

Work Type Definition and Submittal Requirements

14.6 Signing Plan Design & Special Provisions

Work Type Definition

Pages 1-3 detail the work type definition. In order to become *pre-qualified* for this work type, please see the “Work Type Submittal Requirements” on pages 4-6.

I. Description

Signing plan design and special provisions includes a signing plan, special provisions, computations and an engineer’s cost estimate for all permanent highway signs. The design can be for a stand-alone sign replacement project or part of a highway construction project. Either type of plan set shall include in place signs and dates of installation (as verified by field visits) and all new signing. It will also document recommendations for replacing, removing, moving, and/or overlaying existing signs such that they meet all applicable MnDOT standards and policies. A complete signing plan includes:

- Title Sheet (if not tied to a construction plan)
- Estimated Quantities (Statement of Estimated Quantities, if not tied to a construction project)
- Data Sheets – tabulate all estimated quantities with exception of Type C, delineator and marker sign removals
- Utility listing (if not tied to a construction plan) – list all utilities within project limits
- Roadway Layouts – show all in place, remove, salvage/ install, furnish/install, etc.
- Sign Panel Layouts – show all new sign panel designs using SignCAD
- Placement Detail Sheets
- Structural Detail Sheets
- Cross Sections – for all new guide signs on Type A and Type OH sign structures
- DIV ST – special provisions not addressed in the MnDOT Standard Specifications for Construction

Signing Plan Design projects are categorized by level and include the following Project Types:

Level 1 – U-Channel Posts (Type C & D)

Production of signing plans incorporating ground mounted Type C and Type D signs on U-channel sign posts. This level may also include Type C and Type D signs on traffic signal mast arms, bridges and bride rails.

Level 2 – I-Beam Posts (Type A)

Production of signing plans incorporating large ground mounted guide signs on breakaway I-beam posts, including a cross section for each-I-beam sign.

Level 3 – Overhead Signs (Type OH)

Production of signing plans incorporating overhead signs mounted on a truss or bridge structure, including guardrail, median barrier or sign lighting as necessary, structural detail sheets for each bridge mounted sign structure and cross section for each overhead sign structure.

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II. Standards and Specifications

Standards and specifications required for a project under this work type may include the following:

- A. Signing plan assembled in accordance with MnDOT's sample signing plans (Freeway Interchanges and At Grade Intersections) to provide uniformity for bidders.
- B. Signing plan must be in accordance with the most current version of the following:
 - MN Manual on Uniform Traffic Control Devices (MN MUTCD)
 - MNDOT Traffic Engineering Manual
 - MnDOT Standard Specifications for Construction
 - Special Provisions Template (DIV ST)
 - MnDOT Standard Signs Manual
 - MnDOT Standard Signs Summary
 - MnDOT Standard Plates Manual
 - MnDOT Standard Plans Manual
 - MnDOT Guide Sign Design Manual
 - MnDOT Sign Plan Course Manual – At Grade Intersections
 - MnDOT Sign Plan Course Manual – Freeways
 - MnDOT CADD Data Standards (Sign Cell Library)
 - American Association of State Highway & Transportation Officials (AASHTO) Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals
 - National Cooperative Highway Research Program (NCHRP) 350
- C. Special Provisions (DIV ST) must be complete and accurate using the most current template.
- D. Gopher One Call to determine the public utilities located within the project area.
- E. Inspection of all Type A signs to ensure compliance with current installation requirements.

III. Provided By MnDOT

Information to be supplied by MnDOT for a project may include the following:

- A. Existing signing plans (based on old plans or district field sign inventory data).
- B. Most current Microstation geometric base files available of existing roadways and signing.
- C. Most current SignCAD files available of the existing sign panels.
- D. Most current ArcView shape file of the existing sign locations and attribute information.
- E. The Contractor will photo copy available files of existing signing plans for Type OH and Type A sign structures and panel designs that are not available electronically. These plans are located at the MnDOT Waters Edge facility in Roseville, MN.
- F. If field surveys are necessary, they will be completed by the State.
- G. Speed Zone documentation.

IV. Provided by Consultant

Deliverable to be supplied by the consultant for a project may include the following:

- A. Signing plan, special provisions, and cost estimates at 30%, 60%, 95% and 100% complete submittals as defined further by the Contract.
- B. All deliverables, unless otherwise specified, will be in both hard copy and electronic as defined further by the Contract.
- C. Supporting documentation including meeting minutes, inspection notes and engineering justifications.

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- D. SignCAD files for each new sign panel design.
- E. Computations for overhead sign structural steel quantities, OH sign structure design and Type A sign structure design.
- F. Quality Control Process requirements as defined further by the Contract.
- G. Utility Verification requirements as defined further by the Contract.

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Work Type Submittal Requirements

A consultant firm becomes pre-qualified based on the qualifications of the personnel that are employed by the firm and by meeting the demonstrated equipment or CADD requirements.

