ENGINEERING CODE

FOR SUBDIVISION DEVELOPMENT

OF
MEDINA COUNTY, OHIO

BOARD OF MEDINA COUNTY COMMISSIONERS

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Adopted by Resolution Dated October 13, 1998

Township Road Resolutions
Updated as of 9-25-02

ABSTRACT

The development process is such that many people and property may be adversely affected from land undergoing development. Development that has not been properly designed may cause considerable economic damage to individuals, the general public and governmental agencies involved.

In order to insure the safety and welfare of the general public of Medina County many individuals and groups participated in meetings and general discussions held by the Board of County Commissioners to form the guidelines set forth in this set of standards.

This "Code" has been provided in hope that it will encourage technically-sound, properly-engineered and imaginatively-designed land development. The "Code" has been written to permit the future development of land in Medina County in keeping with the expressed desires and objectives of the citizens of Medina County and the policies established by the elected officials of Medina County.

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ARTICLE 1

GENERAL CONSIDERATION

SECTION

100 OFFICIAL NAME

The official name of these rules, regulations, and standard specifications shall be, ENGINEERING CODE FOR SUBDIVISION DEVELOPMENT OF MEDINA COUNTY, OHIO, sometimes hereinafter referred to as "these Regulations."

101 PURPOSE

The purpose of these rules and regulations as adopted by the Medina County Board of Commissioners, hereinafter referred to as the COUNTY COMMISSIONERS, is to provide standard construction specifications for subdivision development in Medina County, Ohio, and to define the minimum requirements for surveying, engineering and construction as applied to land development.

102 AUTHORITY

The COUNTY COMMISSIONERS are authorized to adopt general rules and regulations setting standards and requiring and securing the construction of improvements shown on the plats and plans required by Section 711.05, 711.09, and 711.10 of the Ohio Revised Code under Section 711.101.

103 JURISDICTION

These Regulations shall be applicable to all subdivisions hereinafter made of land located within the unincorporated areas of Medina County.

104 ADMINISTRATION

These Regulations shall be administered as specified herein and by Article 6.

105 INTERPRETATION

The requirements as set forth in these Regulations shall be construed to be minimum.

106 ADOPTION

These Regulations shall become effective after the necessary public hearing and adoption by the COUNTY COMMISSIONERS in accordance with Chapter 711.101 of the Ohio Revised Code.

107 AMENDMENT

These Regulations may be amended in accordance with the same procedure as stated in Section 106 of these Regulations.

108 RELATION TO OTHER LAWS

The provisions of these Regulations shall supplement any and all laws of the State of Ohio, resolutions of the County, or any and all rules and regulations promulgated by authority of such law or resolution relating to the purpose and scope of these Regulations.

109 REVIEW OF REGULATIONS

To keep up with changes in technology and the development process, these Regulations shall be reviewed at five-year intervals after adoption, or more often if warranted by experience.

ARTICLE 2

ENGINEERING DESIGN STANDARDS

SECTION

200 PURPOSE

The following design standards shall control the manner in which the improvements within developments are designed for construction. These standards are required to insure the safety and welfare of the general public and are minimum standards.

If found necessary by the County Engineer, the Board of Medina County Commissioners may require more stringent standards than those required herein.

201 STREET DESIGN

A. Street Classification

Street classification is the designation of streets according to function and volume of traffic. Each classification is described by Section 502,B of the Medina County Subdivision Regulations, Planning portion, and the volume of traffic of each classification shall be as in Table 200/2, "Minimum Street Standards," page 12 of these Regulations.

B. Traffic Expansion Factor

The historical rate of population growth and the increase in travel per capita within Medina County has varied greatly over the last 20 years. Therefore, the traffic count on any street being designed within Medina County except streets not affected by through traffic, shall be expanded for a 20-year growth period using a factor of 2.5 percent per year in areas without central sewer and water and 3.5 percent per year within areas where central sewer and water will be available within the design year period.

C. Vehicle Demand Factor

An average daily traffic (ADT) demand for street design shall be based on ten (10) vehicle trips per dwelling unit per day in determining street classification. Additional vehicle demand due to other related factors such as commercial, industrial, recreation and school facilities must also be taken into account when determining vehicle demands.

D. Design Speeds

Design features shall be consistent with a design speed selected as appropriate for the conditions and type of street. The design speeds shown in Table 200/2 shall be used.

E. Right-of-Way Width

The right-of-way width for all streets shall be as shown in Table 200/2, "Minimum Street Standards," or as required by the Planning Commission. The street right-of-way shall be clear of all obstructions for its full width unless the County Engineer finds that any obstructions left within the right-of-way will not interfere with the general traveling public of the County.

F. Gradient

The gradient for all streets shall be as shown in Table 200/2, "Minimum Street Standards," by classification except where other grades are approved by the County Engineer.

G. Vertical Alignment

Profile grades shall be connected by vertical curves to provide adequate stopping sight distance for the required design speed for each type of street. To determine the minimum length of curve requirements, multiply the algebraic difference in grades by the coefficient "K." For "K" values, see Table 200/1, "Minimum Sight Distance." Stub street profiles should reasonably accommodate future extension into adjacent properties.

TABLE 200/1

MINIMUM SIGHT DISTANCE IN FEET

Design Speed mph	20	25	30	35	40	45	50	55
Stopping Sight Distance* - feet	125	150	200	225	275	325	400	450
"K" Value for: **								
Crest Vertical Curve	10	20	30	40	60	80	120	150
Sag Vertical Curve	20	25	40	50	60	70	90	100

NOTE: *Minimum stopping sight distances as shown are for height of eye at 3.50 feet and height of object at 0.5 feet.

** K Value is a coefficient by which the algebraic difference of grade may be multiplied to determine the length in feet of the vertical curve which will provide minimum sight distance.

H. Horizontal Alignment

Sudden changes between curves of widely different radii or between long tangents and sharp curves shall be avoided. For the maximum curvature for different design speeds, see Table 200/2, "Minimum Street Standards." Where possible, a tangent of at least 100 feet shall be introduced between reverse curves on freeway, collector, commercial and industrial streets and at least 50 feet on principal and minor residential streets.

I. Pavement Width

The pavement width for each type of street, based on traffic and type of use, shall be as shown in Table 200/2. These widths shall be considered as the minimum width allowed.

