Illinois Department of Transportation
2300 South Dirksen Parkway / Springfield, Illinois / 62764

January 5, 2006

SUBJECT: FAP Route 301
Section 28-50-M
JoDaviess County
Contract No. 64611
Item No. 106, 1/20/2006 Letting
Addendum A

NOTICE TO PROSPECTIVE BIDDERS:

Attached is an addendum to the plans or proposal. This addendum involves revised and/or added material.

1. Revised pages i & ii of the Table of Contents to the Special Provisions.
2. Revised pages 2 & 3 of the Special Provisions.
3. Added pages 66 – 70 to the Special Provisions.

Prime contractors must utilize the enclosed material when preparing their bid and must include any Schedule of Prices changes in their bidding proposal.

Bidders using computer-generated bids are cautioned to reflect any and all Schedule of Prices changes, if involved, into their computer programs.

Very truly yours,

Michael L. Hine
Engineer of Design
and Environment

By: Ted B. Walschleger, P. E.
Engineer of Project Management

cc: Greg Mounts R-2, D-2: Roger Driskell;
Estimates; Design & Environment File

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Revised 1/5/2006

This work shall consist of closing the entrance to the rest area with Type III barricades as shown in the plans. All devices shall be in accordance with Section 702 of the Standard Specifications. The Contractor shall provide 7 calendar days advance notice to the Engineer prior to closing the rest area.

This work will be paid for at the contract unit price per Lump Sum for TRAFFIC CONTROL FOR ROAD CLOSURE.

Revised 1/5/2006

DRINKING FOUNTAIN
Effective May 18, 2005

This work shall consist of furnishing and installing a drinking fountain at the location shown on the plans.

The drinking fountain shall be installed in compliance with all requirements of the Illinois Department of Public Health, as directed by the Engineer, and as specified herein. The type of drinking fountain shall be Haws Model 3177.6280FR with Valve Vault 6518.2FR or an approved equal that meets or exceeds the following specifications:

Revised 1/5/2006

DRILLED WATER WELL COMPLETE

Effective December 21, 2005

Summary of Work covered under this Special Provision

This Work shall include the following:

1. Installation of a new water well at the location shown on the Plans including casing pipe, well head, vent, etc, as required for a complete and proper installation.
2. Installation of a submersible pump and motor, power cable, motor controls, drop pipe, pitless adapter, check valves, etc. as required for a complete and proper installation.
3. Installation of distribution system piping from the new well to an existing pressurized water storage tank including any incidental connections.
4. Well production test at the design flow.
5. Any other appurtenances required for a complete and proper installation.

This work shall be done in accordance with applicable Sections of the Standard Specifications for Road and Bridge Construction, and shall be in compliance with all requirements of the Illinois Department of Public Health (IDPH), as directed by the Engineer, and as specified herein. Requirements of the IDPH publications "Illinois Water Well Construction Code," latest edition and "Illinois Water Well Pump Installation Code," latest edition shall be incorporated by reference into this Special Provision.

Anticipated Operating Conditions

The new well shall be connected to an existing pressurized water tank as shown on the Plans. The existing water tank has an estimated capacity of 120 gallons. Normal operation will be dictated by the pressure in the water tank: the pump shall turn on at 45 psi and shall turn off at 65 psi.

Well Location/Drilling/Casing

The Contractor shall drill a new water well to an approximate depth of 600 feet at the location shown in the plans. CONTRACTOR IS ALERTED TO THE FACT THAT THE PROPOSED LOCATION OF THE NEW WELL AS SHOWN ON THE PLANS WILL REQUIRE A VARIANCE FROM THE JO DAVIESS COUNTY DEPARTMENT OF PUBLIC HEALTH DUE TO ITS PROXIMITY TO THE EXISTING WELL, WHICH IS TO BE ABANDONED IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A VARIANCE FOR THE INSTALLATION OF THE NEW WELL, IF REQUIRED.

Installation of the well shall be by means of a rotary type drill with sufficient airlift capabilities as to lift drill cuttings, and to clean and develop the water well to its fullest production rate. All approved well drilling apparatus is acceptable.

Added 1/5/2006

The well shall be cased to a minimum depth of 470 feet with eight inch (8”) diameter steel well casing pipe so as to case out or eliminate the influence of the existing five inch (5") diameter water well. The steel well casing pipe shall meet the requirements of ASTM A-53 and shall be threaded and coupled. Welded joints will not be acceptable. The well casing shall be set and the annular space or over size borehole shall be pressure grouted with a bentonite / Portland Cement Concrete mixture, as approved by the Engineer.

Well Production Test

After drilling and casing the well, and prior to final pump and motor selection and procurement, Contractor shall conduct a short well production test to determine actual field conditions and parameters. (Contractor shall note that estimates of static and well pumping depths, horsepower ratings and motor sizes provided in this Special Provision are preliminary in nature and shall be used for bidding purposes only. Actual pump and motor selection shall be based on field conditions and the results of a well production test).

Well production test shall be 2 hours in duration at the desired design flow of 40 gpm. Contractor shall determine the following parameters during the well production test:

1. Static (non-pumping) water level (as measured from the ground surface)
2. Dynamic (pumping) water level (as measured from the ground surface)

The following sections summarize estimated operating conditions which will be checked with the well production test.

