City of Hermantown, Minnesota

Public Works Department

Standard Specifications for Construction

2022 Edition

APPENDIX D

Roadway Development Requirements

HERMANTOWN ROADWAY DEVELOPMENT REQUIREMENTS

GENERAL REQUIREMENTS

The 2020 edition of the Minnesota Department of Transportation "Standard Specifications for Construction" and all its supplements shall apply for the road construction and the 2022 Standard Specifications for Construction for the City of Hermantown.

The requirements noted herein are minimum requirements. Specific projects may require more stringent standards be applied because of the specific situation. A checklist is provided to assist the developer or their engineer.

These standards are created as guidelines by which all development within the city that will eventually be owned by the city must be designed and constructed. In situations where other standards apply such as Mn/DOT state aid roadways, those standards supersede these. On any item where these standards are more stringent than those, these city standards will apply for that item unless otherwise approved by the City Engineer.

All costs incurred by the city regarding the project shall be reimbursed by the developer.

DEFINITIONS

Local (minor) street: generally a residential street servicing the neighborhood. Consult

City staff for all other roads.

DESIGN CRITERIA

Refer to the Standard Detail Drawings in Appendix A. The "Typical Urban Street Section STR-3" is to be used unless specifically approved in writing by the City Engineer and approved by the Hermantown City Council that the "Typical Rural Street Bituminous Section STR-4 or Typical Rural Street Gravel Section STR-5" is appropriate.

SUBSURFACE EVALUATION

Soil borings shall be completed as part of the design of the project. These are to be evaluated by a qualified professional engineer with their recommendations in writing. Borings shall be located at intervals along the length of the project to best identify characteristics of the inplace material including any changes anticipated in the conditions along the project length. A sub-soil report and geotechnical recommendation shall be submitted to the Hermantown City Engineer. In the plan review, the City Engineer will check for compliance of the geotechnical recommendation.

PLANS

A checklist is enclosed herein for general assistance.

A set of Record Drawings are to be submitted to the city at the end of the project including installed utilities, prior to city acceptance of the project. These plans shall include any modifications implemented during construction.

Both a hard copy of the Record Drawings and an electronic AutoCAD format shall become the ownership of the city prior to acceptance of the roadway.

TYPICAL SECTIONS AND DETAILS

Typical sections that indicate minimum acceptable materials and thicknesses are included herein. The engineer's calculations should verify that the design criteria have been met with the typical section or that typical section had to be increased.

All roadways shall be surfaced with either bituminous or concrete surfacing as noted in the typical sections, except a rural design approved by the Planning & Zoning Commission, City Engineer, and City Council.

SIDEWALKS

The plans shall provide grading for a future four-foot sidewalk on both sides for urban section design. The concrete sidewalk need not be installed during initial construction, but this allows the city and residents the ability to construct concrete sidewalk in the future in an economical manner.

RIGHT OF WAY

The plans are to show the construction limits of the project. If additional right of way beyond that shown on the original plat is required, it is the developer's responsibility to provide permanent right of way ownership to the city.

SPECIAL CONSTRUCTION ISSUES

All culverts across the public roadway shall be 15 inches or larger. Entrance culverts shall be 12 inches or larger. The City Engineer will review drainage report and culvert sizing to determine if the size is sufficient.

Cul-de-sacs shall be designed with an island. The minimum radius shall be 50 feet with right-of—way of 65 feet. Refer to "typical Cul-de-Sac Section S-4" for dimensions.

A street light shall be installed at any intersection where a collector street intersects another collector or an arterial street. The light type shall meet Minnesota Power specifications and shall be approved by the city.

GEOMETRIC DESIGN STANDARDS - URBAN

	Width	Design Speed	Structural Design Strength
Local Street	28’ (2—12—12—2)	30-40	9 ton

PLAN REVIEW CHECKLIST

A complete set of street plans must follow a specified order; but may vary in number of sheets depending on the length and complexity of the individual project. Each plan should contain:

1. Title Sheet-
2. General Layout Sheet
3. Estimated Quantities
4. Tabulation of Individual Quantities
5. Typical Sections
6. Construction Details (Special Details)
7. Plan Sheet of Existing Topography
8. Plan and Profile Sheets
9. Erosion Control Plan
10. Traffic Control Plan
11. Cross—Section Sheets

Notes:

1. Standard size sheets 11”x 17”.
2. All original sheets (or mylar) must be made so that copies are legible.
3. Uniform inked lettering no smaller than Leroy 120 (1/8 inch) on full size plans.