J. Graded Shoulders

Minimum width of graded shoulder for various traffic volumes and design speed shall be as shown in Appendix A, Figures 1 through 9. Shoulder width is measured from the edge of pavement to the point where the shoulder intersects the side slope. Where guardrail posts are used, the shoulder width shall be increased by 2 feet.

TABLE 200/2

MINIMUM STREET STANDARDS

CLASSIFICATION	Design ADT Range	Design Speed	Right-of-way Width	Grade		Vertical Alignment		Horizontal Alignment Min. Radius	Pavement Width	Shoulder Type
				Max.	Min.	Crest	Sag			
Freeway Principal Afterial Minor Arterial	6000 & over 5000 & over	All design standards for these thoroughfares shall be based on the traffic requirements of the section under study and the type of build-up along the design section. These standards shall be determined by the County Engineer after a complete study has been made of the project.								
Principal Collector Urban Rural	2000 to 4000	 40 50	 80 80	 7 7	 0.5 0.5	 60 120	 60 90	 700 830	 34 B/B 24 E/E	 Turf Paved
Minor Collector Urban Rural	1000 to 2000	 35 45	 70 70	 8 8	 0.5 0.5	 40 80	 50 70	 500 700	 27 B/B 22 E/E	 Turf Turf
Principal Residential Urban Rural		 30 40	 60 60	 10 10	 0.5 0.5	 30 60	 40 60	 300 510	 25 B/B 22 E/E	 Turf Turf
Minor Residential Urban Rural* Rural		 20 *25 35	 60 60 60	 10 10 10	 0.5 0.5 0.5	 10 20 40	 20 25 50	 200 300 400	 25 B/B 20 E/E 20 E/E	 Turf Turf Turf
Commercial and Industrial		40	70	6	0.5	60	60	700	34 B/B	Turf

NOTES: Urban densities include both urban and suburban densities.
B/B - Pavement width is from back of curb to back of curb.
E/E - Pavement width is from edge of pavement to edge of pavement.
* Use of this design speed is subject to Township approval.

K. Side Slopes

Side Slopes shall be as shown in the Typical Sections, Appendix A, Figures 1 through 9.

L. Parking

Parallel parking on one side of a street where curb and gutter is required has been provided for in the minimum pavement widths in Table 200/2. Conditions of lot size and intensity of development may require additional on-street parking. On-street parking lanes in residential areas will be at least 8 feet in width and in multiple family residential, commercial, and industrial area parking lanes will be at least 10 feet. The parking lane width may include the gutter pan as part of the required width.

M. Improvements to Existing Streets

When there is development along an existing street or roadway which is included in the Official Thoroughfare Plan, the developer shall be responsible for improvements to the right-of-way and the installation of storm drainage improvements required by these Regulations on his side of the street. Required improvements shall also include adjustments to existing pavement when required by the County Engineer. Where sight distance or other engineering requirements make it imperative, the pavement and drainage adjustment responsibility shall include the replacement of the entire existing system on both sides to insure the safety and welfare of the general public.

N. Design Standards for Common Drives/Private Streets

The following design standards are developed as minimum standards for the purpose of serving residential development. Where private streets are proposed for commercial, industrial, and other uses, development of appropriate design standards shall be done on a case by case basis, and shall be approved by the County Engineer.

Construction drawings for private streets or common access drives shall be prepared by a professional engineer licensed in the State of Ohio.

Common Drive Minimum Standards for Residential Development

1. Drives serving two or more residences shall be twelve (12) feet in width and constructed over a compacted aggregate base of ten (10) inches.
2. Driveway shall not contain a grade exceeding twelve (12) percent at any point over its length.
3. Minimum width of the common access easement shall be fifty (50) feet.
4. Drive surface or toe of fill slopes shall be a minimum of ten (10) feet from the access easement boundaries.

5. All trees, overhanging branches or other obstructions to the free passage of public safety vehicles shall be removed to a distance of six (6) feet beyond the edge of each side of the drive surface.
6. Embankment fills shall provide for a five (5) foot wide berm along each side of the access drive, vertical slopes on the fill shall be no steeper than two to one (2:1).
7. Drainage swales shall be provided along each side of the access drive to provide positive drainage.
8. Culverts or appropriate drainage structures shall be designed and installed to convey watercourses under the access drive. Design criteria shall conform to the Medina County Stormwater Management and Sediment Control Rules and Regulations.
9. Minimum centerline radius of the access drive shall be fifty (50) feet.
10. A turnaround (circular or tee) shall be required at the end of the drive to accommodate fire and emergency vehicles.
11. Access drives over five hundred (500) feet in length shall be provided with turnouts at not more than three hundred (300) feet distant from each other or at distances that insure continuing visual contact between turnouts. Turnouts shall be fifty (50) feet long with twenty-five (25) foot tapers. Total drive surface width at the turnout shall be eighteen (18) feet.
12. Access drives shall be designed to withstand a load carrying capacity of HS20-44 design load. In addition, structures shall have a minimum of 40-year design life.

Private Street Minimum Standards for Residential Development

1. Private streets shall not contain more than twenty (20) single family residential units unless a variance from the County Subdivision Regulations has been granted by the County Planning Commission.
2. Pavement thickness for private streets shall not be less than that required for public streets.
3. Minimum pavement width shall be as follows:
   4 thru 10 units 16 feet
   11 thru 20 units 18 feet
4. Minimum horizontal alignment shall be as follows:
   4 thru 10 units 100' radius
   11 thru 20 units 200' radius
5. Maximum grade shall not exceed twelve (12) percent.
6. Vertical alignment shall meet 20 MPH design speed.
7. Turnouts shall be provided for the purposes of free passage by fire and emergency vehicles if it is determined by the County Engineer that such are required.
8. All requirements of the Medina County Stormwater Management and Sediment Control Rules and Regulations shall be met.

202 INTERSECTION DESIGN

A. Angle of Intersection

Streets shall be laid out to intersect as nearly as possible at right angles and no street shall intersect any street at any angle of less than 70 degrees.

B. Types of Allowable Street Intersection

T-type intersections are encouraged for residential non-through traffic streets. In no event shall an intersection in excess of a 4-leg intersection be utilized unless a rotary-type design is used and has been approved by both the appropriate township authority and the County Engineer.

