

AMENDMENT NO. ONE  
LUKE AFB LIFT STATION  
(CONSTRUCTION MANAGER AT RISK AGREEMENT, Contract No. C21-0337)

This Amendment No. One (“Amendment”) to the Construction Manager at Risk Agreement (“Agreement”) is made this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, (“Effective Date”), by and between the City of Glendale, an Arizona municipal corporation (“City”) and Felix Construction Company, an Arizona corporation (“Contractor”).

RECITALS

- A. City and Felix Construction Company (“Contractor”) previously entered into a Construction Manager at Risk Agreement, Contract No. C21-0337, dated April 27, 2021 (“Agreement”); and
- B. The City is seeking to expand the scope of services provided under the original Agreement; and
- C. The City is increasing the amount of compensation to be paid under this Agreement by \$249,084.65; and
- D. City and Contractor wish to modify and amend the Agreement subject to and strictly in accordance with the terms of this Amendment.

AGREEMENT

In consideration of the mutual promises set forth herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the City and Contractor hereby agree as follows:

- 1. **Recitals.** The recitals set forth above are not merely recitals but form an integral part of this Amendment.
- 2. **Term.** The term of the Agreement is extended for a one-year period from January 31, 2021 through December 31, 2022, unless otherwise terminated or canceled as provided by the Agreement. All other provisions of the Agreement except as set forth in this Amendment shall remain in their entirety.
- 3. **Scope of Work.** Dewater the Luke AFB wastewater treatment plant upon diversion of wastewater to the operational Luke Lift Station (LS-8) as specifically detailed in the attached exhibit.
- 4. **Compensation.** The compensation to be paid for the additional services is \$249,084.65 as specifically detailed in the attached exhibit.

5. **Insurance Certificate.** Current certificate will expire on (Date) and a new certificate applying to the extended term must be provided prior to this date to Materials Management and the Contract Administrator.
6. **Non-discrimination.** Contractor must not discriminate against any employee or applicant for employment on the basis of race, color, religion, sex, national origin, age, marital status, sexual orientation, gender identity or expression, genetic characteristics, familial status, U.S. military veteran status or any disability. Contractor will require any Sub-contractor to be bound to the same requirements as stated within this section. Contractor, and on behalf of any subcontractors, warrants compliance with this section.
7. **No Boycott of Israel.** To the extent A.R.S § 35-393 through § 35-393.03 are applicable, the parties hereby certify that they are not currently engaged in, and agree for the duration of the Agreement to not engage in, a boycott of goods or services from Israel, as that term is defined in A.R.S § 35-393.
8. **Attestation of PCI Compliance.** When applicable, the Contractor will provide the City annually with a Payment Card Industry Data Security Standard (PCI DSS) attestation of compliance certificate signed by an officer of Contractor with oversight responsibility.
9. **Ratification of Agreement.** City and Contractor hereby agree that except as expressly provided herein, the provisions of the Agreement shall be, and remain in full force and effect and that if any provision of this Amendment conflicts with the Agreement, then the provisions of this Amendment shall prevail.

[Signatures on the following page.]

CITY OF GLENDALE, an Arizona  
municipal corporation

\_\_\_\_\_  
Kevin R. Phelps, City Manager

ATTEST:

\_\_\_\_\_  
Julie K. Bower, City Clerk (SEAL)

APPROVED AS TO FORM:

\_\_\_\_\_  
Michael D. Bailey, City Attorney

Felix Construction Company, Inc.  
An Arizona corporation



By: David Giannetto

Its: Principal

# **LUKE WASTEWATER TREATMENT FACILITY LIQUID/SOLIDS REMOVAL AND CLEAN-UP CONSTRUCTION ACITIVITIES SCOPE OF WORK**

**March 2, 2022**

## **INTRODUCTION**

In the spring of 2022, operational completion of the Glendale Lift Station 8 (GLS 8) will allow for conveyance of discharge from the Luke Air Force Base (LAFB) wastewater system, currently serviced by the LAFB Wastewater Treatment Plant (WWTP), via force main to the City of Glendale (COG) 99<sup>th</sup> Avenue WWTP. Once disconnected the WWTP will be permanently decommissioned and eventually demolished. LAFB has contracted Wood Environment & Infrastructure Solutions (Wood) to lead the closure and demolition of the WWTP in accordance with the applicable regulatory sections of the Arizona Administrative Code (A.A.C.) and in compliance with the Arizona Department of Environmental Quality's (ADEQ) Closure Policy. The first stages of the Wood closure plan are as follows<sup>1</sup>:

1. Empty equipment, basins, and piping of wastewater and dispose of wastewater offsite.
2. Flush equipment, basins, and piping.
3. Dispose of flush water.

LAFB asked Stantec to produce a detailed scope of construction activities to guide the contractor through these first stages of closure. This plan is a guide for the contractor, and the contractor will be required to submit their own plan of means and methods to dewater the facility, and the contractor's plan will be reviewed by Luke AFB and its engineering representative before work commences. This scope of work is intended to be supplemental to, not replace, the closure plan to be submitted to ADEQ by Wood.

## **UNDERSTANDING AND APPROACH**

### **Existing System Components**

The existing WWTP components that will be included as part of the dewatering, solids removal, and disinfection process are as follows:

- All pumps and pump stations with associated wet wells/basins and piping.
- All manholes, boxes, and collection/transfer/recirculation piping.
- Various in treatment components such as pumps, piping, and equipment.
- Influent headwater components: Grit Chamber, Grit Washer, Influent Metering Flume, various screens, aeration components, and associated channels.
- Treatment components: Anoxic basins No. 1 through 3, oxidation ditch, secondary clarifiers nos. 1 through 8, tertiary sand filters no. 1 & 2, UV Disinfection Unit and UV Disinfection Channel.

- Laboratory Building sewer service piping.

LAFB will coordinate closely with COG Water Services personnel during testing and commissioning of GLS 8 in the spring of 2022. The WWTP is to remain in service and connected to the existing sewer system until such time that COG has determined the lift station is fully operational and the pumps can convey the influent at full capacity uninterrupted. Only then will the WWTP be fully disconnected from the LAFB sewage collection system and the existing plant components dewatered.

### **Dewatering Disposal & Constraints**

The contractor shall remove liquids and solid waste from the WWTP system components and disposed of in one of three ways:

- Waste with a solids content of less than 2% can be transferred by pump and above ground flexible pipe to the GLS 8 Manhole-202 for disposal via the lift station.
  - The volumetric rate of liquids disposal must remain below the lift station's peak volumetric rate of 1,400 gallons per minute (GPM) and is constrained by two factors:
    - The pipe diameter and slope between Manhole-202 and the lift station wet well. The maximum flow through the connecting 8-inch PVC pipe at a slope of 0.06% is ~410 GPM.
    - The time of day based WWTP influent flow rate measurements collected by Stantec over 17 days in August of 2019. Cluster plots of the daily peak and minimum flows vs time of day indicate peak flows generally occurring between 7:00 AM and midnight with minimum flows generally occurring between midnight and 7 AM.
  - The recommended disposal flow volumetric flow rate for liquids disposal with a calculated 1.5 safety factor in Manhole-202 is as follows:
    - 12 AM to 12 PM – 400 GPM
    - 12 PM to 7 PM – No discharge without an on-site observer monitoring the wet well high-water alarm to alert contractor to discontinue pumping. With observation the volumetric flow rate should be less than 400 GPM.
    - 7 PM to 12 AM – 400 GPM
- Liquids with a solids content of 2% or greater are to be diluted with on-site water and/or removed by contractor with septic vacuum truck, or equal means, and disposed of at a treatment facility licensed to accept that kind of waste. Contractor may dispose of some waste in basins to dry for mechanical removal at a later date if plant conditions, and regulations, allow.
- The dry solids remaining in the sludge drying beds shall be removed to a landfill by Luke personnel following Luke WWTP standard operating procedures (SOP).

