

**STATE OF OHIO
DEPARTMENT OF TRANSPORTATION**

**SUPPLEMENTAL SPECIFICATION 829
WORK ZONE EGRESS WARNING SYSTEM**

January 20, 2017

829.01 Description

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829.01 Description. This work consists of furnishing, coordinating, installing, maintaining, operating, tracking, monitoring and subsequently removing a Work Zone Egress Warning System (WZEWS) that detects construction vehicles leaving the work zone and notifies upstream drivers via a WZEWS Sign Trailer with Warning Beacons.

829.02 Materials. Furnish materials conforming to:

Work Zone Egress Warning System Materials929

829.03 Construction. Furnish, coordinate, install, maintain, operate, track, monitor and subsequently remove the WZEWS in accordance with the following requirements:

Notify the Engineer in writing 7 calendar days in advance of deployment of any component of the WZEWS.

Provide documentation detailing the technical and operational aspects of the completed system, including, but not limited to, device manuals, system diagrams, cabling diagrams, wiring diagrams, and communication network schematics. Include any and all field engineering notes specific to each component including documentation on how the system was set up, sensory ID numbers, IP addresses to all devices, port numbers, and any other documentation as required by the Department.

Place the WZEWS in accordance with Maintenance of Traffic Standard Construction Drawing (SCD) MT-103.10. Place the sensor so that only construction vehicles in Opening B of the drawing are detected by the sensor.

Provide the Engineer with the name and contact information for a point of contact for the WZEWS. The contact must be locally available to maintain system components, move portable devices as necessary, and respond to emergency situations. Coordinate the placement of devices in the project areas.

Provide the Engineer with the proposed corrective procedures, including response times and notification process.

Maintain the WZEWS components in good working order in accordance with the provisions of C&MS 614.07. Verify the installed WZEWS components are functional and are in good working order on a daily/nightly basis. Reposition the sensor if it is not accurately detecting construction vehicles as they drive into Opening B on MT-103.10.

Provide proof to Engineer that communication with all sensors and WZEWS Sign Trailer are taking place simultaneously to ensure real time data and messages to the motoring public.

Program the WZEWS so that the Warning Beacons on the WZEWS Sign Trailer flash for 30 seconds after construction vehicle detection. This time may be changed due to specific site conditions as directed by the Engineer.

Provide data as specified in Supplemental Specification 929 upon request by the Engineer.

Cease use of the egress access point (Opening B on SCD MT-103.10) in the event that that one or more components of the WZEWS are not functioning, including failures. Use of the egress access point may resume with the approval of the Engineer once the WZEWS is fully operational.

Remove system if access point is no longer being used. Notify the Engineer upon final removal of the WZEWS.

829.04 Operational Test. Complete an 8 hour operational test when a WZEWS is initially installed on the project. The 8 hour operational test is to ensure that all WZEWS equipment (including the WZEWS Sign Trailer, traffic sensor, radio, software, and communication devices) is operating in a fully functional manner and in accordance with the plans and specifications for a duration of at least 8 hours and for a minimum of 20 consecutive egressing vehicles. Provide complete operations support from the vendor during the operational test. Provide visual verification that the system only detects vehicles that are exiting the work zone using Opening B (SCD MT-103.10) and detects 95 percent of these same vehicles. (If less than 95 percent of the vehicles are detected, no credit will be given for the operational test period, and the 8 hour operational test will reset.)

Maintain written records of vehicles leaving through Opening B (SCD MT-103.10), equipment stoppages, resumptions, and errant/missed detections during the operational test for submission to the Engineer.

In the event that more than 5 percent of the activation and/or communication malfunctions occur that affect the proper operation of the WZEWS, the Engineer may declare a system or component defective and require replacement of the equipment at no additional cost. When a system or component defect is declared, no credit will be given for the operational test period, and the 8 hour operational test will reset.

Submit a written summary to the Project Engineer detailing the daily system activity during the operational test upon completion of the operational test. The report should include all notes taken during the visual inspection of the WZEWS operation (including errant/missed detections) and timestamped data for each time the traffic sensor and WZEWS Sign Trailer are activated. The report shall also indicate any and all activity that occurred to maintain or repair any of the WZEWS components.

829.05 Method of Measurement. Measurement will begin when each WZEWS initially begins active service after the operational testing and will continue until the Engineer determines the WZEWS is no longer needed, temporarily or permanently.

WZEWS quantities are measured by the number of WZEWS in place at any one time during each individual sign month of use. Each WZEWS shall be paid for only once, per sign month, regardless of how many times it is moved/replaced, activated/deactivated, or how many times the WZEWS is activated. Payment shall be in full sign months.

A Sign Month will be deducted if the contractor removes a WZEWS without the Engineer's determination that it is no longer, temporarily or permanently, needed for the project.

Any failure shall not result in one or more WZEWS component being out of service for more than 12 hours, including weekends.

829.06 Basis of Payment. Bid price to furnish, coordinate, install, maintain, operate, track, monitor, and subsequently remove the WZEWS shall be on a sign month basis. A sign month, for the WZEWS, shall be a 30-day period that starts on the initial day of each WZEWS activation.

Payment for the WZEWS shall be at the contract unit price. Payment shall include all labor, materials, equipment, fuels, lubricating oils, software, hardware, communication devices, and incidentals to perform the above described work including furnishing, installing, moving, adjusting, and removing the WZEWS.

The Engineer may remove payment for the WZEWS if one or more WZEWS component is found to be in non-compliance with this Supplemental Specification. Failure to return to compliance within 12 hours may result in the removal of payment in full sign months.

No additional compensation shall be provided beyond the sign month bid item price for the WZEWS. The Department will pay for accepted quantities at the contract prices as follows:

Item	Unit	Description
829	Sign Month	Work Zone Egress Warning System

Designer Note:

Use only in accordance with the Traffic Engineering Manual (TEM) Part 6, *Section 640-29.2*.