C. Centerline Offsets at Centerline

Intersection offsets of less than 10 feet may be approved. However, if the offset is in excess of 10 feet, the values in Table 200/3 shall be used as minimums.

TABLE 200/3

INTERSECTION SPACING

Street Classifications	Spacing
Residential - Residential	150 feet
Residential - Collector	200 feet
Collector - Collector	300 feet
Collector - Arterial	1,320 feet
Arterial - Arterial	2,640 feet
Arterial - Freeway	5,280 feet

D. Grades

1. The grade on the through street shall be 3 percent or less unless approved by the County Engineer with a maximum allowable grade of 6 percent. Such approval by the County Engineer shall not require appellate decision pursuant to Article 6.

2. The grade on the stop leg of an intersection shall be 3 percent or less unless approved by the County Engineer with a maximum allowable grade of 5 percent. Such approval by the County Engineer shall not require appellate decision pursuant to Article 6.

3. To provide proper drainage at all intersections, the stop street legs of all intersections shall have a downgrade of between 1.56 percent and 3.0 percent.

4. Standard drawings for intersection grade requirements are shown by Appendix A, Figure 10.

E. Boulevard Islands

Intersections shall be designed without boulevard islands.

F. Radius Returns

At intersections, the minimum radius returns shall be as shown in Table 200/4 and shall be measured from the outside edge of pavement or face of curb.

TABLE 200/4

RADIUS RETURNS

Street Classification	Radius	
	Edge of Pavement	Right-of-Way
Residential	30 feet *	30 feet *
Sub-Collector	30 feet *	30 feet *
Collector	50 feet	40 feet
Arterial	50 feet	40 feet

* May be increased when intersecting with existing collector or arterial based on County Engineer s recommendation.

203 ROTARY INTERSECTION DESIGN

Streets using a rotary-type intersection shall use a minimum radius shown in Appendix A, Figure 12. The Board of Medina County Commissioners, by resolution, may approve varying this radius only after a complete review and study of the area has been conducted by the County Engineer. The interior area of a rotary may not be dedicated to a public agency unless requested by that agency.

204 CUL-DE-SAC

Streets terminating in a permanent cul-de-sac turnaround, as shown in Appendix A, Figure 13, shall have a minimum right-of-way radius of 70 feet. The outer edge of pavement shall have a minimum radius of 50 feet. Cul-de-sacs with an island in the middle shall be properly drained by an adequate storm sewer system. Cul-de-sacs with island also shall have a minimum pavement width of 24 feet, and in no case shall the outside edge of pavement be located within 15 feet of any right-of-way line. The maximum profile grade or cross slope in a cul-de-sac shall not exceed 4 percent.

205 TEMPORARY TURNAROUNDS

Temporary turnarounds shall be required where stub streets end more than 200 feet from an intersection and shall conform to the design standards as shown in Appendix A, Figure 13. Temporary turnarounds as shown in Appendix A, Figure 14, shall be permitted with the prior approval of the County Engineer and Township Trustees. Where temporary turnarounds are used, they shall be provided with a temporary easement covering the portion of the turnaround which extends beyond the normal right-of-way limits. Such temporary easement shall be automatically vacated for the use of the abutting property owner when said temporary turnaround is no longer needed for the public.

206 BRIDGES AND SPECIAL STRUCTURES

All bridges and special structures shall be designed using Ohio Department of Transportation Standards except where other standards are approved by the County Engineer. See Table 200/5 for required loading, roadway clearance width and vertical clearance standards for each type of street. The waterway opening shall be designed in accordance with the Medina County Stormwater Management and Sediment Control Regulations.

TABLE 200/5

MINIMUM STRUCTURE STANDARDS

Classification Load	Design Load	Roadway Clearance Width	Vertical Clearance
		Urban/Rural	
Freeway	To Be Determined By the County Engineer		
Arterial	To be Determined by the County Engineer		
Principal Collector	HS-20	33/40	15.0
Minor Collector	HS-20	26/38	15.0
Principal Residential	HS-20	24/36	14.5
Minor Residential	HS-20	24/36	14.5
Commercial and Industrial	HS-20	33/40	15.0

207 STREET LIGHTS

The developer shall contact the appropriate township authority of the township in which the subdivision is located to see if street lighting is necessary. If township regulations require street lighting, it shall follow the guidelines as adopted by the township trustees and the power company serving the development area.

208 STREET SIGNS

All necessary street signs are to be erected by the County Engineer in accordance with the Uniform Traffic Control Manual, and the cost of the signs and labor shall be paid for by the developer. If the developer desires to install non-typical street name signs, he must have prior written approval by the Township Trustees.

209 PAVEMENT MARKING

All necessary street paving marking is to be performed by the developer in accordance with the Uniform Traffic Control Manual under the direction of and with the approval of the County Engineer.

210 GUARDRAIL

Guardrail or guardposts will normally be required for all embankments 6 feet or higher. Where sideslopes are 3:1 or flatter the County Engineer may consider the omission of guardrail. Guardrail and guardposts shall be the type as shown in Figures 16 and 17 of Appendix A. The developer should show all guardrail or posts on the construction plan for approval as to type and location.

211 UNDERGROUND UTILITIES

Utilities, including gas pipes, telephone cables, electrical power and street lighting circuits, may be underground. Where underground electrical transformers are used, they shall be located in vaults. When electrical power cables are installed underground in a subdivision, electrical street lighting cables shall de-energized and protected against physical damage.

All construction of utility pipe, conduit, cable, wires, vaults and pertinent equipment shall comply with the current regulations of the Public Utilities Commission of Ohio and with the requirements of the public utility involved. All location drawings and/or detailed drawings of the utilities prepared by the developer and/or the utility companies shall be submitted to the County Engineer for approval.

212 ORNAMENTAL CONSTRUCTION

If the developer elects to install a decorative fence, trees, landscaping or other ornamental construction within the right-of-way limits, he shall show such construction on the plan and profile drawings, or submit separate drawings for approval by the County Engineer, the appropriate township authority and the Board of County Commissioners.

213 CURBS AND GUTTERS

Curbs and gutters shall be the type shown on Medina County Pavement detail sheets. The developer shall submit complete detailed drawings for approval by the County Engineer. At all intersections with curbing, a curb ramp shall be provided as shown in Figure 18 of Appendix A.

