

**OHIO DEPARTMENT OF TRANSPORTATION
OFFICE OF ROADWAY ENGINEERING
STW OVERHEAD SIGN SUPPORT INSPECTION
Scope of Services
PID 121766**

General

Provide systematic inspection of the structural components of ODOT-maintained overhead sign supports and overhead Dynamic Message Signs (DMS) supports to assess their structural integrity. Record inspection results for sign supports using the ODOT Sign and Support Inventory Collector Application, and the ODOT ITS Collector Application for DMS supports.

Inspections

Give one-week prior notification of inspection to Central Office and the District. Email an Excel spreadsheet listing, at a minimum, the County-Route-Section, Support File Number (e.g., SUP0100100), Device File Number (e.g. DEV0101010), Support Style, and Latitude/Longitude of each support that will be inspected during the upcoming week.

When possible, conduct inspections during daylight hours and while working from the shoulder or beyond the shoulder. If lane closure(s) are necessary, conduct inspections only during the District's Permitted Lane Closure times.

Uncover buried foundations and remove excessive vegetation that may prevent adequate inspection.

Conduct distant visual inspections from the ground using binoculars or unmanned aircraft system (UAS) as an aid as needed. Do not climb the structure.

Conduct bore scope internal visual inspection on all monotube structure uprights and, when identified, other support type uprights. If needed due to potential internal corrosion, use ultrasonic thickness gauge to determine existing wall thickness.

In accordance with ODOT Supplement 1132, requests for use of unmanned aircraft must be submitted to the Ohio/Indiana UAS Center (UASC) 30 days prior to any operation. FAA Part 107 regulations do not allow flights over non-participants which includes flights over live traffic. All UAS operations must occur from the shoulder or beyond the shoulder. Remote pilots must comply with Part 107 rules and regulations at all times.

Conduct visual inspections on all elements of the sign structure, sign, sign attachments and connections including but not limited to the foundation concrete, soil around the foundation, anchor bolts and nuts, leveling nuts, structural members, structural connections, sign attachment assemblies, extrusheet sign clips, and structural components of the sign lighting (if present).

Test all anchor bolts for structural integrity by sounding with a hammer and, if needed due to poor sounding results, follow up with ultrasonic testing. Tighten loose anchor nuts and leveling

nuts following turn-of-nut method per Construction and Materials Specification (CMS) Section 513.

When performing inspections on monotube sign supports, use engineers or engineer technicians certified to perform UT measurements, to perform UT testing on each vertical support and above each lane and shoulder in the span. Document results and enter data into the appropriate comments fields in the ODOT Sign and Support Inventory Collector Application (aka Collector App).

Document resolved and unresolved deficiencies including but not limited to cracks in the concrete, soil erosion, non-bearing leveling nuts, loose anchor nuts, bent or distorted structural members, cracked welds, missing or loose hardware, and corrosion. Document any routine maintenance conducted onsite to resolve deficiencies.

If there are power lines resting on the support, or going in between support arms/trusses, document this in the "Support Inventory Comments" field in the Collector App.

If a support is not in the Collector App at the time of inspection, create the support within the Collector App.

Take photographs with a high-resolution camera of the foundation(s), supports, connections, sign attachments, and any deficiencies. Use digital calipers to show precise measurements. Enter the data into the ODOT Sign and Support or ITS Inventory Collector Application and assign an Overall Condition numeric rating.

If there are critical deficiencies that are deemed to be an emergency situation that requires immediate action to take a sign or support down, the notification to the ODOT District needs to occur while still on site. All other supports deemed critical should get a critical finding report and have it emailed to the District within 24 hours.

When inspecting each sign and DMS support, please add pole labels by marker pen, or by sticker label, whichever method is desired by the District. Follow the "Pole ID Preferences" sheet for District preferences. Labeling Methods:

Marker Pen Method: Use a black, extra-bold paint marker, McMaster-Carr Part #5040T11, Grainger Item#2F940, or approved equal, to hand-write the Support File Number (e.g., "SUPOXXXXXX" or "DEVOXXXXXX") in a vertical alignment 12" – 18" tall on the vertical post such that the bottom of the label is approximately 3.5 feet above the travelled way.

Sticker Label Method: 12"x12" sticker ([I-H25b](#)), with County-Route-Section and Support File Number below. Place the sticker such that the bottom of the label is approximately 3.5 feet above the travelled way. The District will provide the stickers and can be picked up at the District office. Contact the District main point of contact to confirm the availability of the stickers.

For each extrusheet sign attached to the support, locate and attempt to read the identification sticker from the shoulder using binoculars, high-definition cameras or other technology with

high powered zoom capabilities. If legible, add the visible installation date to the existing sign record in the Collector App in the "Installation Date" field if the field is NULL or blank.