### **Initial Closure Activities**

When the lift station is declared fully operational and intercepting the entirety of the influent from the LAFB sewer system the lift station contractor, Felix Construction, shall perform the following disconnection activities under the existing GLS 8 contract (for manhole references see **Exhibit A - GLS 8 Site Plan & Exhibit B - LAFB WWTP Site Plan**):

- Plug and permanently cap and fill the 12-inch vitrified clay pipe (VCP) at the east discharge invert in GLS 8 Manhole-200.

- Plug and permanently cap and fill the 12-inch VCP at the southwest invert of Luke WWTP Manhole No. 1.
- Cut, demolish, and remove the 16-feet of 21-inch VCP sewer that crosses the new 10-inch HDPE force main, between the driveway curb and the rip rap stormwater scupper. The remaining 21-inch VCP sewer shall be capped and abandoned in place according to procedures set forth but the relevant regulatory body.
- Cut and cap the 8-inch VCP sewer at Luke WWTP Manhole No. 3 per GLS 8 RFI-006. The remaining 8-inch VCP between the cap and Luke WWTP Manhole No. 3 shall be abandoned in place according to procedures set forth but the relevant regulatory body.

## RECOMMENDED DEWATERING TASKS

Upon disconnection from the LAFB collection system, allow the influent pump system to run to its lowest water level so that remaining influent may proceed through the digester basins, secondary, and tertiary treatment processes and discharged to the effluent system and sludge drying beds (or sludge holding tank) for disposal under Luke WWTP SOP for these tasks. After all possible processing has been completed, all processed effluent has been discharged to the effluent storage pond and all processed sludge has been deposited in the drying beds, the contractor may proceed with dewatering and flushing.

### Hydraulic Facility Drainage

For ease of drainage, the procedures for dewatering have been separated into four (4) “profiles” which can be isolated, flushed, and dewatered. These profiles are as follows (**see Exhibit C – Luke AFB WWTP Dewater Flow Chart**):

PROFILE	DESCRIPTION OF COMPONENTS
1 – Influent Profile	MH-1, MH-2, MH-3, Grit Chamber, MH-11, Fine Screen, Influent Metering Flume, MH-8, MH-7, Raw Sewage Pump Station, Recirculation Pump Station, Filtrate Pump Station, and associated connecting pipes.
2 – Treatment Profile	Anoxic Basins, Oxidation Ditch, Box-1, Box-4, Box-7, Box-8, Clarifiers 7 & 8, Box 12, MH-4, MH-10, and associated connecting pipes.
3 – Filter Profile	Filter Pump Station, Tertiary Sand Filters, MH-6A, Mixing Box, U.V. Disinfection Unit, and associated connecting pipes

4 – Sludge Profile	Sludge Holding Tank, Sludge Pump Station, MH-6B, Sludge Drying Beds
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**Dewatering and Flushing Procedures**

The following pumping equipment should be furnished on site during operations:

- A portable variable speed trash pump with suction hose capable of discharging up to 400 gpm of sludge with 2% suspended solids up to 500 feet horizontally.
- Up to 1,000-feet of HDPE, or equal, flexible piping to discharge sludge and flush water to GLS 8 MH-202.
- A portable submersible pump capable of discharging up to 400 gpm for bottom drainage and nuisance drainage.

Contractor will establish a fresh water supply, potable or well, for flushing. Flush accumulated sludge and other dried contaminants from equipment, structure, and pipe walls and remove flush water to GLS 8 MH-202 for disposal. Contractor may elect to use one of the following options available for fresh water on site:

- Metered connection at the fire hydrant located on the NW corner of El Mirage Road and Glendale Avenue.
- Onsite groundwater well with max discharge rate of 150 gpm.

The estimated volume of wastewater and flush water to be removed by external pumping to Sludge Drying Beds and the GLS 8 MH-201 is 485,300 gallons. The estimated time to flush all components clean at an estimated 200 gpm is 23.6 hours. The estimated time to remove all liquids by external pumping is 20 to 40 hours assuming flow rates between 200 and 400 gpm. The estimated total volume of dry solids, including the Sand Filter media, to be removed by pump or mechanical means is 15,640 cubic feet (See **Table 1 – Volume Calculations**).

This guide recommends that the contractor dewater and flush the LAFB WWTP in the following order (see **Exhibit C – Luke AFB WWTP Dewater Flow Chart**):

- 1. Isolation of Profile 3 - Filter Profile to prevent accidental environmental discharge.**
  - a. Coordinate with WWTP operators to drain Filter Pump Station to lowest point and then power off Filter Pump Station.
  - b. Plug, or otherwise prevent discharge, from the UV Disinfection to Box 13.
- 2. Isolation of Profile 4 – Sludge Profile and Flush Profile 1 – Influent Profile**

- a. Coordinate with WWTP operators to close valve (V-16) on 4-inch pipe from Clarifier 7 & 8 to the Sludge Pump Pit.
- b. Coordinate with WWTP operators shall isolate the Sludge Holding Tank from all discharge points but the sludge drying beds by closing all holding tank valves except valve (V-12) to discharge pipe to Sludge Drying Beds.
- c. Coordinate with WWTP operators to allow the Filtrate Pump Station (P-1 & P-2) to pump to low water point and then power down Filtrate Pump Station.
  - i. Plug, or otherwise prevent flow from entering the Filtrate Pump Station from MH-6A.
  - ii. It shall be the WWTP operator responsibility to monitor MH-6A during continued sludge drying operations and remove filtrate as it accumulates.
- d. Coordinate with WWTP operators to allow the Raw Sewage Pump Station (P-3 through P-6) to pump to low water point and then power down Raw Sewage Pump Station.
- e. Flush remaining solids and liquids from all components associated with Influent Profile including boxes, manholes, pump station wetwells, sumps and hoppers with fresh water with pressurized hose and pump out to GLS 8 MH-202.
- f. Pump any remaining standing water in Treatment Profile to GLS 8 MH-202
  - i. This may be performed with submersible pump while Anoxic Basin draining is in process if during off peak hours.

### **3. Drain and Flush Profile 2 – Treatment Profile**

- a. Coordinate with the WWTP operator to isolate Anoxic Basin/Oxidation Ditch recirculation system by closing V-15 and power down the Raw Sewage Pump Station.
- b. Drain the Anoxic Basin and Oxidation Ditch.
  - i. Plug inlet pipe at the weir from Anoxic Basin to Oxidation Ditch.
  - ii. Allow the paddles in the Anoxic Basin to continue mixing.
  - iii. Pump out Anoxic Basin to GLS 8 MH-202.
  - iv. When the Anoxic Basin water level is approaching the paddle elevation the contractor can begin pumping the Oxidation Ditch contents into the Anoxic Basin.