214 SIDEWALKS

Sidewalks shall be made of 6-sack concrete 4 inches thick (6 inches thick under driveways) and at least 4 feet wide. In areas which have high pedestrian traffic, i.e., near schools, parks and commercial parks and commercial areas, sidewalks may be required to be wider than 4 feet. When sidewalks are required, the installation of all sidewalks located within open space shall be the responsibility of the developer and shall be constructed within the two-year period during which the maintenance bond has been posted by the developer. A construction guarantee will be required for all sidewalks located within open space as described in Section 502. Sidewalks will normally be required for urban type street sections, unless otherwise directed by the township and approved by the County Engineer.

215 FENCE

Fence shall be required whenever either the County Engineer or the Commissioners determine that hazardous conditions may exist as a result of man-made or natural physical conditions. Man-made conditions may result from such things as an open storm drainage intake or outfall at a culvert or drainage detention facility.

The developer shall submit complete, detailed drawings of his proposed fence for review and approval by the County Engineer and the appropriate township authority.

216 DAMS AND PONDS

Proposed dams or ponds which are to be part of the subdivision shall have plans submitted to the County Engineer for approval. If the dam or pond falls within the bounds of Section 1521.06 of the Ohio Revised Code, the developer or his engineer shall apply for a permit from the State of Ohio, Department of Natural Resources, Division of Water.

No public road shall be built across a dam without approval from both the County Engineer and the Township Trustees of the township in which the development is located.

Ponds of all sizes which could be used for fire protection, stormwater control and sedimentation control are encouraged. (See Appendix C for fire pond requirements).
Ponds may be required for fire protection where water is not available and shall meet all township zoning requirements.

217 TREES

All existing trees shall be removed from the street right-of-way unless found by the County Engineer not to interfere with the general traveling public. See Section 212..

218 STORMWATER DRAINAGE, EROSION AND SEDIMENT CONTROL DESIGN

Stormwater management, erosion and sediment control design shall comply with the Medina County Stormwater Management and Sediment Control Rules and Regulations.

The following is a list of the general items covered by the above subject text:

1. Erosion and Sedimentation Controls
2. Stormwater Runoff Control
3. Uniform Design of Drainage Systems
4. Sediment Pollution and Erosion Caused by Alterations to Floodplains
5. Rainfall in Medina County
6. Calculating Stormwater Runoff
7. Runoff Control Methods
8. Streets and Inlet Design
9. Storm Sewer Design
10. Culvert and Miscellaneous Structures Design
11. Open Channel Design

All required stormwater management, sediment control and erosion control facilities shall be constructed or guaranteed by the subdivider per the procedures of Article 5 after approval by the County Engineer's Office with recommendation from the Medina County Soil and Water Conservation District.

A recommended reference manual for erosion and sediment control is Rainwater and Land Developmen - Ohio s Standards for Stormwater Management, Land Development, and Urban Stream Protection, which may be purchased at local Soil and Water Conservation District Offices.

219 SEWAGE DISPOSAL AND SANITARY SEWER IMPROVEMENTS

A. Where an adequate existing central wastewater treatment system is reasonably accessible, in the determination of the Medina County Sanitary Engineer, public sanitary sewers shall be installed to adequately serve all lots induding lateral connection to the public system. All central wastewater system extensions shall meet the requirements of the Ohio Environmental Protection Agency and the Medina County Sanitary Engineer's Rules and Regulations.

B. Where a public wastewater treatment system is not reasonably accessible, the subdivider may provide:

1. A central public wastewater treatment system, including a collection system and wastewater treatment facility for the development provided
that the general plan for such treatment system has received the prior approval of the Ohio EPA, Medina County Health Department and Medina County Sanitary Engineering Department and that, after said approval, the system is constructed and installed in accordance with the requirements of these agencies.

2. Lots may be served by a household wastewater treatment system if the provisions of Section 219-C are met.

C. On-Lot Disposal Systems

1. Where the installation of a household wastewater treatment system is considered, the suitability of the soil for household systems, the absorptive ability of the soil, surface drainage, ground water level and topography shall be the criteria for determining whether or not the installation of the household system is permissible. For residential systems, criteria shall be in accordance with the requirements of the Medina County Health Department. Commercial systems shall meet the requirements of the Ohio Environmental Protection Agency.

2. Each lot so served shall be a size and shape to accommodate the necessary type of treatment system.

3. Soil, survey, maps and field investigations shall be utilized to determine the soil types within the area being developed. Other tests may be utilized or required by the Medina County Health Department.

220 WATER SUPPLY IMPROVEMENTS

The following shall govern water supply improvements:

A. Where a central water supply system is within a reasonable distance as determined by the Medina County Sanitary Engineer, the developer shall construct a system of water mains and appurtenances and connect them with the central water supply system as required by the Medina County Sanitary Engineer's Rules and Regulations.

B. In areas where a central water supply system is not available, household water systems or a central water system shall be provided and meet the requirements of the Ohio EPA, the Medina County Health Department, the Medina County Sanitary Engineering Department and appropriate State requirements.

221 DRIVEWAY AND SPECIAL APPROACHES

The efficiency and safety of a street largely depends on the amount and character f roadside interference with the movement of traffic. Vehicles entering, leaving or standing nearby cause most of the roadside interference. The major roadside interference originates in vehicle movement to and from businesses, residences and other development along the street. Accordingly, regulations and overall control of driveway connections are necessary to provide efficient and safe operations of the street system.

When new roads are being built, all sublot drive pipe sizes shall be predetermined and submitted to the County Engineer for approval with the required construction drawings.

222 ON-SITE AND OVER-SIZED IMPROVEMENTS

A. On-Site Improvements

The subdivider shall be required to construct streets and utilities to his subdivision boundary or the edge of the reserve strip.

B. Off-Site Improvements

When streets or utilities are not available at the boundary of the proposed ubdivision, the subdivider shall be required, prior to the approval of the final plan to:

1. Obtain, in the developer's name, for future assignment to Medina County, the rights-of-way to construct the necessary streets or utilities.

2. Make such arrangements as are necessary to financially guarantee the construction of the streets and/or utilities.

C. Over-Sized Improvements

"Over-sized" improvements are streets or utilities of a larger size than would be necessary for the proposed subdivision.

