REVISION DATE 10/30/19

30-OCT-2019

Sample Plan

General Notes:

All of the following is intended to be a guide and/or reminder for designers:

See Technical Manual 5-292.600 for methods and techniques of good plan preparation (information required on title sheet, estimate sheet, etc.).

CADD data to be organized in accordance with CADD Data Standards. These standards specify level assignments, file set-up, file naming conventions, symbology guidelines, etc. The CADD Data Standards also has a Geopak Standard Specifications section as well as standard font, line style, point numbering and cell examples. Questions or comments regarding CADD Data Standards should be directed to the CADD Standards Manager in the CAES Office. The CADD Data Standards is available as an electronic document. It's web-site address is: http://www.dot.state.mn.us/caes/cadd/.

Plans using State Aid funds are subject to special requirements as addressed in the Plan, Design, Preparation, and Documentation Guide for MnDOT, (most current date). Contact the Metro State Aid Office early to determine if a State Aid route is involved. If so, contact the City (and County, if applicable) to determine whether they intend to use State Aid funds for any cooperative agreement items. If State Aid funds are used, the plans are subject to the guidelines mentioned above.

MnDOT manuals and the Specifications book are primary sources of Transportation Systems design information. Secondary sources are the AASHTO's "A Policy on Geometric Design of Highways and Streets" and the Roadside Design Guide.

Show sheet titles in lower right hand corner of sheets.

Plan sheet layout should coincide with the sheet layouts for other parts of the plan.

Check the soils letter to see that all recommendations have been incorporated into the design.

When possible, notes should be located on the right side of each plan sheet.

If a note is required on a sheet to clarify something on that sheet, all of the information should be included on that same sheet. Try to avoid sending the reader to another part of the plan for more information. Keep all general notes on one page. If a note refers you to a second note, the second note should not refer you to a third.

Cross reference plan sheets to assist in locating information within the plan. (For example, add footnotes on Construction Plan Sheets to show where details are located and add footnotes on Details to show where these details apply.)

Right-of-way lines are needed. The contractor needs to know, for example, where he can park his equipment and store supplies.

Section lines, 1/4 lines, 1/16 lines, etc., are not needed.

Back-of-curb lines are not needed, except on large scale details.

Generally, insignificant items need not be shown beyond 50 feet of right-of-way.

Combine as many topics as possible on one sheet (i.e., inplace topofraphy, utilities, superelevation

Minimum scale should be 1" = 100' on plan sheets. All scales shown should be bar scales.

Mailbox Supports: See Standard Plate 9350. It is recommended that a letter be sent out to impacted property owners notifying them that their mailbox support is to be updated to current standards.

Construction limits must be shown on at least one set of plan sheets.

Before designers start a job they should make a field walk of the entire job. They also could look look at the most recent video log to get an idea of existing field conditions. There is a Network Videolog Viewer Program available for the Metro area.

If information is covered by the Specification Book or the Special Provisions, do not repeat it in the plan. Some examples that do not need to be in the plan because the Specification Book covers it are seed mixture rates, mulch rates, hydraulic soils stabilizer, compaction requirements for most materials, etc.

Designers are encouraged to take photographs of areas where questions are likely. Be sure to log photos carefully.

Before the phrase "as directed by the engineer" is used with the plan, several questions should be asked:

1. Can the contractor determine a bid price from the information shown?
2. Can MnDOT enforce the phrase without additional cost to the state?
3. Is the phrase really necessary?
4. Have you explained well enough what the contractor's responsibilities are?

Consider minimizing the usage of the phrase "as directed by the engineer" whenever possible. If still considering using the phrase, then contact the Construction Project Manager for their input.

Consider the following special needs :

Special Needs	Main Point of Contact
House and Mobile Home Moving Routes	Permits Office; http://lhub.metrodesign/technical.html
Atmospheric Sensors in Roadways	South Regional Maintenance Superintendent
Signal Loop Detectors in Roadways	Metro Signal Operations Engineer
Counter Loop Detectors in Roadways	Traffic Data Analysis Office
Ramp Meter Loop Detectors in Roadways	TMC Operations Engineer
Weigh in Motion Scales	Metro Maintenance Engineer
MSE and RSS Walls	http://lhub.metrodesign/technical.html
De-icing on Bridges	Metro Maintenance Engineer

Match lines and/or overlapping plan sheets may be used to show adjacent sheet locations if deemed necessary for clarity by the designer.

Consider snow storage and snow drift and discuss with Maintenance. For snow drift, refer to Chapter 15 of the Design Scene.