Well Pump/Motor and Appurtenances

The pump shall have a sufficient capacity and total dynamic head (TDH), to meet the following estimated operating conditions:

1. Required flow: 40 gallons per minute (gpm)
2. Estimated TDH: 560 feet
3. Estimated liquid horsepower supplied to the water (Lhp) : 5.7 hp
4. Estimated Brake Horsepower required at the impeller (Bhp): 15 hp
5. Pump On: Pressure in existing water tank = 45 psi
6. Pump Off: Pressure in existing water tank = 65 psi

The above estimated operating conditions are based on the following assumptions:

1. 380 feet to pumping level;
2. 380 feet of 2 inch diameter Schedule 80 PVC drop pipe;
3. 250 feet of 2 inch diameter Schedule 80 PVC distribution piping to water tank;
4. 3-90 degree elbows;
5. 3 check valves;
6. 2 gate valves;
7. 2-45 degree elbows;
8. Pump off condition at water tank of 65 psi (151 feet of head).

Added 1/5/2006

FINAL PUMP SELECTION SHALL BE APPROVED BY THE ENGINEER PRIOR TO PROCUREMENT OF THE PUMP AND MOTOR BASED ON THE FIELD LOCATION OF THE WELL AND THE RESULTS OF A WELL PRODUCTION TEST (SEE ABOVE).

Acceptable submersible pump manufacturers shall include the following:

1. Grundfos
2. Goulds
3. Others as approved by the Engineer

The pump motor shall be 15 Hp, lightning protected, 230v, single phase, stainless steel motor and liquid end jacket, complete with motor pigtail lead, epoxy jam nut, and auxiliary ground. Motor shall be as manufactured by Franklin Electric Motors, or approved equal.

Drop Pipe/Check Valves

The drop pipe shall be two inches (2") in diameter, Schedule 80 PVC NSF Standard 61 threaded and coupled. A two inch (2") solid brass reamed and drifted coupling shall be used to connect sections of pipe. Alternatively, “Shur-Align” drop pipe meeting the same material specifications (i.e. Schedule 80 PVC) as manufactured by Modern Products Industries, Inc. may be used for the drop pipe. If “Shur-Align” is used for the drop pipe, then “Shur-Align” in-line check valves shall also be used.

A check valve will be required within 5 feet of the discharge of the pump (but below the well pumping depth) and every two hundred feet (200') following. For pump set depths less than four hundred feet (400'), a check valve shall be placed equal distance from the pump head to the pitless discharge. Swing type check valves will not be acceptable.

Pitless Adapter

Pitless adapter shall be Model 8123BEZ Weld-on as manufactured by Baker Manufacturing Company (Monitor Division), or as approved by the Engineer. Pitless adapter shall be compatible with 8 inch diameter well casing pipe.

Submersible Pump Cable

The submersible pump cable shall be in accordance with all UL standards and shall be flat incorporating three (3) conductor leads and one (1) ground lead, stranded copper, double water tight insulation jacket, rated at 600 volts. An estimated 650 feet of cable will be required between the control box (located in the existing building) and the pump motor (assumed to be set at approximately 400 feet deep in the new well), but this length shall be confirmed by the contractor based on field conditions and actual requirements. The cable shall be buried a minimum of two feet (2') deep and may be placed in the same trench used for the water service line.

Added 1/5/2006

Motor Control/Power Supply

The contractor shall provide a 100-AMP single phase disconnect for the submersible pump. Provide deluxe motor control with magnetic contactor with 60 AMPS or compatible internal or external independent breaker. All controls shall be lightning protected.

The Contractor shall be responsible for all excavation and grading necessary to bring in electrical service to the control room.

Distribution Piping

A new water line will be required between the new well and the existing pressure tank. The estimated length of the water line is one hundred sixty feet (160'). It will be the responsibility of contractor to confirm this length. The water line shall be connected to the existing water supply line using two-inch (2") diameter Schedule 80 PVC bell and socket solvent weld PVC. The water line shall be buried a minimum of five feet (5') deep, bedded in sand or another approved material appropriate as to not puncture or otherwise damage the pipe. The trench shall be back-filled with sand, and tamped in lifts of six inches (6") or as directed by the Engineer. The final top six inches (6") of the trench is to be filled with a cohesive soil capable of supporting vegetation.

Chlorination/Disinfection

The new well shall be chlorinated by using the column displacement method, where as the vertical water column is displaced at least two (2) volumes with a 100ppm chlorination solution. This solution shall be activated and pumped into the distribution system and allowed a minimum of twelve (12) hour contact time. A water sample shall be delivered to an approved State of Illinois laboratory and tested for coliform and nitrates.

Drinking Fountain Water Supply

A new one inch (1") diameter Schedule 40 PVC feeder line, off the main line installed from the new well location to the existing water tank located in the existing control building, shall be installed to the new handicapped drinking fountain. Contractor shall provide a gate valve on the one inch diameter feed line to the drinking fountain. A solid brass curb stop and drain shall be installed at the fountain to winterize the fountain. Backfill requirements shall be the same as the main waterline. The estimated length of the line is one hundred feet (100'). It will be the responsibility of contractor to confirm this length in the field.

Well Construction Permit

Contractor shall secure any and all permits required for the installation, testing and operation of the new well and appurtenances. Any costs associated with these permits shall be considered incidental to the contract price for this item.

Added 1/5/2006

Well Abandonment

The existing well is to be sealed and abandoned as per the Illinois Department of Public Health's Specifications and Regulations. An affidavit is typically required and shall be submitted to the appropriate agencies.

The Work summarized in this Special Provision will be paid for at the contract unit price per Lump Sum for DRILLED WATER WELL COMPLETE.

Added 1/5/2006