PRELIMINARY D E S I G N

	CHECKLIST	COMMENTS/DESCRIPTION
A. Soils/Sub Surface Exploration		
Field Work — Borings		
Report with Recommendations		
B. Drainage		
1) Hydrologic Analysis:		
• Type of Method or Model		
• Recommendations		
2) Hydraulic Design:		
• Data Analysis		
• Study		
• Recommendations		
3) Stormwater Controls:		
• Storm Sewer		
• Ditch		
• Storm Water Ponds		
4) SWPPP		
C. Sanitary Sewers		
• Submit Permit Application to City Administrator or City Engineer for Review and Approval		

D. Bid Documents		
• Plans (see Checklist)		
• Specifications		
• Engineer's Cost Estimate		
• Construction Observation and Testing Program		

TITLE SHEET

	CHECKLIST	COMMENTS/DESCRIPTION
Design designation, information ADT, Spec., Etc.		
Location of project information		
Length of project exception noted		
Index map information (Des., scale, north arrow begin and end proj. sta.)		
Index of sheets		
Type of work to be done (curb & gutter)		
All necessary signature blocks		
Project numbers where needed		
"This plan contains__sheets"		
HEADING City of Hermantown Public Works Department Construction Plan For:		
Show section, township and range information		
Governing specifications		

ESTIMATED OUANT1TY AND STANDARD PLATES

	CHECKLIST	COMMENTS/DESCRIPTION
Item and description from latest spec book or supplement		
Specify basis of measure for borrow and granular items		
Use of construction notes		
Index to tabulation charts		
Correct nomenclature and applicability of standard plates		
Quantities - Tabulations equal to pay items		

Note: “These Standard Plates as Approved by the FHWA Shall Apply"

TYPICAL SECTION (S) SHEET

	CHECKLIST	COMMENTS/DESCRIPTION
Show profile grade location		
Show additional sections for shoulders, swamp, turn lanes, rock, etc.		
Scale shown		

TABULATION SHEETS

	CHECKLIST	COMMENTS/DESCRIPTION
Index to tabulation charts		
Tabulations = pay item		
Spec. No. & description match SEQ		

TRAFFIC CONTROL SHEET

The traffic control plan shall be in accordance to the current Minnesota Manual on Uniform Traffic Control Devices and the Field Manual. The traffic control plan shall be submitted to the Hermantown City Engineer for review and approval.

PLAN AND PROFILE SHEETS

	CHECKLIST	COMMENTS/DESCRIPTION
Municipal R.O.W. Easements, etc.		
Temporary easements		
Section corner, 1/4 corners, etc.		
City monuments		
North arrows		
Equations, street alignment		
Construction center line or reference line		
Misc. or private utilities Overhead/Underground • Minnesota Power • Qwest • MediaCom • Aquila • Hermantown Public Utilities • City of Duluth Comfort Systems • WLSSD		
Alignment plan or tabulation		
Azimuths or bearings		
Existing topography		
Hydraulic data		
Creeks and pipe over 48”		
Begin and end construction		
Culverts – Size and direction of flow		

Road and entrance radii		
Curve data		
Wetlands: description including type, size, etc.		
Sanitary sewers, existing and proposed		
Storm sewers, existing and proposed		
Road intersection data		
Ditches, location, direction of flow		
Ditch blocks (Overflow structures)		
Scale		
Erosion Control Plan		
Bench Marks		
Property owners		
House address		
Show profile grades		
Show culverts at centerline		
Show subcuts, swamp and rock depths		
Show culvert treatment		
Vertical curve information		

CROSS SECTION SHEETS

	CHECKLIST	COMMENTS/DESCRIPTION
Show scale		
Label equations, survey and construction centerline, etc.	_____	_____
Show beginning and end construction	_____	_____
Show inplace utilities	_____	_____
Show new utility construction CB's M.H., pipe	_____	_____
Show shoulder slope	_____	_____
Show R.O.W. and construction Easements	_____	_____
Sections on all drives & label slope	_____	_____
Sections minimum of 50 feet	_____	_____
Earthwork balance	_____	_____