223 COST OF ON-SITE, OFF SITE AND OVER-SIZED IMPROVEMENTS

A. Cost of On-Site Improvements

The developer shall be responsible for the cost of all on-site improvements, and they shall be installed in such a location and manner as to make their extension suitable for servicing adjacent areas.

B. Cost of Off-Site Improvements

If the Board of County Commissioners, in conjunction with the agency or agencies having control of the improvements, finds that off-site extensions require crossing undeveloped lands and that a special assessment would not be warranted against such lands until future time, or if the Board of County Commissioners determines that a governmental expenditure for such purpose is not warranted until such future time, but that the off-site improvement is necessitated by the requested development, then the developer shall be responsible for the cost of these improvements.

C. Cost of Over-Sized Improvements

If the Board of County Commissioners, in conjunction with the agency or agencies having control of the improvement would be beneficial for future planned development, then the Board shall consider special assessment, governmental expenditure or an alternate means of financing to provide for the over-sizing.

224 REIMBURSEMENT OF COSTS FOR OVER-SIZED AND OFF-SITE IMPROVEMENTS

If the Board of County Commissioners, in conjunction with the agency or agencies having control of the improvements, finds that such would be beneficial for planned growth, but determines that the over-sized and/or off-site extensions are not a proper subject for special assessment at the time, and that a direct governmental expenditure is not justified at this time, then in order to provide for over-sized and/or off-site extensions, the County may agree with the developer to have such improvements installed, and provide to the developer a restricted improvement, which shall not be made available to anyone outside the developer's subdivision until such time as the developer has been reimbursed for a proportion of the costs of said over-sized and/or off-site extension.

The requested reimbursement cost may include construction costs, engineering costs (properly allocated thereto), costs for legal services allocated thereto, and any other costs necessary and proper to complete the improvement. However, the Commissioners will approve reimbursement cost only if such is proven to be reasonable and customary.

The Board of County Commissioners, the agency or agencies having control of the improvements, and the developer shall enter into a contractual arrangement setting forth the total amount of such reimbursement, together with a pro rata usage reimbursement plan including the nature and method of determining the amount for such reimbursement and the time or times at which the same shall occur. Such contractual arrangement shall be accomplished and completed prior to the improvement being started. It is the intent to secure reimbursement to the developer at such time or times as connections to the over-sized and/or off-site improvements are made and are used by developers of adjoining or benefiting lands.

As future development occurs on adjoining or benefiting lands, the original developer shall be reimbursed in accordance with the contractual arrangement referred to above and each successive developer shall exhibit receipt showing reimbursement prior to final subdivision approval relating to such adjoining or benefiting lands.

225 REVIEW OF ENGINEERING STANDARDS

The engineering standards of this text shall be reviewed at 5-year intervals after adoption, or more often it warranted by experience.

226 SPECIFICATIONS

Where specifications are not specifically stated within this text, those of the Ohio Department of Transportation will be used unless others are approved by the County Engineer.

Specifications within this text and those of ODOT are not intended to replace those prepared by the developer's engineer, but rather they are to augment them. Specifications of the County and ODOT will be treated on their own merit.

227 CONSTRUCTION PROCEDURES AND INSPECTION

All construction procedures and inspection shall follow the rules and regulations of the agencies having the jurisdiction over that phase of the improvement.

228 START OF CONSTRUCTION

Before the start of any construction of subdivision improvements is made, the developer must first have a set of construction plans approved by the County Engineer and have made all necessary arrangements for County inspections of said improvement.

In addition, a preconstruction meeting attended by the developer's contractor shall be held prior to the start of construction.

229 FINAL INSPECTION

Upon completion of all the improvements, as required, the subdivider shall request, in writing, a final inspection by the County Engineer as required under Section 711.091 of the Ohio Revised Code. The County Engineer shall make said final inspection of all the required improvements with the assistance from other agencies having authority pertaining to specified items.

ARTICLE 3

PAVEMENT DESIGN

SECTION

300 PURPOSE

This article has been prepared to specify the pavement design criteria to be used in determining minimum thickness of street pavement. In the case of any questions as to street classification or thickness required, the County Engineer shall make the final determination.

301 PAVEMENT TYPE AND DEPTH

The type and depth of pavement for new street construction shall be based on the classification of the street as shown on Table 300/1.

302 PAVEMENT SPECIFICATIONS

All pavement materials shall conform with the current State of Ohio Department of Transportation Construction and Material Specifications unless other requirements are determined to be needed by the County Engineer for the subject project.

303 TOWNSHIP ROAD DISTRICT

Alternative street pavement types permitted are shown in Table 300/1. Whenever the Board of Township Trustees of a township has decided by resolution that one of the alternative pavement types shown by Table 300/1 is to be used in the township, that pavement type shall be required by these subdivision Regulations. In the event of the township's failure to designate a pavement type by resolution, one of the pavement types shown by Table 300/1 shall be chosen by the developer.
(SEE ARTICLE 4)

304 SUBBASE DRAINAGE

Aggregate base and shallow pipe underdrains shall be installed to drain the subbase of all new pavement. See Medina County pavement detail sheets for construction details of subbase drainage.

305 SUBGRADE DRAINAGE

When due to high ground water conditions, it becomes necessary to drain excess water from the subgrade materials, deep pipe underdrains shall be required. The type and location of said subgrade drainage items shall be determined by the County Engineer.

TABLE 300/1

PAVEMENT TYPE AND DEPTH

Street Classification	Pavement Type	Pavement Depth
Minor Residential & Principal Residential	Concrete	7"
	Asphalt	9-1/2"
	* 402 CS	See detail drawing
	* 405	See detail drawing
Minor Collector	Concrete	8"
	Asphalt	11"
Principal Collector	Concrete	9"
	Asphalt	12"
Commercial and Industrial	Concrete	To be determined by Medina County Engineer
	Asphalt	

ARTICLE 4

TOWNSHIP ROAD DISTRICTS

SECTION

400 PURPOSE

To allow the political subdivisions responsible for the maintenance of the subdivision improvements to select the type of improvements installed so that it will be compatible with their normal maintenance operations.

401 GUIDELINES

The township responsible for the maintenance of road improvements, by resolution, shall state their preferences in the following categories for improvements within their road district:

1. typical section/pavement type
2. cul-de-sac islands
3. speed limit

These improvements shall fall within the guidelines, as called out in this text. If no resolution is passed by the township, the final decisions as to type of improvement to be installed shall rest with the developer, as long as it meets the requirements of this text.

