

**To:** All Plan Holders of Record

**From:** CT Consultants, Inc., For the Owner

**Re:** *Addendum No. 4*  
*Crackel Subdivision Sanitary Sewer – Phase 3*  
*Village of West Union*

**Date:** April 6, 2020

This Addendum forms a part of the contract documents and modifies the original bidding documents dated March 2020 and all previous addenda, if any. Acknowledge receipt of this addendum in the space provided in the bid forms. Failure to do so may subject the bidder to disqualification.

### **BID OPENING DATE**

The bid opening date shall be changed from April 7, 2020 to April 14, 2020. The time and place of opening shall remain the same.

### **PREVAILING WAGES**

Section 8, Prevailing Wage Rates - **REPLACE** the Wage Rate Schedule with the following:

Heavy and Highway – Decision No. OH2020001, Modification No. 4, dated 3/20/2020

### **SPECIFICATIONS**

**DELETE** Specification 263200 – Standby Electrical Generator System

In Specification 333213 **ADD** the following paragraph to section 1.3 after paragraph B.:

1. Pump Performance Certifications
  - a. Solids Management System designed for management of sanitary wipes, plastic bags, feathers, hair, sludge, and all other types of stringy solids.
  - b. Solids Handling Capability
    - i. All internal passages, impeller vanes, and recirculation ports shall pass a 3" spherical solid. Smaller internal passages that create a maintenance nuisance or interfere with priming and pump performance shall not be permitted. Upon request from the engineer, manufacturer's certified drawings showing size and location of the recirculation port(s) shall be submitted for approval.

In Specification 333213 **REPLACE** the following paragraph to section 2.1 paragraph A.2:

2. The principal items of equipment shall include two self priming, horizontal, centrifugal, v belt motor driven sewage pumps, one water cooled standby engine, valves, and piping. A pump motor control panel with thermal magnetic circuit breakers, magnetic motor starters, automatic liquid level control systems for normal and standby operation, and internal wiring.

In Specification 333213 **ADD** the following section 2.13 & 2.14:

## 2.13 ENGINE

- E. Standby engine shall be a four (4) cylinder or six (6) cylinder, (LPG) fueled water cooled type, and shall have continuous duty power rating suitable for the horsepower requirements of the pump, after derating to factors set forth under performance. Engine shall be cooled by an integral water cooling system capable of maintaining safe engine operating temperature under expected operating loads, and subject to the expected maximum ambient temperatures in the pump station enclosure.

## F. Equipment

1. The engine shall be equipped with all controls and components required for manual and automatic operation when used with the engine controls and DC level control system described in these specifications. Such components shall include, but not be limited to, the following:
  - a. 12 Volt dc electrical system including starter and alternator
  - b. Storage battery, 84 ampere-hour capacity minimum
  - c. Elapsed running time meter
  - d. Sensors for engine temperature, oil pressure, and overspeed
  - e. Critical grade exhaust silencer to limit engine exhaust noise.
  - f. Switch for manual operation of the cranking motor, mounted on or near the engine
  - g. Voltmeter
  - h. Solenoid fuel lock-off valve suitable for use with LPG service
  - i. Lube oil pressure gauge
  - j. Jacket water temperature gauge
  - k. Tachometer
2. Engine electrical equipment shall be wired to a terminal board on the engine and pre-wired to the base secured control panel. (Note: If control panel is opted to be shipped loose, connection to matching terminals in the control panel shall be by contractor.)
3. Because the engine shall be required to operate during emergency situations, the following minimum performance standards shall be used for engine selection:

- a. Engine speed shall be controlled by an electronic, governor-controlled throttle which shall maintain the preset speed over the range of expected pumping loads. This speed shall not be less than 1800 rpm to insure adequate cooling, nor more than 3000 rpm so that internal engine wear is held to a minimum. This governed speed shall not be acceptable if it is greater than that speed at which the engine torque and horsepower curves intersect. Engine manufacturer's published performance curves shall be submitted for review to support engine selection.
  - b. The engine shall develop approximately 95 percent of manufacturer's published performance after a reasonable run-in period.
  - c. For selection of engine size, engine performance shall be derated according to manufacturer's specifications to allow for decreased performance if installed at elevations more than 1000 feet above sea level.
  - d. For selection of engine size, engine performance shall be derated according to manufacturer's specifications to allow for decreased performance in an ambient temperature of 100 degrees F, which can reasonably be expected in the pump station.
  - e. Engine rating shall be further reduced to conform to engine manufacturer's recommendations for continuous service applications.
- G. Brake horsepower requirements of pump shall not exceed calculated engine horsepower after derating for power available after run-in, temperature compensation, and altitude compensation.

## 2.14 DRIVE TRANSMISSION

- E. Power shall be transmitted from engine to pump by a v-belt drive assembly through a centrifugal clutch mounted on a jackshaft, which shall be coupled or otherwise interfaced with a shaft extension on the pump motor. Jackshaft shall be constructed of steel, not less than 1 1/2 inches in diameter, and shall be mounted in two pillow blocks furnished with anti-friction roller bearings.
- F. Each drive assembly shall have a minimum of two v-belts or one synchronized belt system. Each v-belt drive assembly shall be selected on the basis that adequate power will be transmitted from driver to pump based on the data developed in accordance with drive calculations.
- G. Precise alignment tolerances of the drive assemblies shall be achieved by means of a belt/sheave laser alignment system resulting in the reduction of vibration, accelerated wear, and premature failure.
- H. Centrifugal clutch shall be designed to remain disengaged until engine has reached some speed greater than idle speed to reduce starting loads. Once engaged, clutch shall be rated

to transmit power continuously until engine speed has been reduced below disengagement speed. Clutch shall disengage completely while engine is not operating.

I. Belt guards

1. Pump drive transmissions shall be enclosed on all sides in a guard constructed of any one or combination of materials consisting of expanded, perforated, or solid sheet metal, except that maximum perforated or expanded openings shall not exceed 1/2 inch.
2. Guards shall be manufactured to permit complete removal from the pump unit without interference with any unit component, and shall be securely fastened to the unit base.
3. All metal shall be free of burrs and sharp edges. Structural joints shall be continuously welded. Panels may be riveted to frames with not more than five-inch spacing. Tack welds shall not exceed four-inch spacing.
4. The guard shall be finished with one coat of gray W.R. non-lift primer and one coat of orange acrylic alkyd W.R. enamel in accordance with section 3, Color Definitions of ANSI 253.1; Safety Color Code for Marking Physical Hazards.

In Specification 333213 **ADD** the following paragraph to section 1.5 WARRANTY after paragraph A.:

1. The standby generator system shall be warranted by the manufacturer for sixty (60) months from the date of acceptance by the owner.

In Specification 333213 **ADD** the following paragraph to section 2.7 after paragraph A.:

1. Meter shall be Sparling Model FM656-06-511-0 or equal.

## **DRAWINGS**

**REMOVE** the following plan sheets:

ELEC-DET (sheet 24B)  
FM-PNP4 (sheet 16A)  
LS-PLAN Essman (sheet 19B)

**ADD** the following plan sheets:

ELEC-DET (sheet 24C)  
FM-PNP4 (sheet 16B)  
LS-PLAN Essman (sheet 19C)

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Enclosures

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