Initials/Signature Blocks:

Drawn By: Box - The individual assigned primary responsibility for assembling the plan sheet should initial this line, indicating that he/she has reviewed and addressed all items on the Narrative sheet, referenced the appropriate documents in preparing the sheet (as noted on the Narrative sheet), and has completed the Checklist.

Checked By: Box - If another individual is asked to review the general contents of the sheet, he or she should initial here.

Engineer's signature box - By signing the sheet, the engineer is certifying that this sheet was prepared by him or her (or under their direct supervision) and that they are a duly licensed Professional Engineer under the laws of the State of Minnesota.

All sheets should have a plot date indicated in the left hand margin. This date should be revised with each revised plot.

The first sheet of any set of sheets prepared by another functional unit or a Designer other than the one designated on the Title Sheet requires a signature title block. For an example, see drainage profile section of this Sample Plan.

There are three acceptable options (in preferred order) for showing legends:

1. Sheet specific legend - the legend goes on every sheet and information pertains only to the sheet it is on.
2. Generic legend on each sheet - each sheet has exactly the same legend on every sheet of the set. If any of the legends has an extra item then they are no longer generic legends.

GENERAL NOTES

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General Notes cont.:

Technical Memorandums:

No. 01-07-TS-04 Disclaimer Statement

Miscellaneous:

http:\lhub.metrodesign/technicalguidance.html	Certifying Construction Plans
http:\lhub.metrodesign/technicalguidance.html	Design Bidability Checklist
http:\lhub.metrodesign/technicalguidance.html	Maintenance Concerns In Design

MNDOT Point Numbering System

Point Numbers	Information at the point	Status of feature at the point
0001-0599	Horizontal control points	Existing
0600-0899	Photo control	Existing
0900-0999	Bench marks	Existing
1000-1999	Alignment points	Proposed alignments
2000-2999	Alignment points	Existing alignments
3000-3999	Property & R/W	Proposed property & R/W lines
4000-4999	Property & R/W	Existing property & R/W lines
5000-5999	Utilities	Proposed utilities
6000-6999	Utilities	Existing utilities
7000-7999	Soil boring holes	Existing (prior to construction)
7000-7999	Bridge working points	Proposed (during & after construction)
8000-8999	Map annotation/Topog	Existing
9000-9999	Vertical elevation points	Existing
>10,000	Conventional cross sections	Existing

Use alpha numeric point numbers after the original series of point numbers have been depleted. (i.e., R1000...R1999. Geopak requires the alpha character to be a prefix only.)

Geometric Design Training Lessons:

Thirty four video lessons for Geometric Design Training Lessons are presently available for viewing on-line through the Metro Design Web Site at \Office Admin\Training\Geometric Training Lessons. They are:

Acceleration and Deceleration Lane Design
At-Grade Intersection Design
Clear Zones, Part I: Introduction to the Clear Zone Concept
Clear Zones, Part II: Identifying and Treating Obstacles
Clear Zones, Part III: Breakaway Devices and Roadside Barriers
Clear Zones, Part IV: Median Barriers
Clear Zones, Part V: Barrier End Treatments, Crash Cushions and Bridge Railings
Computing and Tabaulating Quantities
Computing Drainage and Concrete Paving Quantities
Design Speed and Capacity
Grade Separated Intersections and Interchanges
Horizontal Alignment: Physical Control Features & Sight Distance
Independent Alignment and Intersection Sight Distance
Introduction to Superelevation Theory
Introduction to the Horizontal Alignment Process
Introduction to the Vertical Alignment Design Process
Introduction to Computing Quantities
Reading and Using Contours
Station Equations Along a Single Centerline
Station Equations Along Multiple Centerlines
Superelevation 2: Practical Application
Superelevation 3: Special Applications
Tabulating and Balancing Earthwork Quantities
Turning Movements at Intersections
Understanding and Computing Earthwork Quantities
Understanding and Computing Tapers
Understanding Cross Sections
Understanding Stations and Stationing
Understanding 3 Views: Plan, Profile, Cross Section
Understanding Typical Sections
Vertical Alignment: Balancing Design Options
Vertical Alignment: Climbing Lanes and Escape Lanes
Vertical Alignment: Physical Control Features
Vertical Alignment: Sight Distance

TO ACCESS THE LATEST TECHNICAL INFORMATION PERTAINING TO DESIGN WORK GO TO:
HTTP://WWW.DOT.STATE.MN.US
USE "A TO Z" TO FIND THE MOST CURRENT TECHNICAL MEMORANDUMS, DESIGN SCENES, STANDARD PLATES, STANDARD PLANS, TRNS*PORT LIST, AND OTHER INFORMATION

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