402 PROCEDURE

The township shall pass the resolution for the standards within their road district and submit them to the Board of County Commissioners. The Board of County Commissioners shall approve or reject these standards, based on the recommendations of the Medina County Engineer. See Appendix B for the standards of each road district.

403 VARIANCE

Once a road district has been approved by the Board of County Commissioners, a variance to the Township road district resolution can only be made by a majority vote and resolution by the Board of Trustees. Any variance granted must fall within the guidelines of this text.

ARTICLE 5

GUARANTEES AND INSURANCE

SECTION

500 PURPOSE

This article describes the guarantees and insurance required during construction and the 24-month maintenance period after approval of the improvements. All guarantees and insurance required under the section shall be made with and approved by the Board of Medina County Commissioners.

501 TITLE GUARANTEE

A title guarantee shall be furnished to the Board of County Commissioners prior to acceptance of dedication to guarantee that the title of the lands to be dedicated is free and clear of all encumbrances and clear title stands in the name of the dedicator as indicated on the final plat. A certification that all taxes to the date of transfer are paid or secured to be paid shall also be submitted as part of the title guarantee.

502 CONSTRUCTION GUARANTEE

All improvements required by these Regulations shall be constructed prior to approval of the final plat by the Commission. In lieu of actual installation or completion of the required improvements, the subdivider shall furnish the County Commissioners a construction guarantee insuring completion of all improvements as a consideration for the approval of a final plat by the Commission before all improvements have been made. The guarantee shall be of the types described in Section 504-505.

A. Amount of Guarantee

The financial guarantee shall be in the amount equal to the County Engineer's estimate of cost for the completion of all remaining improvements. If the required improvements are not completed within eighteen (18) months, the amount of the guarantee shall be reviewed and may be increased by the County Engineer where it is found that the estimated cost of the remaining improvements are more than the remaining guarantee.

B. Duration of Guarantee

The duration of the guarantee shall be until such time as the improvements are accepted by the County Engineer.

C. Reduction of Guarantee

The County Commissioners may reduce the amount of the financial guarantee herein specified, when any portion of an improvement required by the Regulations has been satisfactorily completed and inspected by the County Engineer. The County Engineer shall certify by a copy of the inspection report to the County Commissioners that said portion of improvement is completed and satisfactory. Such reduction in the financial guarantee shall not exceed 90 percent of the original amount of the guarantee.

D. Final Release of Guarantee

Upon the request of the subdivider, the County Engineer shall make an inspection of the subdivision to check if all improvements have been completed and satisfactorily constructed. If the improvements have been completed, he shall report the acceptance of the improvements to the County Commissioners and the County Commissioners shall release the remaining financial guarantee.

E. Maintenance During Construction

The subdivider and/or contractor(s) shall be responsible for the maintenance of the improvements installed for the term of the construction guarantee.

503 MAINTENANCE GUARANTEE

At the time of the final inspection of the improvements within the subdivision as specified in Section 502 (D), the subdivider shall furnish the County Commissioners a maintenance guarantee for a period of 24 months to insure that the improvements will hold up under actual conditions and to guarantee the maintenance of the improvements. The maintenance guarantee shall be of the types described in Sections 504 and 505.

If the maintenance guarantee is posted by the contractor(s), it may be in the form of a bond or types described in Sections 504 and 505 and it is to be made on a dual obligee basis for the benefit of both the subdivider and the Board of Commissioners.

A. Amount of Guarantee

The maintenance guarantee shall be in the amount of 10 percent of the total construction cost of all public improvements.

B. Items Covered Under Guarantee

During the guarantee period, the subdivider and/or contractor(s) shall be responsible for maintenance of all improvements and shall repair all failures as soon as notified by the County Engineer.

C. Release of Maintenance Guarantee

The County Engineer shall make an inspection of the improvements 24 months after the maintenance guarantee is furnished. The County Engineer shall report his findings to the County Commissioners for their action. The County Commissioners shall release the guarantee at once if the improvements are satisfactory. If the improvements are declared unsatisfactory, the subdivider and/or contractor(s) shall make the repairs or the County Commissioners may use the guarantee to make necessary repairs.

504 ESCROW ACCOUNT AS GUARANTEE

The subdivider may make arrangements to have an amount equal to the County Engineer's estimate held in an escrow account in a bank or other reputable institution approved by the County Commissioners. The subdivider shall file with the County Commissioners an agreement between the bank or lending institution, the County Commissioners and the subdivider, whereby the subdivider guarantees the following:

A. That the funds of said escrow account shall be held in trust until released by the County Commissioners and may not be used or pledged by the subdivider as security in any other matter during that period.

B. In case of failure on the part of the subdivider to complete and/or maintain said improvements, the bank shall immediately make the funds in said account available to the County for use in the completion of those improvements.

505 LETTER OF CREDIT AS GUARANTEE

The subdivider may provide, from a bank or other reputable institution subject to the approval of the County Commissioners, a letter of credit. This letter shall be filed with the County Commissioners and shall certify the following:

A. That the insurer does guarantee funds in an amount equal to the cost estimate approved by the County Engineer for the completion and/or maintenance of all improvements.

1. Shall pay to the County Commissioners immediately such funds as are necessary to finance the completion and/or maintenance of the required improvements, up to the limit of credit stated in the letter; or

2. The creditor shall proceed with the completion and/or maintenance of the required improvement, within a new time limit as agreed to by the County Commissioners.

B. That this letter of credit may not be withdrawn or reduced in amount without approval by the County Commissioners on recommendations by the County Engineer.

ARTICLE 6

ADMINISTRATION

SECTION

600 ADMINISTRATION

These Regulations shall be administered by the following agencies:

A. County Commissioners

The Board of Medina County Commissioners shall be responsible for:

1. The acceptance of the dedication of all public rights-of-way and the acceptance of all public easements.

2. The acceptance of all performance agreements and performance guarantees used in lieu of actual construction of improvements deemed necessary or appropriate.

3. Adopting standards of construction and requiring and securing the construction of improvements shown on the plats and plans required by Medina County Subdivision Regulations.

