements described below and Paragraph C, the requirements listed below take precedence over those found in Paragraph C.

J4.3.1 Government-retained Utilities Infrastructure

Several new family housing projects are currently under construction or will have begun construction by the time this contract is awarded. The FHFH Partnership, may install

additional utilities infrastructure from the existing Fort Hood utility systems to the points of demarcation of these newly constructed housing units (see Paragraph J2.2.1.3 Points of Demarcation).

The Contractor shall separately cost services for the infrastructure to be retained by the Government under CLIN AE, *Fixed Monthly Charge for Government Retained Infrastructure*, see Paragraph B.5.5 (Offerors proposing a Tariff under Schedule B-1) or B.6.5 (Offerors proposing under Schedules B-2, B-3 or B-4), and Paragraph C.2.1.2, *Acquisition of Utility Services for Government Retained Infrastructure*.

J4.3.2 Digging Permits

J4.3.2.1 Contractor-Provided Permits

Contractor shall participate in the Fort Hood Department of Public Works (DPW) digging permit process. The Contractor shall complete the section of form FHT 420-X10, Coordination for Land Excavation, which may impact on the integrity of his Utility Systems and the safety of the requestors and return it to the DPW at building 4612, Fort Hood, Texas for each permit within 3 working days of receipt of the form from DPW. As part of this process, the Contractor shall routinely accept and process digging permit requests from Government work force; military units; FHFH partnership; maintenance, construction, and Army operations contractors; cable and phone maintenance and installation companies; fence rental companies; individual residents, and additional entities as identified by Contracting Officer to have a valid need for a digging permit. Contractor shall identify methodology of accepting, processing, approving, and listing reason(s) for disapproval. Contractor shall be responsible for all repairs, costs, and damages due to excavations by others for which he did not properly mark his utilities as part of the DPW digging permit process.

J4.3.2.2 Fort Hood-Provided Permits

The Contractor shall first obtain digging permits directly from DPW for utilities owned by the Government before any drilling, digging, or excavation is undertaken. The Contractor shall provide a completed form FHT 420-X10, Coordination for Land Excavation, to the DPW building 4612, Fort Hood, Texas for each permit. Allow 14 working days for Government review of digging permit requests. A digging permit for a specified area of excavation expires 30 days after the issue date; Contractor must re-apply for a new permit to perform excavation in the area if the excavation was not started within the 30-day period. Permits will identify all underground utilities within 1,500 mm (5 feet) of the designated area. Contractor shall be responsible for all repairs, costs, and damages due to his excavations that fail to comply with the DPW digging permit process, including excavations extending beyond areas that have been cleared for excavation.

J4.3.3 SCADA System Requirements

The Supervisory Control and Data Acquisition (SCADA) system in place at Fort Hood has not been maintained and is no longer functioning. The Contractor shall install a SCADA system, or an alternate data capturing system approved by the Contracting Officer, that he shall own, operate, and maintain.

The Contractor shall determine the type, extent, and requirements of the SCADA system in accordance with applicable standards. The Contractor shall provide the Government read only access to the SCADA system for monitoring system components on Fort Hood. The Contractor shall coordinate with the Contracting Officer to establish the means for Government access.

At a minimum, the Contractor shall include flow measurement and run time monitoring for only the primary Lift Stations (Facilities 8001, 41012, 48512, 51400, and 52380) with the SCADA system as approved by the Contracting Officer. Monitoring shall include pump status (H/O/A), pump function (off/on), and amp draw. Real time monitoring shall include lift station flowrate to include instantaneous flowrate in 15 minute increments and total daily consumption.

The Contractor shall include run time monitoring only for all other Lift Stations with the SCADA system as approved by the Contracting Officer. Run time monitoring shall include pump status (H/O/A), pump function (off/on), and amp draw.

J4.3.4 System Testing

The Contractor shall obtain a NPDES permit for the operation of the North Fort Hood and BLORA treatment facility discharges. To the extent allowable by law, Fort Hood will transfer their existing NPDES permit to the successful Bidder. The Contractor shall provide the Contracting Officer with a copy of any and all testing information and reports submitted for compliance with the NPDES permits.

J4.3.5 Fire Control and Safety

The Contractor shall abide by Fort Hood fire protection requirements. The utility system purchased by the Contractor may include facilities. These facilities may or may not include fire alarm systems. Where required by federal, state or local regulation, the Contractor shall maintain the fire alarm system for all facilities owned and operated by the Contractor. The Contractor shall permit Fire Department personnel access to their facilities to perform fire inspections and emergency response.