Key Personnel Requirements	
Minimum Number of Staff:	<ul style="list-style-type: none"> • At least one Civil Engineer, having demonstrated experience and training in the activities normally associated with this work. • Support staff, which may include qualified technical staff having demonstrated experience and training in the activities normally associated with this work and who may perform data collection, sign panel designs in SignCAD, computations, plan production, special provisions and cost estimates. No minimum number is required but experience may be used toward firm's experience.
Professional Certification/Licensure:	<ul style="list-style-type: none"> • At least one engineer, meeting the experience requirements, must be a licensed Civil Engineer with the Minnesota State Board of Architecture, Engineering, Land Surveying, Landscape Architecture, Geoscience and Interior Design (AELSLAGID).
Work Type Submittal Requirements*	
<p>I. Resume and Relevant Project Experience Form (Form PQ1)</p> <p style="text-align: center;"><i>Submit in Word format</i></p>	<p>A. Complete Parts 1, 1A, 2 and 3 of Form PQ1</p> <p><u>Part 1:</u> Fill out general information, names of personnel and specify which Level of pre-qualification is sought.</p> <p><u>Part 1A:</u> Fill out Relevant Project Experience for each staff member.</p> <p><u>Part 2:</u> Project Examples listed must correlate to those described below in "Project Example Requirements."</p> <p><u>Part 3:</u> List each staff member's applicable training courses and dates taken.</p>
<p>II. Project Example Requirements</p> <p style="text-align: center;"><i>Submit in PDF format</i></p>	<p>A. <u>General Requirements:</u></p> <p>For each level, a minimum of two complete signing plans and special provisions completed within the prior seven years must be submitted per Professional Engineer submitting for pre-qualification. Each plan set may meet more than one level. If needed, additional plan sets and special provisions may be submitted in order to fully meet the minimum requirements listed below for each level. Each plan set must be clearly labeled as to which Level(s) it applies to.</p> <p>The two plan sets submitted must show typical roadway signing for a freeway, expressway or conventional roadway including interchange signing and/or at grade intersection signing and may include mast arm signing. The plan should correctly show in place signs, sign removals, new signs to be installed and signs to be salvage and installed.</p>

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	<p>The signing plans and special provisions must have been produced in accordance with MnDOT signing plan design standards, either for MnDOT contract lettings or in accordance with MnDOT signing plan requirements for contract letting by others. The signing plans and special provisions must be supervised and signed by the Professional Engineer submitting for pre-qualification.</p> <p>Support staff listed under Key Personnel shall indicate Example Projects and corresponding roles with emphasis on plan development and sign panel design.</p> <p><u>Specific Level Requirements</u> In order to pre-qualify for each level listed below the plans submitted in combination must meet the minimum requirements.</p> <p>Level 1 – Type C and D signs (U-channel sign posts) Correct placement for a minimum of five different Type D signs (mast arm signs may only account for two of the five designs). Correct sign panel designs for a minimum of five Type D signs. Correct placement for a minimum of ten Type C signs (standing, stopping and parking restriction signs excluded). Complete and accurate special provisions (DIV ST).</p> <p>Level 2 – Type A signs (I-beams) Correct placement, structural design, cross section design and sign panel design of a minimum of two Type A signs. One plan set must include freeway or expressway interchange signing. Complete and accurate special provisions (DIV ST).</p> <p>Level 3 – Type OH Signs Correct placement, structural design, cross section design and sign panel design of a minimum of two Type OH signs. One of the Type OH signs may be a bridge mounted sign. One plan set must include freeway or expressway interchange signing. Complete and accurate special provisions (DIV ST).</p> <p><i>Note: If submitting for more than one level, the two sign panel designs for Type A signs and the two sign panel designs for Type OH signs may count toward the five Type D sign panel designs required under Level 1.</i></p> <p><u>Submittals are to include only the following of a plan set being submitted: Title sheet, Statement of Estimated Quantities, and only the other sheets pertaining to the signing portion of the plan (including signal mast arms signs).</u></p>
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	B. Experience with Microstation computer aided drafting software (CADD) and current version of Sign CAD guide sign design program is required, as documented by a signed statement on Firm Letterhead.
III. Proof of Professional Certification/Licensure <i>Submit in PDF format</i>	A. Provide a current copy of the applicable Professional Certification/Licensure.

***Work Type Submittal Instructions:**
 Create a CD or flash drive that includes the following individual files or folders in this order:

- I. Resume and Relevant Project Experience Form (Form PQ1)
- II. Project Example Requirements (this should be a folder that includes individual files clearly named according to Part 2 of the PQ1)
- III. Proof of Professional Certification/Licensure

**Each file should be saved in the format identified above.
 Submit 5 copies of the CD or flash drive.**

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