Work Type Definition:
Major Roadway Geometric Layouts, Highway Design

I. Minimum requirements:

The work to be under the direct supervision of a Minnesota Professional Civil Engineer.

II. Description

This work type includes preliminary design plan layouts for rural and urban roadways of all functional classifications. Geometric layout preparation includes but is not limited to: development of a base map; design study reports; horizontal and vertical alignments; intersections and interchanges, including Interchange modification requests and engineering and operational analysis report; noise walls, retaining walls, traffic barriers, and construction staging. Consideration must be given to pavements, culverts, ponding, storm and sanitary sewers, utilities, erosion control and earthwork.

Geometric layout preparation projects are categorized by level and include the following Project Types:

A. Level 1 projects include design for the following Project Types in the categories Interstate and Non-Interstate National Highway System (NHS):

1. Major construction
    a. Freeways, High Speed, Multi-Lane Facilities and Class 1 Rest Areas
2. Major reconstruction
    a. Freeways, High Speed, Multi-Lane Facilities and Class 1 Rest Areas
3. Design exceptions (exception only)
4. Major changes in freeway access

B. Level 2 Projects include design for the following project types in all categories except Interstate and Non-Interstate NHS:

1. Raised channelization
2. Change in number of lanes
    a. Addition
    b. 3 lane section
    c. 5 lane section
3. Major intersection revisions
4. Moderate changes in access:

III. Standards and specifications

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

A. All work completed must be in accordance with the current American Association of State Highway & Transportation Officials (AASHTO) Policy on Geometric Design of Highways and Streets (also known as The Green Book), current AASHTO Roadside Design Guide, current MnDOT Road Design Manual, current Highway Capacity Manual, and Federal Highway Administration (FHWA) and Hennepin County design policies, procedures, practices and standards.

B. The layouts must meet the form and content requirements listed in the Highway Project Development Process (HPDP) Handbook.

C. The layout must consider the various inputs during the development process, and incorporate where appropriate, and must also include a history that documents the development process and the design influences and decisions.

D. All work completed must meet Hennepin County's CADD Standards, including the use of InRoads™.

IV. **Provided by Hennepin County**
Information to be supplied by Hennepin County for a project under this work type may include the following:

A. All project-specific documents and studies including but not necessarily limited to Project Scoping Documents and Scoping Decision Documents, following the MnDOT Highway Project Development Process Handbook (HPDP) Guidance.

V. **Provided by consultant**
Deliverables to be supplied by the consultant for a project under this work type may include the following:

A. Hennepin County staff approved layout, FHWA approved layouts when required by the Stewardship Plan, subsequent municipal approved layout, and required reports including, for the Level 1 Layouts that require it, the Engineering and Operational Analysis Report. The Engineering and Operational Analysis is a report containing sufficient information to allow the FHWA to independently evaluate that all pertinent factors and alternatives have been appropriately considered.

B. New or modified access to the Interstate system, regardless of funding source, will require Interstate access approval by FHWA. Approval of Interstate access requests is required by federal regulations at Non-regulatory Supplement (NS) 23 CFR 630C, item #3.

Work Type Definition: Highway Design

I. Description

Highway design plans for rural and urban roadways of all functional classifications. Highway design includes but is not limited to: horizontal and vertical alignments, super elevations, intersections, interchanges, pavements, culverts, ponding, storm and sanitary sewers, utilities, erosion control, noise walls, retaining walls, cross sections, traffic barriers, earthwork, and construction staging, as well as any other design features that are associated with the design areas identified.

Work Type Definition:
Major Roadway Geometric Layouts, Highway Design

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

A. Level 1:

1. Major construction

    a. Freeways and multi-lane facilities

2. Major reconstruction

    a. Freeways and multi-lane facilities

3. Major changes in freeway access

B. Level 2:

1. Raised channelization

2. Change in number of lanes

3. Major intersection revisions

4. Moderate changes in access

II. Standards and specifications

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

A. All work completed must be in accordance with the current American Association of State Highway & Transportation Officials (AASHTO) Policy on Geometric Design of Highways and Streets (also known as The Green Book), current AASHTO Roadside Design Guide, current Mn/DOT Road Design Manual, current Highway Capacity Manual, and Federal Highway Administration (FHWA) and Mn/DOT design policies, procedures, practices and standards.

B. All work completed must meet Hennepin County CADD Standards, including the use of INROADS™.

Work Type Definition:
Major Roadway Geometric Layouts, Highway Design

III. Provided by consultant

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

A. Deliverables include a complete and accurate set(s) of highway design plans to construct a project that fulfills the department's intended purpose. Deliverables may include, but are not limited to some or all of the following:

1. Plans, produced using Hennepin County CADD Standards;
2. Special provisions;
3. Estimates;
4. Reports;
5. Feasibility and justification studies, including all related calculations.

B. Consultant deliverables must include a documented Quality Assurance/Quality Control (QA/QC) plan, and QA/QC reviews of each submittal, including addressing comments from previous reviews, i.e. 30%, 60%, 90%, and 100% reviews.