J4.3.6 Cost of Supporting Utilities

The Contractor is responsible for all supporting utilities that may be required to own, operate and maintain the utility system being privatized. Supporting utilities are defined as the supply of electricity, necessary to own, operate, and maintain the utility system. The Contractor shall coordinate with Fort Hood DPW and the Contracting Officer for any supporting utilities to be provided by the Government.

J4.3.7 Restricted Access ("Q" Area and Ranges)

The Contractor shall coordinate with and obtain written approval from Fort Hood for entry into the ammo storage facility located on West Fort Hood (known as the "Q" area). Access into the fenced area will require additional security clearance and full time military escort. Contractor shall obtain access to this area at Building 92065.

The Contractor shall coordinate with and obtain written approval from Fort Hood Range Control for any future construction in the areas managed by Range Control. Contractor shall

provide 30 day written notice to Range Control prior to performing any routine maintenance, repairs, construction, or other work on the utility system in the Ranges (all areas managed and controlled by Fort Hood Range control). Contractor shall be required to coordinate all work necessary and as directed by Range Control during emergency response situations.

J4.3.8 Crisis Situations

IAW Paragraph C.9.8, *Exercises and Crisis Situations Requiring Utility Support*, the Contractor shall provide support as directed by Fort Hood DPW or equivalent agency for exercises and crisis situations. Contractor shall submit Emergency Response Plans for approval by the Government For all Exercise and Crisis situations IAW C.9.8.

J4.4 Current Service Arrangement

Fort Hood's wastewater collection and treatment system consists of three separate systems (one for the Main Cantonment area and West Fort Hood, one for North Fort Hood and one for BLORA). The system that serves the Main Cantonment area and West Fort Hood does not include any treatment facilities. Wastewater is collected and discharged to the BCWCID No. 1 sanitary wastewater treatment system.

The system that serves North Fort Hood includes a treatment plant. Treated wastewater from this system is discharged into a drainage that flows into the Leon River under National Pollutant Discharge Elimination System (NPDES) permit TX0063606. To the extent allowable by law, Fort Hood will transfer this NPDES permit.

The BLORA system consists of a 60,000 gallon per day (gpd) activated sludge package plant. It discharges treated wastewater into a drainage that flows into Nolan Creek under NPDES permit TX0002313, Outfall 10. The Contractor shall obtain a separate NPDES permit for this discharge.

The total annual energy consumption by the Fort Hood wastewater system was estimated to be 4,270 MW-h in 2001. The FY 2002 electric utility rate at Fort Hood was \$0.07821/kwh.

J4.5 Secondary Metering

There are currently no secondary meters included with the utility system being privatized and no requirements for secondary metering of wastewater at Fort Hood facilities included in this contract. Any future wastewater secondary metering requested by the Government will be IAW Paragraph C.3, *Metering*.

J4.6 Monthly Submittals

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

1. Invoice (IAW Paragraph G.2, *Submission and Payment of Invoices* and Paragraph J2.3.1, *Non-Government Installed Utilities Infrastructure*). The Contractor's monthly invoice shall be presented in a format proposed by the Contractor and accepted by the Contracting

Officer. The Contractor's monthly invoice shall include segregated costs IAW with each CLIN. Costs shall be segregated into two categories: costs associated with Housing areas and costs associated with non-Housing areas. The Contractor shall provide sufficient supporting documentation with each monthly invoice to substantiate all costs included in the invoice for each CLIN as approved by the Contracting officer. The proposed system of accounts shall be made available in electronic format as directed by the Contracting Officer. Invoices shall be submitted by the 25th of each month for the previous month. Invoices shall be submitted to:

Name: DIRECTORATE OF PUBLIC WORKS
ATTN (Barry Barnett- Contracting Command)
III CORPS AND FORT HOOD
Address: 4612 ENGINEER DRIVE, ROOM 76
FORT HOOD TEXAS 76544-5028
Phone number: (254) 287-3054

2. Outage Report. The Contractor's monthly outage report (blockage and overflow information) 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: DIRECTORATE OF PUBLIC WORKS
ATTN (Bobby Lynn- DPW)
III CORPS AND FORT HOOD
Address: 77TH AND WAREHOUSE AVE., BLDG. 4219
FORT HOOD TEXAS 76544-5028
Phone number: (254) 287-3054

J4.7 Infiltration and Inflow (I&I) Projects

IAW Paragraph C.3.4, Energy and Water Efficiency and Conservation, the following projects have been implemented by the Government for managing and monitoring I&I.