1. Contractor can pump out Oxidation Ditch at any rate until the Anoxic Basin reaches a depth where this is 1.5 feet of freeboard remaining. At that depth the pumping rate shall be throttled to 400 gpm or the rate at which the Anoxic Basin is being pumped out.
  2. Contractor can investigate using the Recirculation Pump to empty the oxidation ditch or use the submersible trash/sewage pump. Coordinate with WWTP operator.
    - a. Recirculation Pump: Discharge invert at or near bottom of ditch on flange flight and submersible rail adaptor. Amaline, 69 Hz, 8.7 HP, 1774 RPM 40/3/60, 6730 gpm.
  3. Contractor may wish to keep oxidation ditch from settling with using contractor means and methods.
- c. Flush the Anoxic Basin and Oxidation Ditch
- i. Flush remaining solids from the Oxidation Ditch and Anoxic Basin with fresh water with pressurized hose and pump out to the GLS 8 MH-202.
- d. Drain and Flush Clarifier Components
- i. Pump liquids from Secondary Clarifiers 7 & 8 to GLS 8 MH-202.
  - ii. Flush remaining solids from Secondary Clarifiers 7 & 8 with fresh water with pressurized hose and pump out to GLS 8 MH-202.
  - iii. Flush remaining solids from Secondary Clarifiers 1 through 6 with fresh water with pressurized hose and pump out to GLS 8 MH-202.
  - iv. Flush remaining solids from all components associated with Secondary Clarifiers 1 through 8 including boxes, manholes, pump station wetwells, sumps and hoppers with fresh water with pressurized hose and pump out to GLS 8 MH-202.
  - v. Pump any remaining standing water in Treatment Profile to GLS 8 MH-202

#### **4. Drain and Flush Profile 3 – Filter Profile**

- a. Pump any liquids remaining in the Tertiary Sand Filters to the GLS 8 MH-202.
- b. Flush any remaining solids and flush the sand media in the filters with fresh water with pressurized hose and pump out to GLS 8 MH-202.

- i. Coordinate with WWTP operator to backwash filter media with fresh water is possible or necessary.
- c. Flush remaining solids from all components associated with Filter Profile including boxes, manholes, pump station wetwells, sumps and hoppers with fresh water with pressurized hose and pump out to GLS 8 MH-202.

#### **5. Final Dewater Tasks**

- a. Luke WWTP operators are to remove the contents of the Sludge Drying Beds when they have reached the allowable landfill moisture content according to their standard SOP.
- b. Luke WWTP operators shall flush the Sludge Beds, MH-5, and MH-6A and all connecting pipes after dried sludge has been removed.

### **DEMOBILIZATION**

After flushing, the contractor is to demobilize according to the procedures set forth by Wood for post-dewater plant closure activities. All non-WWTP pumps and pipes are to be removed. The GLS 8 MH-201 is to be returned to pre-dewater conditions.

### **ASSUMPTIONS**

- The Sludge Drying process will be maintained and operated by the Luke WWTP, not the contractor, during the entirety of dewatering operations.
- All boxes, manholes, and other components designed to drain by gravity with invert at structure floor are assumed to not need drain pumping. Remaining influent and flush water will drain to lowest point in Profiles 1 through 4.
- Flush water is assumed to be from a 2-inch hose at a flow rate of 200 GPM. Flush times are 10 mins for small structures, 30 mins for mid structures, and 60 mins for large structures. Piping flush volume is determined by Length of Pipe \* Pipe Area. Pipes are assumed to need enough flush to remove sludge residue not full disinfection for removal. Pipes to be disconnected from components for full disinfection per Wood closure plan.
- Flushing the Anoxic Basin and Oxidation Ditch for sludge removal is assumed for the gallons of flush water needed to create a 2% suspended solids solution for pumping calculated from dry settled solids left after liquid removal.
- Structures with weir boxes or sumps below discharge pipe invert will be assumed to need the volume from top of weir wall to bottom of tank or bottom of invert elevation above bottom of sump elevation pumped out for removal.

- Sand filter media is assumed to will remain in place in the filter bed until Wood commences with plant demolition in the future. No filter media is to be removed by the contractor.
- Sludge volumes from still basins will be calculated as dry solids in pounds in conservative solution of 2% suspended solids. Grit Chamber sump is assumed to have so little sludge (.01% suspended solids) that it can be hose flushed after settling at a sufficient solution density for pumping to lift station.
- Water used for flushing will be obtained from onsite well or through Luke AFB utility services at no cost to contractor.