B. Sanitary Engineer, Health Department and Ohio Environmental Protection Agency

The Medina County Sanitary Engineer, the Medina County Health Department and the Ohio Environmental Protection Agency, whichever has jurisdiction, shall be responsible for reviewing construction plans, inspection of construction and approval of the type of household water system and central wastewater disposal system designed to serve subdivisions.

C. County Engineer

The Medina County Engineer shall be responsible for the following items:

1. The County Engineer shall be responsible for the review and approval or disapproval of all improvement plans required by Medina County Subdivision Regulations, excepting those dealing with sanitary and water facilities.

2. The County Engineer shall be responsible for the construction inspection of all improvements, except those dealing with sanitary and water facilities.

3. The County Engineer shall be responsible for the final inspection and approval or disapproval of improvements constructed as outlined in Section 711.091 of the Ohio Revised Code.

601 VARIANCES

The Board of County Commissioners shall have responsibility for decided variances, not otherwise delegated to another body by these Regulations. A variance to a requirement of these Regulations may be approved where unusual or exceptional facts or conditions require modification of the Regulations, provided that the Board of County Commissioners shall:

A. Find that unusual topographical or exceptional physical conditions exist.

B. Find that strict compliance with these Regulations would create an extraordinary hardship in the face of the exceptional conditions.

C. Permits any modification to depart from these Regulations only to the extent necessary to remove the extraordinary conditions.

D. Find that any modification granted will not be detrimental to the public interest nor in conflict with the intent and purpose of these Regulations.

E. Require such other conditions to be met by the proposed plat as the Commission may find necessary to accomplish the purpose of these Regulations when varied.

Variances shall be approved by the Board of County Commissioners only after review and analysis of the proposed variance by the County Engineer, the County Sanitary Engineer and the Health Department and appropriate township authority when applicable.

602 APPEALS TO COURT

Rights of appeal shall be as set forth in Chapter 711 or other applicable sections of the Ohio Revised Code.

603 SEVERABILITY

If any article, section, paragraph, clause or part of these Regulations is held invalid by a court, such judgment shall not affect the validity of the remaining provisions of these Regulations.

604 PLAN CHECKING AND FIELD INSPECTION FEES

The subdivider shall pay to the County Engineer, County Sanitary Engineer, Soil and Water Conservation District, County Health Department and/or the Ohio Environmental Protection Agency, the total cost of plan checking and field inspection of the improvements. The method of calculation of plan checking and field inspection fees shall be established by the County Commissioners or appropriate agencies by other resolution. The subdivider is held responsible for all inspection fees. The construction guarantee posted by the subdivider assures the payment of all inspection fees and no financial guarantees will be released

until all inspection fees have been paid in full.

ARTICLE 7

CONSTRUCTION DRAWINGS

700 PURPOSE

By specifying the general format that construction drawings should follow, they should be easier for all involved parties to use and review.

701 PROCEDURE

Step 1) After Planning Commission approval of the preliminary drawings the subdivider shall prepare and supply construction drawings for review by the County Engineer and either the Health Department or Sanitary Engineer, as requested.

Step 2) Three (3) complete sets of the construction drawings and two (2) sets of all computations shall be submitted to the County Engineer.

Step 3) After all construction is completed, and prior to issuance of permits, the developer's engineer shall supply the County Engineer a set of original as-built, reproducible drawings.

As-built drawings shall include invert of pipes and top of casting elevations. As-built pavement elevations shall be required only when modifications to the original design have been made during construction. When an urban design is used, the as-built top of curb, offset to manhole and casting elevations shall be included to insure conformity to the typical section. The as-built drawings shall include all of the original construction drawings unless otherwise specified by the County Engineer.

702 GENERAL

All construction drawings shall be prepared in ink on 24" x 36" sheets of drafting film. A title block shall be placed in the lower right corner of each sheet. If more than three sheets are required, then a title sheet shall be used. The professional engineer responsible for the preparation of the construction drawings shall affix his stamp or seal.

703 TITLE SHEET

The title sheet shall be page number one and each sheet thereafter shall be numbered consecutively. It shall contain the following information:

1. Location Map: This may be at a scale of 1" - 5,280 feet and shall indicate the subdivision location within the County.

2. Typical Section: A typical section shall be located on this sheet or other sheets of the plans to show design elements of the road construction.

3. Subdivider: Name, address, and telephone number.

4. General Notes: A set of general notes covering special situations, not covered under the general specifications, shall be shown on this sheet or other sheets of the plans.

5. Names of all affected utilities, with contact persons and telephone numbers.

704 TOPOGRAPHIC AND DRAINAGE SHEET

A topographic map of the subdivision area to a scale of 1" = 100 feet shall be provide
showing the following information:

A. Topographic Details

   1. All elevations shall be to mean sea level datum.

   2. Contours shall be drawn at 2-foot intervals, if slope is less than 10 percent and 5-foot intervals if the slope is greater than 10 percent.

B. Drainage Details:

   1. The drainage area for each pipe or drainage structure shall be outlined and the number of acres shown on this sheet. To show the entire drainage area, an additional sheet may be required. If this additional sheet is needed, existing aerial mapping or the United States Geological Survey mapping will be sufficient.

   2. The proposed storm drainage system shall be completely shown on this sheet.

705 SPECIAL CONSTRUCTION DRAWINGS

These sheets shall contain detailed drawings of special construction items not otherwise shown. Detail sheets prepared by the Medina County Engineer for pavement and storm sewer items shall be incorporated in the set of construction drawings. Erosion and sediment control details shall also be incorporated as directed by the Medina County Engineer.

706 ROAD PLAN AND PROFILE SHEETS

All roads within the subdivision shall be shown on a standard plan and profile sheet. Plan view on top one-half and profile view on bottom one-half.

A. Normal Scale

1. Use 1" - 50 feet for the horizontal scale and 1" - 5 feet for vertical scale on rural density subdivisions.

2. Use 1" = 30 feet for the horizontal scale and 1" = 5 feet for the vertical scale on suburban or urban density subdivision.

B. Plan Items

1. Road centerline, stationing, right-of-way lines, curve data, proposed monument locations (on centerline at points of curvature, points of tangency, and intersections), road names, sublot lines, easements and lot numbers.

2. Pavement, curbs, gutters, storm and sanitary sewer structures, bridges, culverts, guardrail and proposed and existing utilities.

