OKLAHOMA TURNPIKE AUTHORITY
SPECIAL PROVISION
FOR
SECTION 882
CHANGEABLE MESSAGE SIGN


(Add the following:)

882.01 DESCRIPTION

This work consists of providing, maintaining, and using a trailer-mounted changeable message sign or remote-controlled changeable message sign.

882.02 MATERIALS

Provide an internally-illuminated variable-message sign including the following characteristics:

- A magnetically operated matrix, LED, fiber optic, or lamp matrix message board,
- A solar and battery power supply,
- Hardware for connection to a 110 V power source,
- An on-board computer, and
- A computer-operated interface.

Mount on a towable, heavy duty trailer.

Provide a sign capable of three lines of text or symbols, each with seven rows and 40 columns of LED pixel display elements. Provide solid state LEDs and LED energize/de-energize circuitry, directly embedded in the display element panel. Ensure each line consists of eight separate, interchangeable display element panels with seven rows and five columns of display elements. Provide display element panels with an evenly installed horizontal matrix, with 3 in between individual characters. Ensure each display element panel measures 18 in [457 mm] high by 13 in [330 mm] wide, with no separate driver boards required to drive the LEDs. Provide a separate wiring harness to power each LED pixel on the display element panels.

Provide sign display elements consisting of wide-angle LEDs that allow 30° legibility of the sign message. Ensure LEDs rated for at least a 100,000 hr life. Ensure the display elements operate at temperatures from −20 °F to 140 °F [−29 °C to 60 °C].

Ensure clear sign legibility from 1,000 ft [305 m].

Provide an onboard computer to control the sign. Ensure the sign automatically changes to a pre-selected default message upon failure, and it remains on display until the problem is corrected.
Equip the remote-controlled changeable message sign unit with a cellular telephone and a security system that prevents unauthorized sign access, but allows access through a password or code unique to that sign. If the password or code is not entered within 60 s of initial telephone contact, terminate the call. Control the remote-controlled changeable message sign with a touch tone modem decoder.

Provide a sign capable of storing up to 199 preprogrammed messages, and displaying any of the messages with a call through the trailer-mounted terminal for the changeable message signs and the remote-controlled changeable message signs. Ensure the sign retains the messages during power failure. Ensure sign operation if the sign keyboard controller is disconnected.

Provide a solar recharged battery pack as the primary power supply.

Provide a solar power supply consisting of solar cell modules installed in a rigid mount at the top of the sign case, and wired to the battery pack through a 30 A solar regulator. Ensure the solar regulator capable of 30 consecutive 24 hr days of operation, starting with a fully charged 12 V battery pack without sun under normal weather conditions. Include a temperature-compensated, voltage-regulated 110 V (AC) battery trickle charger, accessible from a standard plug-in convenience receptacle mounted in the side of the pedestal. Ensure a 110 V (AC) battery trickle charger capable of recharging the battery pack within 24 hr to 48 hr. Ensure the temperature-compensated voltage-regulated trickle charger automatically charges the batteries when 110 V (AC) is applied to the convenience receptacle. Do not require the operator to configure the charging system after plugging in the 110 V (AC) power source.

Provide four 12 V D-size batteries, deep cycle rated for solar power systems.

Ensure the lamp matrix, LED, or fiber optic sign equipped with a top-mounted photocell for automatic sign-dimming during night use.

Provide a trailer rated for 3,500 lb [1,588 kg] including an axle and springs rated for 3,500 lb [1,588 kg]. Ensure each trailer includes hydraulic surge brakes rated for 6,000 lb [2,722 kg], with a 2 in [50 mm] ball hitch.

Provide a trailer consisting of a frame and tongue constructed of square tube. Ensure the frame is at least 3 in by 3 in [75 mm by 75 mm] and 3/16 in [4.8 mm] thick; and the tongue is at least 3 in by 3 in [75 mm by 75 mm] and 1/4 in [6.4 mm] thick. Weld the tongue and trailer in accordance with AWS standards. Use ASTM 500 grade B alloy. Ensure the trailer is 196 in [4,978 mm] long by 79.5 in [2,019 mm] wide. Provide 15 in [375 mm], five lug wheels with holes for inserting a heavy chain to prevent vandalism. Provide size P205-75-15 rating B tires.

Provide the trailer with four leveling jacks, one at each corner, making the trailer and sign assembly capable of withstanding 104 mph [167 km/h] wind gusts.

882.03 EQUIPMENT — VACANT

882.04 CONSTRUCTION METHODS.

Provide, place, operate, maintain, and relocate the sign as shown on the Plans.
882.05  METHOD OF MEASUREMENT — VACANT

882.06  BASIS OF PAYMENT

The Authority will pay for each pay item at the contract unit price per the specified pay unit as follows:

<table>
<thead>
<tr>
<th>Pay Item:</th>
<th>Pay Unit:</th>
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</thead>
<tbody>
<tr>
<td>(A) CHANGEABLE MESSAGE SIGN</td>
<td>Each or Sign Day</td>
</tr>
<tr>
<td>(B) REMOTE CONTROLLED CHANGEABLE MESSAGE SIGN</td>
<td>Each or Sign Day</td>
</tr>
</tbody>
</table>

The Authority will consider the cost of the cellular telephone and telephone charges required for the remote-controlled sign to be included in the contract unit price for Remote-Controlled Changeable Message Sign. The cellular phone will become the property of the Authority.

If the Contract includes an each pay item for Changeable Message Sign or Remote Controlled Changeable Message Sign, the portable changeable message signs will become the property of the Authority upon completion of the Project.

If the Contract includes a sign day pay item for Changeable Message Sign or Remote Controlled Changeable Message Sign, the portable changeable message signs will become the property of the Contractor upon completion of the Project.

The Authority will consider the cost of providing, placing at a location approved by the Engineer, maintaining, and operating one changeable message sign for 1 day to be included in the contract unit price for the relevant pay item.