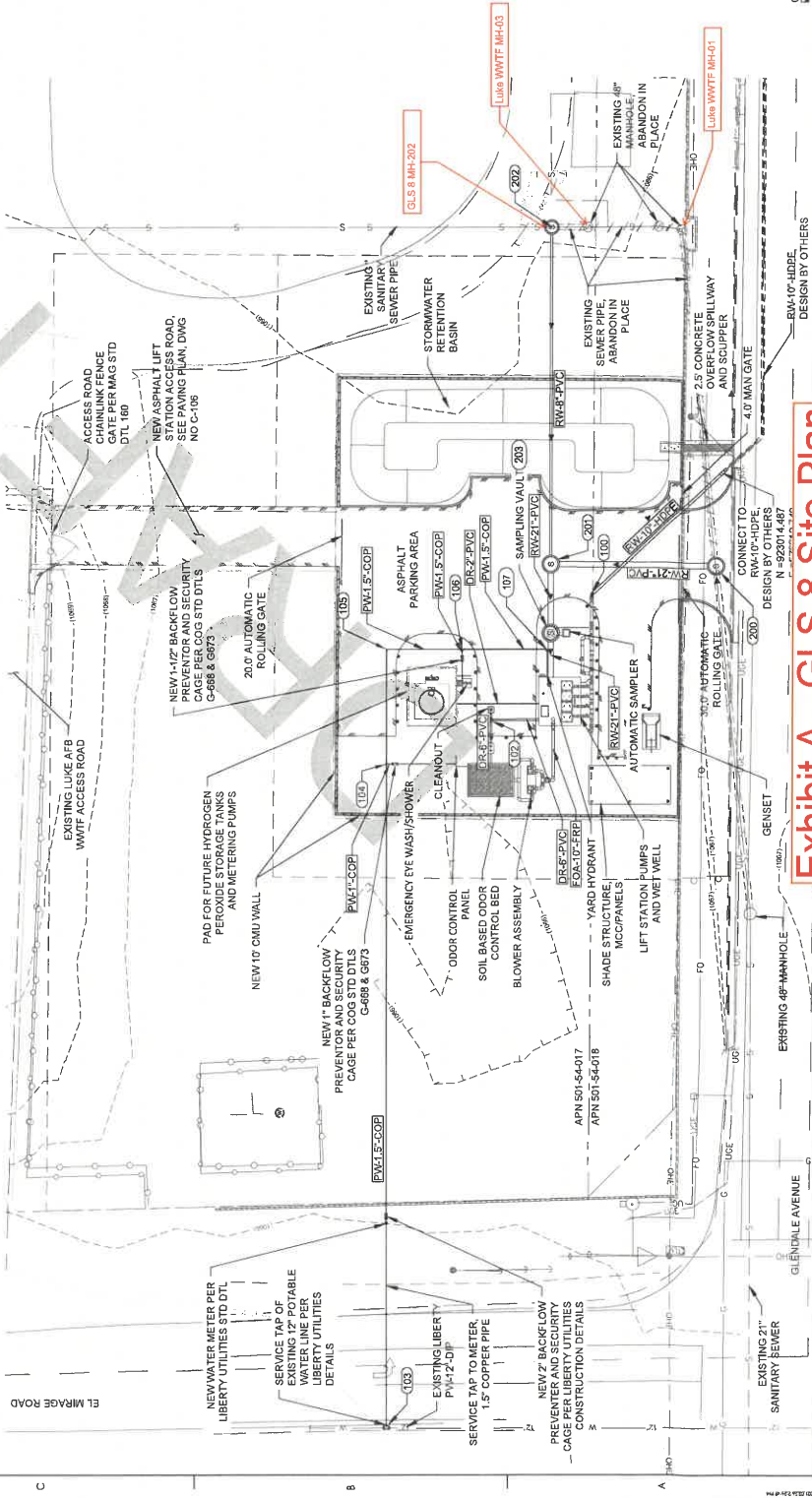
#### **FOOTNOTES**

1. ***Luke Air Force Base Wastewater Treatment Plant Clean Closure Application, Closure Strategy Plan.*** Wood Environment and Infrastructure Solutions. Report. December 2021.

- NOTES:
- SEE MECHANICAL PLANS FOR PIPE CONNECTION ELEVATIONS AT THE FORCE MAIN, METWELL, FOUL AIR BLOWERS, ODOOR CONTROL SYSTEM, AND CHEMICAL DOSING PAD.
  - CONTRACTOR TO FIELD VERIFY EXISTING SEWER PIPE INVERTS AT NEW MH-202 & NEW MH-203 AND POTABLE WATER SERVICE CONNECTION.
  - WATER METER INSTALLATION TO BE APPROVED AND SUPERVISED BY LIBERTY UTILITIES.

YARD PIPING CONTROL POINTS		DESCRIPTION	
TAG #	CL ELEVATION	DESCRIPTION	CL ELEVATION
100	576171.550	FW-10" HDPE-45 BEND	1062.93
102	578129.200	DR-4" PVC-TEE	1060.33
103	577980.005	PW-12" x 1.5" DITAP	1058.74
104	578114.381	PW-1.5" x 1" COP-TEE	1063.00
105	576153.019	PW-1.5" COP-90 BEND	1063.00
106	576153.019	PW-1.5" x 1.25" COP-TEE	1063.00
107	576153.000	PW-1.5" x 3/4" COP-90 BEND	1063.00
200	576161.372	RIM = 1056.75, INV IN (SW) = 1051.40, INV OUT (N) = 1056.45	NEW 60" MANHOLE
201	576161.800	RIM = 1057.37, INV IN (S) = 1058.03, INV IN (E) = 1057.03, INV OUT (W) = 1056.85	NEW 60" MANHOLE
202	576895.566	RIM = 1056.74, INV IN (N) = 1060.35, INV IN (W) = 1057.70	NEW 60" MANHOLE
203	576158.50	RIM = 1057.45, INV IN (E) = 1056.73, INV OUT (W) = 1056.65	NEW 60" ARMOROCK MANHOLES/SAMPLING VAULT WITH BILCO HATCH AND NETTING

\*ALL ELEVAT CL UNLESS OTHERWISE NOTED



**Exhibit A - GLS 8 Site Plan**



NO.	REVISION	DATE	BY	CHKD.
1	ISSUED FOR PERMIT	08/11/2020	WY/AM/DO	
2	FOR CONSTRUCTION	08/11/2020	WY/AM/DO	
3	FOR CONSTRUCTION	08/11/2020	WY/AM/DO	
4	FOR CONSTRUCTION	08/11/2020	WY/AM/DO	
5	FOR CONSTRUCTION	08/11/2020	WY/AM/DO	
6	FOR CONSTRUCTION	08/11/2020	WY/AM/DO	
7	FOR CONSTRUCTION	08/11/2020	WY/AM/DO	
8	FOR CONSTRUCTION	08/11/2020	WY/AM/DO	
9	FOR CONSTRUCTION	08/11/2020	WY/AM/DO	
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20	FOR CONSTRUCTION	08/11/2020	WY/AM/DO	



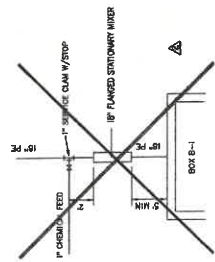
Client/Project Logo

City of Glendale  
Glendale Lift Station 8  
Glendale, Arizona  
CIVIL  
YARD PIPING PLAN

Project No. 181301075  
Scale 1" = 20'  
Revision Sheet 0 of 11  
Drawing No. C-107

