

1. REMOTE WEATHER MONITORING SYSTEM

A. Description. Existing Roadway Weather Information System (RWIS) surface and subsurface sensors are located in the existing eastbound pavement at approximately 121+19+/- and 136+23+/- . This project will abandon in place the existing sensors and cables, replace them with one (1) new surface sensor and one (1) new subsurface sensor at the same location as the existing sensors at 136+23+/-, and one (1) non-invasive surface sensor over the eastbound pavement at about 121+50+/-, and upgrade the existing RPU to interface with the new surface sensors.

B. Construction Requirements. Contact the Communications Bureau Chief at 406-444-6305 a minimum of two weeks prior to beginning any construction activities near the location of the existing RWIS site. The Communications Bureau will assist in determining the exact location of the existing surface sensor to be abandoned in place; ensure it has been disconnected at the RPU prior to any construction activities; and help to determine the final location of the replacement surface sensor. The existing RWIS tower and all peripheral equipment associated with the existing RWIS station are to remain in place and in service during the entire construction project.

For more information, contact:
Communications Bureau
2701 Prospect Avenue
P.O. Box 201001
Helena, MT 59620
Phone: (406)444-6305
E-mail: pbalsley@mt.gov

2. WEATHER MONITORING SYSTEM SENSOR REQUIREMENTS

A. Description. This work consists of furnishing all materials, equipment, and labor necessary for the installation of sensors for the existing Remote Weather Information System (RWIS) and upgrade of the existing RPU.

B. Materials. The following is a list of RWIS components necessary for the completion of this work:

QUANTITY	DESCRIPTION
1	RWS200 Remote Processing Unit (RPU) Base Structure Including all interface cards, system boards, station software license
1	DRS511AB Embedded Road Sensor with 2000' of cable and interface for the RPU
1	DRS511 Installation kit with Fabick Sealant
1	DST12G Subsurface Temperature Probe with 2000' of cable and interface for the RPU.
1	Fabick MP55 Caulking Applicator
1	HMP155E Air Temperature and Relative Humidity Sensor.
1	DTR503A Radiation Shield for HMP155E and Mounting Kit including M12 30' connection cable and RPU interface for the HMP155A/E sensor with PWD.
1	Road State and Temperature non-invasive sensor combination DSC211/DST111 with 500' of cable and RPU interface

Most of these components may be obtained from:
Vaisala, Inc.
194 South Taylor Avenue
Louisville, CO 80027
Tel: 1-877-VAISALA (824-7252)

C. Construction Requirements. Furnish and install all equipment in conformance with the manufacturer's requirements and guidance from the MDT Communications Bureau. Re-use the existing conduit and pull boxes in place at the tower/RPU to establish connectivity between the roadway sensors and the RPU. Remove any unnecessary cable/conductor from the existing pull boxes and conduit to ensure a clean, easily identifiable, installation. Install the surface and subsurface sensors without any splices between the sensors and the RPU. Install the non-invasive road state and temperature sensor on the existing camera pole on the interchange bridge. Install cabling for the non-invasive road state and temperature sensor in existing conduit between the RPU and existing camera pole. Disconnect all existing sensors before replacing the existing RPU with the new RPU. Replace the air temperature and humidity sensor with the new sensor specified. Coordinate with the Communications Bureau and the Engineering Project Manager on a mutually agreeable date for the commissioning of the site. Allow a minimum of two weeks advance notice for this date. The commissioning will be performed by the Communications Bureau on site after the installation of the RWIS equipment has been completed and is ready for turn on. The commissioning process brings the installed RWIS equipment into a fully operational condition and ensures the site meets the manufacturer's warranty requirements. The Communications Bureau will terminate the sensors to the new RPU inside the existing RPU cabinet and test the sensors to ensure proper installation and operation has been achieved. Correct any deficiencies in installation or workmanship noted by Communications Bureau personnel and the Engineering Project Manager at the time of commissioning at the sole expense of the contractor and prior to final acceptance. Protect the installation during all phases of construction. Replace any damaged equipment caused by construction activities at the sole expense of the contractor.

D. Method of Measurement. Measurement is made on a lump sum basis for the installation of all RWIS related equipment and provides full compensation for all materials, labor, tools, equipment, site commissioning expenses, and other incidentals necessary to complete the work in accordance with the manufacturer's specifications and as directed by the Engineering Project Manager.

E. Basis of Payment. Include all costs associated with this work in the unit bid price for Revise Weather Monitoring System.