On an as-needed basis, provide either a nighttime visual inspection or retroreflectivity measurements on overhead or ground mounted signs as determined by the Department. Retroreflectivity measurements shall be in accordance with ASTM E1709-16(22) *Standard Test Method for Measurement of Retroreflective Signs Using a Portable Retroreflectometer at a 0.2 Degree Observation Angle*. Enter the retroreflectivity measurements and the measurement date in the respective sign attribute fields in the ODOT Sign and Support Inventory Collector App. If a nighttime inspection is performed, state any visual defects in the "Sign Comments" field in the Collector App. Add the sign to the Collector App if it has not already been added.

Alternative signs and supports may be added to the inspection lists as needed by ODOT, or in replacement of supports that were removed and not inspected.

Consultant Requirements

Consultant shall be familiar with the documents, manuals and applications:

- Publication No. FHWA-NHI-20-999 *Ancillary Structures Inspection Reference Manual*
- Latest edition of the Ohio Manual of Uniform Traffic Control Devices (OMUTCD).
- Latest update to the ODOT Traffic Engineering Manual, Section 221-3, Overhead Sign Support Inspection.
- Latest version of the ODOT Sign and Support Inventory Collector Application and the accompanying User Manual.
- Latest version of the ODOT ITS Inventory Collector Application and the accompanying User Manual.

Consultant members shall meet the following qualifications:

- Project Manager/Technical Advisor
 - Registered Professional Engineer in the State of Ohio; and
 - 10 years combined experience in the design and inspection of ancillary sign structures and/or bridges.
- Inspection Team Leaders
 - Have five years structure inspection experience and have successfully completed an FHWA-approved comprehensive ancillary inspection training course; or
 - Be certified as a Level III or IV Bridge Safety Inspector under the National Society of Professional Engineer's program for National Certification in Engineering Technologies (NICET) and have successfully completed an FHWA-approved comprehensive ancillary inspection training course, or
 - Have bachelor's degree in engineering from a college or university accredited by or determined as substantially equivalent by the Accreditation Board for Engineering and Technology, successfully passed the National Council of Examiners for Engineering and Surveying Fundamentals of Engineering examination, have two years of structure inspection experience, and successfully completed an FHWA-approved comprehensive ancillary inspection training course; or

- Have associate's degree in engineering or engineering technology from a college or university accredited by or determined as substantially equivalent by the Accreditation Board for Engineering and Technology, four years of structure inspection experience, and successfully completed an FHWA-approved comprehensive ancillary inspection training course.

All subconsultants shall be selected on the Letter of Interest so that they can be approved as a subconsultant at the time of agreement.

Maintenance of Traffic

Use a contractor pre-qualified in Maintenance of Traffic to provide temporary traffic control in accordance with the OMUTCD Typical Applications for shoulder closures and ODOT Maintenance of Traffic (MT) Standard Construction Drawings for lane closures. Follow specifications in CMS Section 614 including use of Truck or Trailer-Mounted Attenuators (TMA).

If needed, only close lanes during allowable lane closure hours as determined by the District Work Zone Traffic Manager. Receive prior approval of all shoulder and lane closures from the District Work Zone Traffic Manager.

Perform the work in a safe manner that minimizes the disruption to traffic.

Work vehicles shall have yellow flashing beacons/strobes and appropriate markings. Perform the work from the shoulder or beyond the shoulder to the greatest extent possible.

Transportation, Meals and Overnight Accommodations

The Consultant is to provide their own vehicle(s). Contract unit of work will include mileage, meals, and overnight accommodations when necessary.

Task Deliverables

- As soon as possible but no later than 14 days after a complete inspection, enter the inspection data for each structure into the ODOT Sign and Support Inventory Collector Application, including the assignment of an Overall Condition numeric rating and all digital photographs of the structure.
- Biweekly, provide to the District and Central Office a spreadsheet log documenting the completed work including the following information:
 - District
 - County-Route-Section of Structure
 - Structure Identification Number (i.e., SUP0123456)
 - Device File Number (i.e., DEV0003864), If DMS support
 - Type of Work (i.e., Full Inspection, Partial Inspection, Data Entry)
 - Date of Work
 - Name of lead Inspector or Data Entry Clerk
- Biweekly, provide to the District and Central Office, a progress report showing the percentage of structures with completed inspections and data entry, by District and overall total.
- Monthly, provide to the District and Central Office a spreadsheet with all recommendations on which supports should be subject to further maintenance or inspection. The report should include the following information:

- District
- County-Route-Section of Structure
- Structure Identification Number (i.e., SUP0123456)
- Device File Number (i.e., DEV0003864), If DMS support
- Element name (e.g., Anchor Rod, etc. per FHWA NHI 20-999)
- Element condition rating (i.e., 0, 1, 2, 3 or 4 per FHWA NHI 20-999)
- Follow-up recommendation (e.g., perform hands-on inspection, ultrasonic testing, tighten loose bearing hardware, etc.)
- Repair priority (i.e., Critical, High or Low per FHWA NHI 20-999)

Responsibilities of Roadway Engineering

Roadway Engineering will provide the following information and services relative to the work to be performed by the Consultant.

- Collector Application accounts and training, if necessary
- List of sign support identification numbers and locations to be inspected
- Follow-up inspections of supports deemed to have critical elements by the Consultant