# Exhibit B - Luke WWTF Site Plan

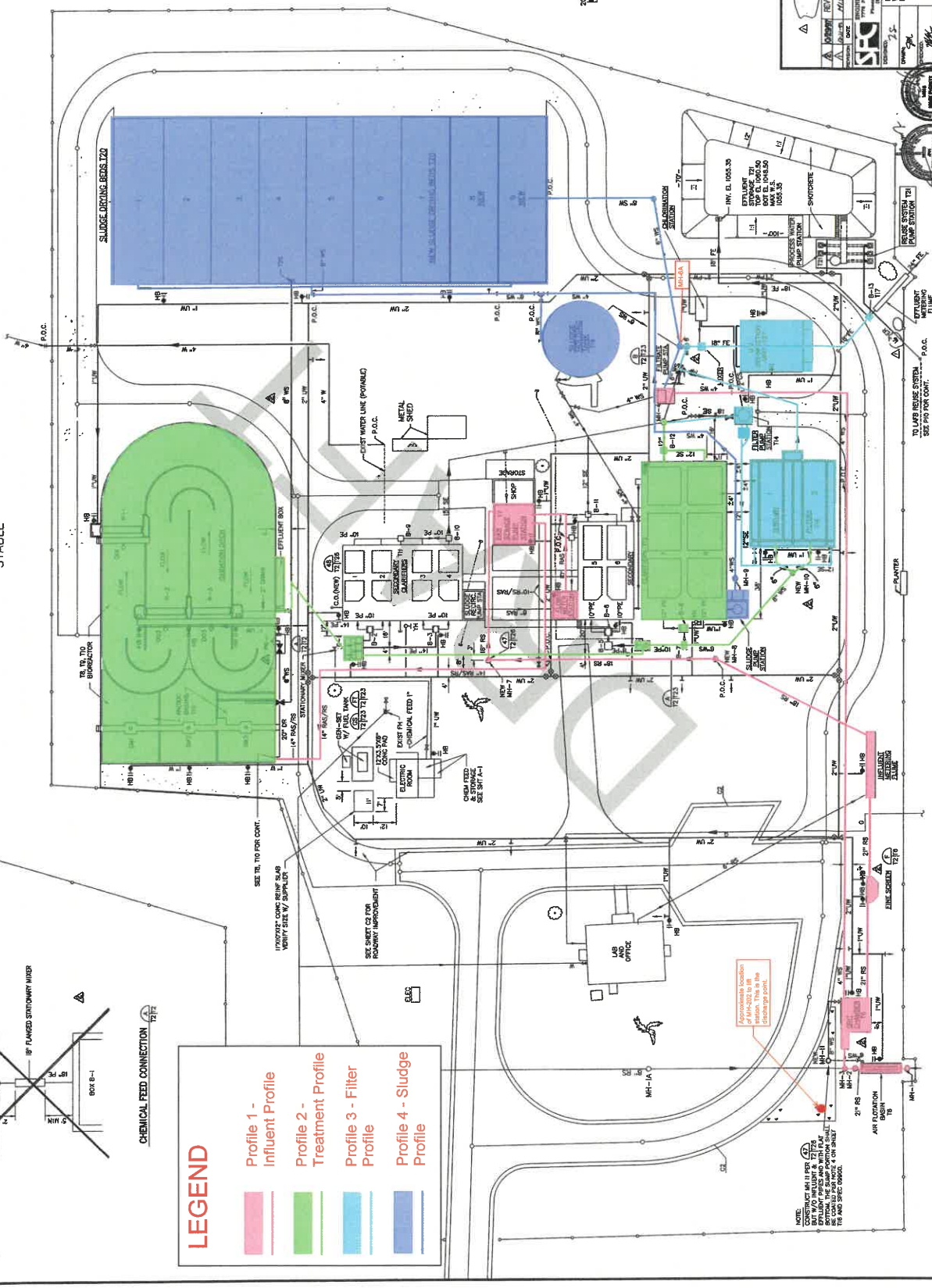
STABLE



CHEMICAL FEED CONNECTION

**LEGEND**

- Profile 1 - Influent Profile
- Profile 2 - Treatment Profile
- Profile 3 - Filter Profile
- Profile 4 - Sludge Profile



NOTE:  
 SEE DETAIL FOR HOSE SCHEDULE (H.E.-3)  
 SEE SHEET 10 FOR NEW & MODIFIED FOUR SIDES

EXISTING PIPING & LIMITS  
 NEW PIPING & LIMITS  
 SEE SET 10 FOR IRRIGATION PIPING CONTINUATION

**AS-BUILT**

**NEW WWTF SITE PIPING**

LUKE WWTF  
 WASTE WATER TREATMENT FACILITY  
 PROJECT NO. 10022

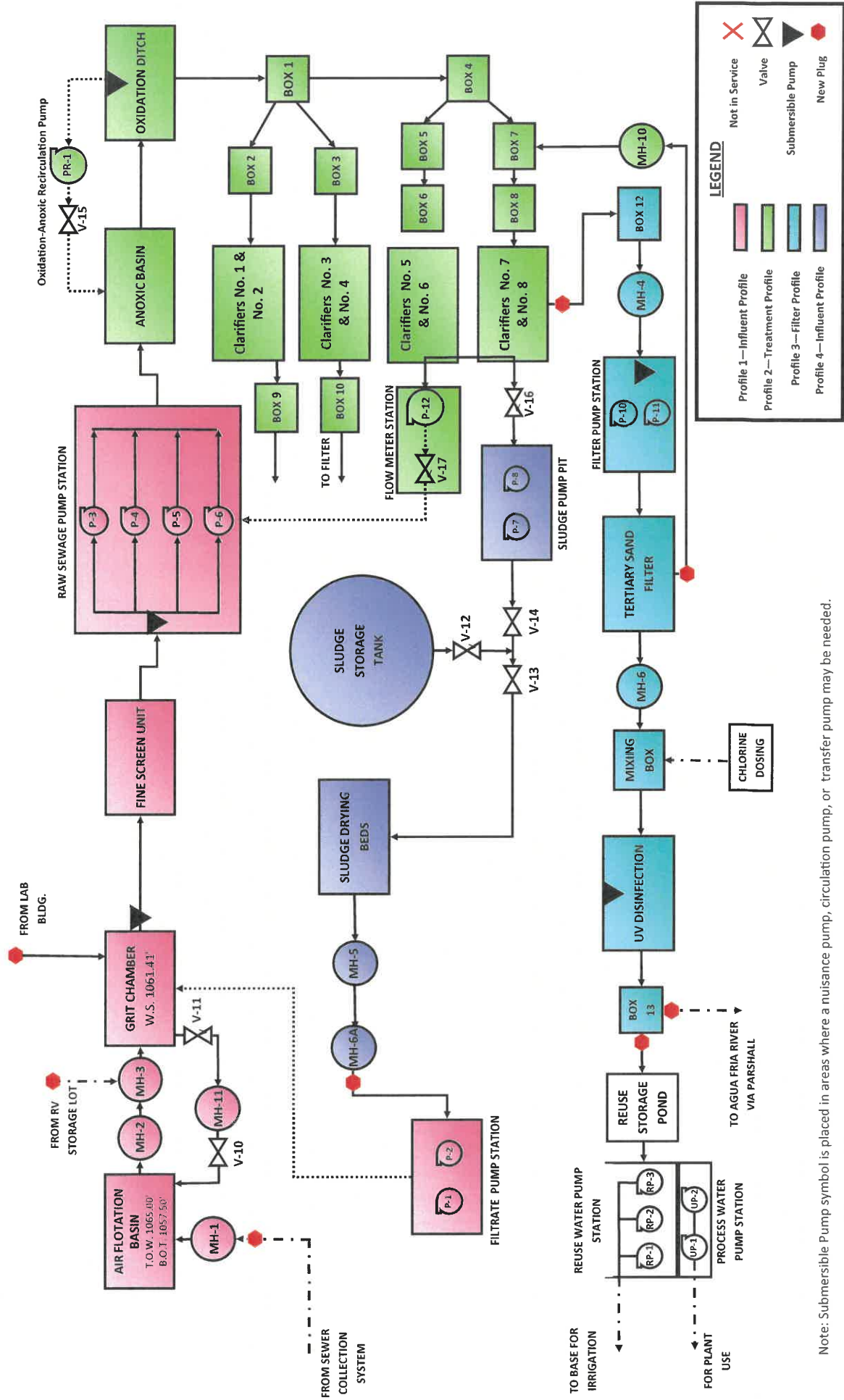
DATE: 11-15-05  
 SHEET NO. 17  
 PROJECT NO. 210-25-354

NOTE:  
 CONSTRUCTION PER 0725  
 EXISTING PIPING AND WITH 1/2"  
 WE COULD NOT MOVE 4' OR MORE  
 TO THE SPEC BENCH.

APPROXIMATE LOCATION  
 OF M-2020 TO IIR  
 SECTION. THIS IS THE  
 PROPOSED PIPELINE.



EXHIBIT C—LUKE AFB WWTP DEWATER FLOW CHART



Note: Submersible Pump symbol is placed in areas where a nuisance pump, circulation pump, or transfer pump may be needed.