3. Topographic features within the general area and any obstruction within the right-of-way or construction area.

C. Profile Items

1. Centerline stationing, benchmarks with the description and elevation, original ground profile grade on the centerline, (labelled at 50' stations) and proposed profile grade on the centerline labeled at 50' stations for straight grades and 25' stations for vertical curves).

2. Vertical curve data and sight distance data.

3. Storm structures, sanitary sewer structures with assigned numbers, bridges, culverts and proposed and existing utilities.

707 CROSS-SECTION SHEETS

A. Scale

Both horizontal and vertical scales shall be 1" = 5 feet, unless approved otherwise by the County Engineer.

B. Location

A cross-section should be shown at each 100' station and other needed locations and shall show the existing ground line dashed, with the proposed section drawn solid.

C. Data

Including following: the proposed finished grade elevation at centerline, the station and the existing elevation at the centerline.

D. Drainage Sections

If a detail culvert sheet is not used, then a cross-section at any proposed culvert or other structure shall be shown. This detail shall include the elevation at both the inlet and outlet. Also, the type and size of structure shall be shown. The profile of existing drainage channels shall be shown and should extend a minimum of 50 feet beyond the inlet and outlet and should extend beyond where the proposed grade matches the existing grade.

E. Earthwork Table

At the right-hand side of each cross-section sheet there should be a column for end areas in square feet and volumes in cubic yards for both cut and fill. Each sheet should have a summation of volumes at the bottom.

708 DRAINAGE STRUCTURES

Detail drawings of all bridges and other drainage structures (other than standard culvert pipe without headwalls) shall be provided.

709 INTERSECTION DETAILS

The construction drawings shall include detailed plan views of intersections and cul-de-sacs. These detailed plan views shall be drawn at a scale of 1"=10' or 1"=20' and shall show radius return curve data, proposed elevations for centerline and gutter (or edge of pavement), proposed sidewalks (as applicable), and proposed utilities (i.e. storm, sanitary, water).

710 EROSION AND SEDIMENT CONTROL PLAN

A. Refer to Section 218 for criteria to be used in the design of erosion and sediment control measures.

B. The erosion and sediment control plan may be incorporated on the topographic and drainage sheet.

C. Detail sheets prepared by the Medina County Engineer for erosion and sediment control shall be incorporated in the set of construction drawings.

ARTICLE 8

DEFINITIONS

Interpretation of Terms or Words: For the purpose of these Regulations, certain terms or words used herein shall be interpreted as follows:

A. The word "person" includes a firm, association, organization, partnership, trust, company or corporation as well as individual.

B. The present tense includes the future tense, the singular number includes the plural, and the plural number includes the singular.

C. The word "shall" is a mandatory requirement, the word "may" is a permissive requirement, and the word "should" is a preferred requirement.

D. The words "used" or "occupied" include the words "intended, designed or arranged to be used or occupied."

E. The word "lot" includes the words "plot" or "parcel."

F. The definition for any term used herein but not defined herein shall be as contained in Webster's Collegiate Dictionary.

Average Daily Traffic	The total number of vehicles passing a point during a typical 24-hour day.
A.D.T.	See Average Daily Traffic
Commissioners	The Board of County Commissioners of Medina County
Construction Plan	The maps and drawings showing the specific location and sign of improvements to be installed in the subdivision
Density, Rural	Land to be utilized for residential purposes which does not exceed one dwelling unit per gross acre
Density, Suburban	Land to be utilized for residential purposes which ranges from one to four dwelling units per gross acre
Density, Urban	Land to be utilized for residential purposes including multiple family units which has more than four dwelling units per gross acre.

Developer Any individual, subdivider, firm, association, syndicate, partnership, corporation, trust or any other legal entity commencing proceedings under these Regulations to effect a subdivision of land hereunder for himself or for another.

Plat A map of a tract or parcel of land (Ohio Revised Code 711.001 [A]).

Public Utility Any person, firm or corporation, governmental agency or board having a public utility commission permit to furnish to the public, under regulations, electricity, gas, sewer, water, telephone, transportation, steam or other similar public services.

Public Way An alley, avenue, boulevard, bridge, channel, ditch, easement, expressway, free-way, highway, land parkway, right-of-way, road, sidewalk, street, subway tunnel, viaduct, walk or any other ways in which the general public or a public entity have a right or which are dedicated, whether improved or not.

Reserve Strip A strip of land at the end of and abutting a street which, due to construction practices and physical conditions, cannot be constructed during this phase of the subdivision development. The length of this strip shall normally be within the range of 5 to 20 feet.

Right-of-Way A strip of land taken or dedicated for use as a public way. In addition to the roadway, it normally incorporates the curbs, lawn strips, sidewalks, lighting and drainage facilities and may include special features (required by the topography or treatment) such as grade separations, landscaped areas, viaducts and bridges.

Sidewalk That portion of the road right-of-way outside the vehicular roadway, which is improved for the use of pedestrian traffic. (See "Walkway")

Street, Thoroughfare or Road The full width between property lines or between the lines forming the boundaries of an easement bounding every public way of whatever nature, with a part thereof to be used for vehicular traffic and further described as follows:

1. **Public Street**: A right-of-way which provides vehicular and pedestrian access dedicated to public use. A right-of-way, dedicated to public use, which provides vehicular and pedestrian access to adjacent properties.
2. **Private Street**: A right-of-way which provides vehicular and pedestrian access to two (2) or more residential, commercial, or industrial buildings or lots, or group of buildings or lots which will not be dedicated for public use.

Subdivider	(See Developer)
Surveyor	A person registered to practice surveying in the State of Ohio, by the State Board of Registration.
Walkway	A public way, for pedestrian use only, whether along the side of a road or not.
Wastewater, Central System	A complete sewerage system including collection and treatment facilities which are owned and operated by a municipality, the County or a public or private utility approved by the Ohio Environmental Protection Agency.
Wastewater, Household System	Any sewage disposal or treatment system or part thereof for a single family, two-family or three-family dwelling which receives sewage and is approved by the Medina County Health Department.
Water, Central System	A complete water system including treatment and distribution facilities which are owned and operated by a municipality, Medina County or a public or private utility system approved by the Ohio Environmental Protection Agency.
Water, Household System	A water system designed to serve a single family, two-family or three-family dwelling, as approved by the Medina County Health Department.