- There are no infiltration and inflow projects associated with the utility system being privatized.

J4.8 Service Area

IAW Paragraph C.4, Service Area, the service area is defined as all areas within the Fort Hood boundaries and include the Main Cantonment Area, West Fort Hood, North Fort Hood, the Ranges, and BLORA. The North Fort Hood and BLORA areas are serviced by separate collection and treatment systems from the Main Cantonment and West Fort Hood areas.

J4.9 Off-Installation Sites

Approximately 2-miles of 30-inch sewer main extends off-installation and will be included in the privatization of the Fort Hood wastewater system. The Government shall grant the

Contractor an easement to maintain, repair, replace and operate system components associated with this off-installation infrastructure within the limits of the Governments current perpetual easement. The Government granted easement shall include the access within the easement the Government has with the Northern Santa Fe Railroad and the joint use easement the Government has with the Texas Department of Transportation.

J4.10 Specific Transition Requirements

IAW Paragraph C.13, Transition Plan, **Table 6** provides a list of service connections and disconnections required upon transfer.

TABLE 6
Service Connections and Disconnections
Wastewater Collection and Treatment System, Fort Hood, Texas

Location	Description
There are no service connections or disconnections required upon transfer of the Fort Hood Wastewater Collection and Treatment System	

J4.11 Government Recognized System Deficiencies

Table 7 provides a list of Government recognized deficiencies. The deficiencies listed may be physical deficiencies, functional deficiencies, or operational in nature. If the utility system is sold, the Government will not accomplish a remedy for the recognized deficiencies listed. The Offeror shall make a determination as to its actual need to accomplish and the timing of any and all such deficiency remedies.

Physical and functional deficiencies may require capital to be invested in the system. If any deficiency remedy requires a capital upgrade project, the capital upgrade project shall be proposed according to the following:

- Capital upgrade projects required to bring the system to standard shall be proposed under Schedule 3 – Initial Capital Upgrade(s)/Connection Charge(s).
- Capital upgrade projects required to replace system components shall be proposed in the first years of Schedule 2 – Renewals and Replacements – 50 Year Schedule, and the cost factored into Schedule 1 – Fixed Monthly Charge, for Renewals and Replacements as part of CLIN AA.
- Transition costs shall be proposed as a one-time cost and shall be treated similar to a capital project and included in Schedule 3 – Initial Capital Upgrade(s)/Connection Charge(s).
- Improvements proposed in the operational component of the work shall be included in Schedule 1 – Fixed Monthly Charge as part of CLIN AA.

TABLE 7
Wastewater System Deficiencies
Wastewater Collection and Treatment System, Fort Hood, Texas

System Component	Deficiency Description	Type of Project
Lift Station #s 13083, 1972, 26015, 44014, 6949, 22023, 32031, 30045, 11037, 88016, 90106, 721, 90110, 4115, 9534, 93040, 41012, 38020, 20122, 20141, 50012, 50007, 52387, 20151, 7087, 20148, 53905, 20131, 88018, 20143, 7036, 90049, 8001, 90070, 22019, 51400, 52380, and 48512	Required new electric meter	Capital Upgrade
Wastewater Treatment Systems at North Fort Hood and BLORA	Required new electric meter	Capital Upgrade
Wastewater Treatment Systems at BLORA	Required new wastewater flow meter	Capital Upgrade
Wastewater Collection Piping	Some portions of the collection system piping were installed in the 1940s. These components have exceeded their useful lives and should be replaced.	Renewals and Replacement
SCADA System	The Post-wide SCADA system is ineffective and out-of-date. Field instruments require replacement. Computer hardware/software upgrade is required.	Capital Upgrade
Lift Station 4115 and Force Main	This lift station and force main are 60 years old or more and should be replaced. The force main is approximately 0.5 mile in length and is constructed of cast iron soil pipe .	Renewals and Replacement
Lift Station 9534	This is a pneumatic ejector system and is over 30 years old. The equipment is located below ground in a confined space. The pump station should be replaced.	Renewals and Replacement
57104. North Fort Hood Wastewater Treatment Plant	Two aerators are inoperative. Aerator controls are inoperative. Insufficient depth in the lagoons caused by a build up of sludge. Determine lagoon lining requirements and upgrade lining as required.	Capital Upgrade Capital Upgrade O&M Capital Upgrade

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System Component	Deficiency Description	Type of Project
General	Perform an inflow and infiltration evaluation and conduct wet weather flow monitoring. Conduct A Capacity, Management, Operations, And Maintenance (CMOM) Study.	O&M