Table 1 - Volume Calculations

Liquids Removal Volumes		Volume Calculations		Solids Removal Volumes			
<p><b>Grit Chamber [mid]</b></p> <p>Sump depth = 5.7 ft                      Sectional Area = 57.0 sq ft                      Length = 12.0 ft                      Total = 684.0 cu ft                      1,032.7 gal</p>		<p><b>Flush Water Volumes</b></p> <p>Rate = 300.0 gpm                      Component Flush Time [min] Flush Volume [g]                      MH-1 10 2,000                      Air Flotation 10 2,000                      MH-2 10 2,000                      MH-3 10 2,000                      MH-11 10 2,000                      Grit Chamber 30 6,000                      Fine Screen 30 6,000                      Influent Flume 30 6,000                      MH-8 10 2,000                      MH-7 10 2,000                      Raw Sewage PS 10 2,000                      Anoxic 60 12,000                      Oxidation 60 12,000                      Box-1 10 2,000                      Box-4 10 2,000                      Box-7 10 2,000                      Box-8 10 2,000                      MH-10 10 2,000                      Clarifier 60 12,000                      Box-12 10 2,000                      MH-4 10 2,000                      Filter PS 10 2,000                      Sand Filters 240 48,000                      MH-6 10 2,000                      UV Disinfection 10 2,000                      Sludge PIT PS 10 2,000                      Sludge Drying (S) 180 36,000                      Sludge Tank 240 48,000                      MH-5 10 2,000                      MH-6A 10 2,000                      Filtrate PS 10 2,000                      4-in Pipes 1 198                      6-in Pipes 2 337                      8-in Pipes 2 422                      10-in Pipes 0.1 26                      12-in Pipes 2 474                      14-in Pipes 5 1,057                      18-in Pipes 13 2,658                      24-in Pipes 6 1,104                      Sub Total 1,181.4 236,276                      Add 20% Contingency 236.3 47,255                      Total 1,417.7 283,531</p>		<p><b>Assumed Suspended Solids =</b>                      Assumed Solids Density = 2%                      45.01 lb/cu ft</p>		<p><b>Anoxic Basin</b></p> <p>Volume = 33,577.7 gal                      Total Dry Solids = 5,600.8 lbs                      Volume of Solids = 124.4 cu ft</p> <p><b>Oxidation Ditch</b></p> <p>Volume = 91,253.6 gal                      Total Dry Solids = 15,221.1 lbs                      Volume of Solids = 338.2 cu ft</p> <p><b>Clarifier 7 &amp; 8</b></p> <p>Volume = 23,551.7 gal                      Total Dry Solids = 3,928.4 lbs                      Volume of Solids = 87.3 cu ft</p> <p><b>Sand Filter Media Removal</b></p> <p>Length = 41.0 ft                      Width = 12.6 ft                      Depth = 3.3 ft                      Dry Volume = 1,676.7 cu ft                      Total 2 Filters = 15,090.2 cu ft</p>	
<p><b>Sludge Pump Pit [small]</b></p> <p>Pump shutoff depth = 2.0 ft                      Sectional Area = 10.0 sq ft                      Length = 5.0 ft                      Total = 74.0 gal</p>		<p><b>Sludge Pump Station [small]</b></p> <p>Pump shutoff depth = 2.5 ft                      Sectional Area = 23.3 sq ft                      Length = 9.3 ft                      Total = 322.4 gal</p>		<p><b>Anoxic Basin</b></p> <p>Length = 87.0 ft                      Width = 24.3 ft                      Depth = 1.0 ft                      Dry Volume = 2,114.3 cu ft                      Total 9 Beds = 19,026.9 cu ft</p>			
<p><b>Filter Pump Station [small]</b></p> <p>Pump shutoff depth = 2.5 ft                      Sectional Area = 23.3 sq ft                      Length = 9.3 ft                      Total = 322.4 gal</p>		<p><b>Tertiary Sand Filter [mid]</b></p> <p>Weir depth = 3.3 ft                      Sectional Area = 112.1 sq ft                      Length = 40.0 ft                      Total = 4,485.0 cu ft                      6,640.0 gal</p>		<p><b>Sludge Drying Sludge Applied</b></p> <p>Length = 87.0 ft                      Width = 24.3 ft                      Depth = 1.0 ft                      Sludge Applied = 15,813.5 gal                      Total 9 Beds = 142,321.4 gal</p>			
<p><b>Influent PS Weir Well [small]</b></p> <p>Pump shutoff depth = 1.84 ft                      Sectional Area = 2.5 sq ft                      Length = 20.0 ft                      Total = 49.1 cu ft                      72.7 gal</p>		<p><b>Secondary Clarifier 7 &amp; 8 [large]</b></p> <p>Weir depth = 9.0 ft                      Sectional Area = 252.0 sq ft                      Length = 90.0 ft                      Total = 22,680.0 cu ft                      33,577.7 gal</p>		<p><b>Total Solids to be Removed After Shut Down =</b> 15,640.0 cu ft                      Dry Sludge to be Removed After Shut Down = 549.9 cu ft                      *Does not include what remains in drying beds from pre-shut down volumes</p>			
<p><b>Waste Pump Station [small]</b></p> <p>Pump shutoff depth = 2.5 ft                      Sectional Area = 23.3 sq ft                      Length = 9.3 ft                      Total = 322.4 gal</p>		<p><b>Filtrate Pump Station [small]</b></p> <p>Pump shutoff depth = 2.5 ft                      Sectional Area = 23.3 sq ft                      Length = 9.3 ft                      Total = 322.4 gal</p>		<p><b>Total Solids to be Removed After Shut Down =</b> 15,640.0 cu ft                      Dry Sludge to be Removed After Shut Down = 549.9 cu ft                      *Does not include what remains in drying beds from pre-shut down volumes</p>			
<p><b>Total Waste Volume (cu ft)</b></p> <p>Sub-total = 113,572.3 cu ft                      20% Contingency Addon = 22,714.5 cu ft                      Total = 136,286.8 cu ft</p>		<p><b>Total Waste Volume (cu ft)</b></p> <p>Sub-total = 113,572.3 cu ft                      20% Contingency Addon = 22,714.5 cu ft                      Total = 136,286.8 cu ft</p>		<p><b>Total Solids to be Removed After Shut Down =</b> 15,640.0 cu ft                      Dry Sludge to be Removed After Shut Down = 549.9 cu ft                      *Does not include what remains in drying beds from pre-shut down volumes</p>			
<p><b>Total Liquid Disposal =</b> 485,304 gal</p> <p><b>Total Flush Time =</b> 23.6 hrs</p> <p><b>Total Removal Time =</b> 70.2 hrs</p> <p><b>Total Removal Time =</b> 40.4 hrs</p>		<p><b>Total Liquid Disposal =</b> 485,304 gal</p> <p><b>Total Flush Time =</b> 23.6 hrs</p> <p><b>Total Removal Time =</b> 70.2 hrs</p> <p><b>Total Removal Time =</b> 40.4 hrs</p>		<p><b>Total Solids to be Removed After Shut Down =</b> 15,640.0 cu ft                      Dry Sludge to be Removed After Shut Down = 549.9 cu ft                      *Does not include what remains in drying beds from pre-shut down volumes</p>			

\* @ max 400 gpm  
 \* @ half max 400 gpm (200 gpm)



