STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

SUPPLEMENTAL SPECIFICATION 908
DIGITAL SPEED LIMIT (DSL) SIGN ASSEMBLY

October 16, 2015

908.01 Description.

This Supplemental Specification sets forth the requirements for Digital Speed Limit (DSL) Sign Assemblies. DSL Sign Assemblies shall consist of components such as: Signs, Speed Limit Sign Beacons, Mounting, Power Supply and Controls. DSL Sign Assemblies shall be NCHRP 350 or MASH compliant. Components of the DSL Sign Assemblies shall comply with the OMUTCD.

908.02 Materials.

The DSL Sign Assembly shall consists of the following components: Signs, Speed Limit Sign Beacons, Mounting, Power Supply and Controls.

Furnish materials according to the Department's Approved List.

A. Signs. Equip the sign assembly to include: one 48" x 60" Speed Limit sign (R2-1) with a numerical digital display legend, and one 48" x 12" WORK ZONE (G20-H5bP) plaque. The G20-H5bP plaque shall be mounted horizontally centered with and vertically above and immediately adjacent to the R2-1 sign.

The color of the digital display legend portion of the R2-1 sign shall be a white legend on a black background. The minimum pixels per character (numeral) on the digital display legend of the R2-1 sign shall be 5 wide by 7 high. The digital display legend portion of the R2-1 sign shall automatically adjust brightness under varying light conditions to maintain legibility. Speed limit values shown on the digital display legend shall continuously display without animation.

The digital display legend of the R2-1 sign shall be wired so that it can be blanked out or changed between the original posted speed and the approved reduced speed limit(s) (and between two reduced speed limits) in conjunction with implementation of a work zone speed zone while using a hand control hard wired to the DSL Sign Assembly.

Sign mounting shall be per the OMUTCD and shall be such that the bottom of the R2-1 sign shall be a minimum of 7 feet above the roadway.

All sign colors and sheeting types shall be per OMUTCD and C&MS 614.

B. Speed Limit Sign Beacons. Furnish the Speed Limit Sign Beacons in accordance with C&MS 731.06. Two 12-inch Speed Limit Sign Beacons (two circular yellow LED sections of a standard traffic control signal) shall be provided per DSL Sign Assembly.

The Speed Limit Sign Beacons shall be securely mounted, horizontally centered, and positioned above and below the sign assembly perpendicular to the sign assembly face. The distance between the nearest edge of any sign or plaque and the Speed Limit Sign Beacon shall be no less than 12 inches. The distance is to be measured to the nearest sign or plaque.

Speed Limit Sign Beacons shall be equipped with an automatic dimming device that automatically adjusts the brightness under varying light conditions. Speed Limit Sign Beacons shall be flashed at a rate of not less than 50 or more than 60 times per minute. The illumination period of each flash shall be a minimum of one-half and a maximum of two-thirds of the total cycle. The Speed Limit Sign Beacons shall be alternately flashed.

The Speed Limit Sign Beacons shall be wired so that they can be activated and deactivated in conjunction with implementation of a work zone speed zone while using a hand control hard wired to the DSL Sign Assembly.

C. Mounting. All DSL Sign Assemblies shall be trailer mounted. No portion of the trailer or attachments shall physically or visually block any portion of the sign assembly or Speed Limit Sign Beacons from road users approaching the sign. The mounting method shall be suitably stable such as to prevent movement due to high winds or passage of large vehicles.

Construction shall be such as to transport the DSL Sign Assembly and appurtenances adequately and legally as well as to support them properly during operation. The trailer shall be equipped with devices which shall provide leveling and stability during operation.

Equip the trailer with a sight tube aiming device, installed parallel to the Speed Limit Sign Beacons and digital display legend beams, to ensure optimum DSL Sign Assembly positioning for oncoming driver visibility when scoped to be in alignment with oncoming target traffic.

Trailers shall be permanently delineated per C&MS 614.03.

D. Power Supply. The DSL Sign Assemblies shall be solar powered. Solar powered battery units shall have a no-charge-life of not less than 30 days. No-charge-life is the number of consecutive days that the system can continue to properly function (Speed Limit Sign Beacon flashing mode, normal dimming and full output during varying lighting conditions for the numerical digital display legend and the Speed Limit Sign Beacons, etc.) starting with a full battery charge and with no additional charge provided by the solar cells.

The power supply and hand control enclosure shall be tamper and vandal resistant.

E. Controls. Each DSL Sign Assembly shall be secured/locked so that unauthorized users cannot tamper with the power supply and hand controls.

The DSL Sign Assembly shall have an on/off power switch that controls the power supply to the Speed Limit Sign Beacons and the digital display legend portion of the Speed Limit sign.

The DSL Sign Assembly shall include a hand control hard wired to the unit capable of activating and deactivating the Speed Limit Sign Beacons as well as changing the numerals on (and blanking out) the legend on the digital display legend portion of the R2-1 speed limit sign.