# Change Order Cost Proposal



CONTRACTOR NAME: **Felix Construction Company**

Contract Type:	<b>GMP</b>	Owner Contract No.:	
CO No.:	<b>TBD</b>	Felix Job No.:	<b>1971</b>
Owner Project Mgr.:	<b>David Beard</b>	Prepared By:	<b>Kory Burden</b>
Fee Type:	<b>Fixed Fee Based On Agreement</b>	Date:	<b>3/21/2022</b>
Location:	<b>Luke WWTP</b>	Revision:	<b>Rev 0</b>
Job Title:	<b>WWTP Draining and Flushing</b>		

Description of Work to be Performed (supporting information attached): **See attached clarifications for detailed information regarding scope of work.**

## SECTION A: LABOR (inclusive of burden)

Position	Unit	Quantity	Labor Cost	
			Unit Price	Total
Estimator	Hours	-	\$ 80.00	\$ -
Project Manager	Hours	108.25	\$ 90.00	\$ 9,742.50
Project Engineer	Hours	216.50	\$ 65.00	\$ 14,072.50
Admin	Hours	-	\$ 45.00	\$ -
Project Superintendent	Hours	216.50	\$ 80.00	\$ 17,320.00
Foreman	Hours	226.33	\$ 60.00	\$ 13,580.00
Journeyman	Hours	293.00	\$ 50.00	\$ 14,650.00
Apprentice / Laborer	Hours	406.08	\$ 40.00	\$ 16,243.33
Elect Project Manager	Hours	-	\$ 90.00	\$ -
Elect Project Engineer	Hours	-	\$ 65.00	\$ -
Elect Superintendent	Hours	-	\$ 80.00	\$ -
Elect Technician - Foreman	Hours	-	\$ 60.00	\$ -
Elect Technician - Journeyman	Hours	-	\$ 50.00	\$ -
Elect Technician - Apprentice / Laborer	Hours	-	\$ 40.00	\$ -
Elect Admin	Hours	-	\$ 45.00	\$ -
<i>*Any emergency or T&amp;M work that requires overtime will be billed at 1.5 times the listed Unit Prices.</i>				<b>\$ 85,608.33</b>

## SECTION B: EQUIPMENT

Item	Unit	Quantity	Equipment Cost	
			Unit Price	Total
Backhoe	Hours	-	\$ 51.36	\$ -
Excavator	Hours	-	\$ 145.00	\$ -
Loader	Hours	-	\$ 65.60	\$ -
Boom Truck	Hours	80.00	\$ 60.00	\$ 4,800.00
Water Truck	Hours	-	\$ 61.93	\$ -
Water Wagon	Hours	-	\$ 15.00	\$ -
Air Compressor	Hours	-	\$ 17.00	\$ -
Compactor - Hand	Hours	-	\$ 9.00	\$ -
Roller	Hours	-	\$ 45.00	\$ -
ext. Reach Forklift	Hours	-	\$ 55.00	\$ -
Crane	Hours	-	\$ 185.00	\$ -
Pickup Truck - Light Duty	Hours	324.75	\$ 19.00	\$ 6,170.25
Pickup Truck - 1 Ton	Hours	442.83	\$ 25.43	\$ 11,261.25
Small Tools & Supplies (Consumables)	Hours	-	\$ 7.00	\$ -
Manlift	Hours	-	\$ 40.00	\$ -
Portable Welder	Hours	-	\$ 15.00	\$ -
Other Equipment - Pressure Washer Equipment	Hours	2,500.00	\$ 1.00	\$ 2,500.00
<b>Subtotal Equipment Cost (B)</b>			<b>\$</b>	<b>\$ 24,731.50</b>

**SECTION C: MATERIALS**

Item	Unit	Quantity	Material Cost	
			Unit Price	Total
		-	\$ -	\$ -
		-	\$ -	\$ -
		-	\$ -	\$ -
		-	\$ -	\$ -
		-	\$ -	\$ -
		-	\$ -	\$ -
<b>Subtotal Material Cost (C)</b>			\$ -	\$ -

**SECTION D: SUBS & CONSULTANTS**

Company	Description of Work to be Performed (Supporting quote & information attached)	Total Cost
		\$ -
		\$ -
<b>Subtotal Subcontractors &amp; Consultants (D)</b>		\$ -

**SECTION E: RENTAL EQUIPMENT**

Company	Description of Rental Equipment (Supporting quote & information attached)	Total Cost
Capital Pump & Equipment	Temp pumps and piping	\$ 15,933.43
Capital Pump & Equipment	12K Water tower rental	\$ 1,500.00
HERC Rentals	4K water truck rentals	\$ 10,648.87
TBD	Vactor truck rental	\$ 4,800.00
TBD	Pipe plug rental	\$ 12,500.00
<b>Subtotal Rental Equipment (E)</b>		\$ 45,382.30

**SECTION F: GENERAL CONDITIONS OF THE WORK**

Item	Unit	Quantity	General Conditions Cost	
			Unit Price	Total
Mobilization / Demobilization	LS	1.00	\$ 2,100.00	\$ 2,100.00
Permits & Environmental Controls	LS	1.00	\$ -	\$ -
Temporary Facilities & Controls	LS	1.00	\$ 280.00	\$ 280.00
Engineering / Testing	LS	1.00	\$ -	\$ -
Site Support	LS	1.00	\$ 1,105.36	\$ 1,105.36
Miscellaneous / Other (Equipment Fuel)	LS	1.00	\$ 2,500.00	\$ 2,500.00
<b>Subtotal General Conditions (F)</b>			\$ 5,985.36	\$ 5,985.36

OVERHEAD: 5.00% (% to be taken from coefficient)

PROFIT: 8.50% (% to be taken from coefficient)

Subtotal General Contractor Costs (A+B+C+E+F): \$ 161,707.49  
 O&P (13.50% of A+B+C+E+F): \$21,830.51  
 Total General Contractor Costs including O&P: \$ 183,538.01

Subtotal Subcontractor Costs (D) \$0.00  
 Subcontractor Profit (5% of D) \$0.00  
 Total Subcontractor Costs including O&P: \$0.00

TOTAL GC and Subcontractor Costs including O&P: \$183,538.01  
 Insurance Costs @ 1.0% \$1,835.38  
 Bond Costs @ 1.35% \$2,477.76  
 Sales Tax (65% of 9.20%) \$11,233.50

**Subtotal Job Cost: \$199,084.65**

Project Contingencies \$50,000.00

Project Allowances \$0.00

*Owner must provide prior approval (in writing) before the use of any Allowance or Contingency Funds*

**TOTAL JOB COST: \$249,084.65**

Submitted by:

Project Manager

Monday, March 21, 2022

Date

# Proposal Clarifications

**Project:** Luke AFB WWTP Draining

**Date:** 3/21/2022

**Revision:** Rev 0

# **Includes:**

- 1 Draining and flushing operations of WWTP per Stantec report dated March 02, 2022
- 2 Provide adequate portable pumping units and temporary piping based on report above
- 3 Provide temporary isolation plugs for the areas / structures based on report above
- 4 Vactor truck and crew for 16 hours

# **Excludes:**

- 1 Permits
- 2 Materials Testing
- 3 Hazardous Materials Testing and Abatement
- 4 Removal and disposal of all existing wastewater treatment equipment
- 5 Scraping, chipping, or other mechanical means needed for cleaning structures and equipment

# **Clarifications:**

- 1

# **Price Assumes:**

- 1 Normal Working Hours
- 2 All liquids / sludge will be pumped / disposed of in the sludge drying beds, disposal by others
- 3 Vactor truck contents can be disposed of on-site (at WWTP or new SLS)
- 4 Acceptable cleanliness will be as much as we can get from the exterior of each structure with a water hose

# **Assumes Owner to Provide:**

- 1 Access to the site, special clearances, etc.

# **Potential Contingency Usage:**

- 1 Vactor truck rental beyond 16 hours included in the proposal (\$300/hr - Truck & Crew)
- 2 Additional or larger rental pumps beyond what is identified in Stantec's report and Felix proposal
- 3 Additional temporary piping above 1,000 If that is included in the proposal

# **Project Allowance Details:**

- 1 Construction water cost (BFP testing, temp meter, deposits, usage, etc.)
- 2
- 3



9229 S Hardy Drive Tempe, AZ 85284  
 Phone: 480-626-5257 Email: Sales@cpepumps.com

**Quote #:** CP22-477

**Job Name:** Dewatering & Flushing Pumps

**Customer:** Felix Construction

**Location:** Glendale & Elmirage  
 Goodyear AZ

**Contact:** [Kory Burden](#)

**Phone:** [602-615-6473](tel:602-615-6473)

**Email:** [KoryB@felixconstruction.com](mailto:KoryB@felixconstruction.com)

Rental Equipment				RATES			
Qty	Unit	Rental Period	Description	Sale	Week	4 Week	Total
1	ea.	4 Week	4" Pioneer Pump			\$ 3,105.00	\$ 3,105.00
1	ea.	Sale	3" FN-33 HCP Sub. Electric Pump	\$ 497.16			\$ 497.16
1	ea.	4 Week	25KW Generator			\$ 3,780.00	\$ 3,780.00
1	ea.	4 Week	12000 Gallon Water Tower			\$ 1,500.00	\$ 1,500.00
4	ea.	4 Week	4" x 20' Hoses			\$ 225.00	\$ 900.00
2	ea.	4 Week	10' x 12' Spill Containments			\$ 150.00	\$ 300.00
1000	ft	4 Week	4" B&S HDPE Pipe			\$ 0.81	\$ 810.00
1	ea.	4 Week	Misc. Adapters & Fittings			\$375.00	\$ 375.00

QUANTITIES ARE ESTIMATES Rental Total \$11,267.16  
 QUANTITIES USED WILL BE BILLED

*\*\* This System is designed to deliver 400GPM \*\**

Delivery	\$ 900.00
Pick-up	\$ 900.00
Estimated Install Labor	\$ 2,250.00
Estimated Removal Labor	\$ 1,275.00
<b>Estimated Sale Tax</b>	<b>\$ 841.27</b>

**ESTIMATE TOTAL - \$17,433.43**

Prepared by: Jerry Sheatz

Accepted by:

Date: Thursday, March 17, 2022

Date: \_\_\_\_\_

Subject to Terms and Conditions on Page 2

Estimate valid for 30 days from issuance date



9229 S Hardy Drive Tempe, AZ 85284  
Phone: 480-626-5257 Email: Sales@cpepumps.com

### **Terms, Conditions & Specifications**

1. Customer agrees to abide by the terms and conditions on the purchase or rental contract.
2. Quantities are estimates and system is designed with information supplied by the customer. Any additional requirements will incur additional charges.
3. Customer responsible for all permits, traffic control, road crossings, etc.
4. Customer responsible for all FUEL & PM SERVICE during pump rentals.
5. Pump rate is based on **8 hour day, 48 hour week, 192 hour 4 week.**
6. Overtime Charges, if applicable, are Computed:  $(\text{Monthly Rate} / 192) \times .5 = \text{O/T Charge Per Hour}$
7. Labor rate is for normal working hours. Weekend or nighttime will incur additional charges.
8. Rental begins when bypass system is tested and ready for bypass operation. Equipment is off rent when bypass operation is no longer needed.
9. If Water Bridges are rented, they are placed under customer's direction. Customer accepts sole responsibility for placement, ongoing maintenance, and suitability for use in each specific traffic location.

### **JOB SPECIFIC TERMS, CONDITIONS & SPECIFICATIONS**



### Detail Report

Seller:	MARC HOPE	Branch #:	428
E-Mail:		Branch Name:	428 HERC GLENDALE
Phone:	+1 6028598905	Address:	12040 N 91ST AVE.,
		City, State:	PEORIA, AZ 85345
		Phone:	623-760-0631

### Customer Information

Name: FELIX CONSTRUCTION COMPANY  
 Address: 2530 S. 52ND AVE  
 City, State: PHOENIX, AZ 85043  
 Phone: 480-464-0011

### Jobsite Information

Site Name: GLENDALE WTO  
 Contact: MATT PHILLIPS  
 Address: 7105 N EL MIRAGE RD,  
 City, State: GLENDALE, AZ 85307  
 Phone: 469-404-6716

Dear MATT PHILLIPS,

Thank you for considering Herc Rentals and taking the time to outline your project needs. In reviewing your project, the Herc Rentals team is well positioned to meet your requirements. We are pleased to submit our solution, which outlines the project scope, pricing and support services. We will follow up shortly to answer any questions you may have and define next steps.

### Scope Of Work

### Current Project Schedule

Estimated Start Date & Time: 03/21/2022 07:00 AM  
 Estimated Return Date: 04/15/2022

Once again, thank you for your interest in Herc Rentals, I look forward to working with you on this project. Please do not hesitate to contact me if you have any questions about this proposal.

Sincerely  
 MARC HOPE  
 +1 6028598905



### Equipment Pricing

Equipment Scope				Rental Rates			Estimated Total
Quantity	Cat-Class	Description	Shift	Day Rate	Week Rate	Month Rate	
2	659-6050	TRUCK WATER 4000 GALLON DSL	S	\$ 550.00	\$ 1,713.00	\$ 4,600.00	<b>\$ 9,200.00</b>

### Rental Protection Plan

Customer has either elected to provide Certificate of Insurance prior to the rental commencing or will be utilizing Herc's Rental Protection plan.

### Estimated Project Cost Based On Scope Of Work

Equipment	\$ 9,200.00
Transportation	\$ 300.00
Labor	\$ 0.00
Fuel	\$ 0.00
Sales / Miscellaneous	\$ 0.00
Preventative Maintenance	\$ 0.00
Rental Protection Plan	\$ 0.00
Emission & Environmental Surcharge	\$ 253.92
VLF	\$ 62.50
Transportation Surcharge	\$ 57.00
<b>Estimated Subtotal</b>	<b>\$ 9,873.42</b>
<b>Estimated Tax</b>	<b>\$ 775.45</b>
<b>Estimated Total</b>	<b>\$ 10,648.87</b>

\*Additional Taxes & Fees May be applied & Vary by State, Locations & Application

\*Please note any PM charges listed are for one billing period

\*Please note additional charges may applied if drivers experience wait times/delays during delivery

\*Rental Quote is valid through: 04/20/2022

### Additional Information

Payment Terms: Net 30 Days

Thank you for your interest in Herc Rentals. Please contact me if you have any questions or comments. Assuring you our best attention at all times.

Sincerely,  
Herc Rentals

Please see our website for a list of services and associated charges at [HercRentals.com](http://HercRentals.com)