

**THE STANDARD SPECIFICATIONS AND PROCEDURES
FOR
THE DESIGN AND CONSTRUCTION OF SUBDIVISION ROADS
IN
GEAUGA COUNTY, OHIO**

**ADOPTED BY:
THE GEAUGA COUNTY BOARD OF COMMISSIONERS.**

Adopted:
October 1, 2020

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50.0 GENERAL PROVISIONS

51.0 Title

These regulations shall be known and may be cited and referred to as "The Standard Specifications and Procedures for the Design and Construction of Subdivision Roads in Geauga County, Ohio."

52.0 Administration

These regulations shall be administered by the Geauga County Engineer or the authorized agents of the Engineer.

53.0 Jurisdiction

These regulations shall be applicable to all public and private road improvements pursuant to Section 711.101 of the Ohio Revised Code within the unincorporated area of Geauga County, Ohio.

54.0 Purpose

The purpose of these regulations is to establish general rules and standards governing the construction of improvements shown on the plats and plans required by Section 711.10 of the Ohio Revised Code.

60.0 DEFINITIONS

61.0 Interpretation of Terms and Words

For the purpose of these regulations, the following rules of interpretation for words and terms apply.

The word "person" includes an individual, association, organization, partnership, trust company, corporation, or any other legal entity.

The present tense includes the future tense, the singular number includes the plural, and the plural number includes the singular, unless the context clearly indicates to the contrary.

The word "shall" is a mandatory requirement.

The word "may" is a permissive option.

The word "should" is a preferred option.

The words "used" or "occupied" include the words intended, designed, or arranged to be used or occupied at a future point in time.

The word "herein" means in these regulations.

The word "regulations" means The Standard Specifications and Procedures for the Design and Construction of Subdivision Roads in Geauga County, Ohio unless specifically indicated as the regulations of another department, agency, or jurisdiction.

62.0 Words and Terms Defined

AASHTO: the American Association of State Highway and Transportation Officials.

Board of County Commissioners: the County Commissioners of Geauga County.

Board of Township Trustees: a Board of Township Trustees of a Township located within Geauga County, Ohio.

Bridge: Any structure, including supports of 10 feet or more, clear span of 10 feet or more in diameter on, above, or below the road right-of-way. The span of all bridges will be measured along the centerline of the road right-of-way.

Clerk: the Clerk for the Geauga County Board of Commissioners.

Common Land: land set aside in a subdivision or development created for common usage by residents within the subdivision or development and controlled by a private corporation or by an association with restrictions, easements, covenants, or other conditions running with the land.

Construction Drawings: a drawing or a proposed design of work to be performed.

Construction Estimate: the estimate of cost for construction and related items submitted by the developer's engineer.

Construction Manager: the Developer's designated representative responsible for coordination and accomplishment of planning, design and construction. The Construction Manager shall be responsible for the administration and fulfillment of all aspects of the construction project.

Construction Schedule: the expected progression of the construction project as submitted by the developer's engineer or Construction Manager.

County: Geauga County, Ohio.

County Auditor: the Auditor of Geauga County.

County Building Department: the Building Department of Geauga County.

County Prosecutor: the County Prosecutor of Geauga County.

County Recorder: the County Recorder of Geauga County.

County Sanitary Engineer: the County Sanitary Engineer of Geauga County.

County Treasurer: the County Treasurer of Geauga County.

Cul-de-sac: a local street, one end of which connects with another street and the other end of which terminates in a vehicular turnaround, the construction of which conforms with the rules, regulations, and standard specifications for road improvements adopted by the Board of County Commissioners pursuant to R.C. 711.101.

Developer: any person, partnership, firm, syndicate, trust, corporation, or other legal entity commencing proceedings under these regulations to effect the subdivision and improvement of land.

Developer's Engineer: a professional engineer, licensed in the State of Ohio, hired by the Developer for the preparation of improvement plans for his/her development.

Development: the subdivision land with the intent to erect structures thereon.

Drainage Maintenance District: As outlined in Appendix A, 'Request for Establishment of Drainage Maintenance District Pursuant to O.R.C. §6131.63, et seq.'

Drainage Map: a pictorial drainage study depicting the areas draining through each drainage improvement superimposed over a topographic drawing of that area. Each drainage area shall be shown in a separate color and the acreage of each such area shall be noted thereon.

Easement: the right of a person, corporation, partnership, government agency, or public utility company to use public or private land owned by another for a specific purpose.

Engineer: the Geauga County Engineer or the authorized agents of the Engineer.

Final Plat: the final map of a proposed subdivision prepared by a registered surveyor for a developer which is presented to the Planning Commission for review and action in accordance with County Planning Commission regulations and Chapter 711 of the Ohio Revised Code.

GCE Standard Drawings: standard detailed drawings related to design and construction as required by the Geauga County Engineer's Office. Available upon request through the Engineer's Office.

Improvements: construction of facilities for roads and placement of iron pins and monuments in accordance with the specifications of the County Engineer, the installation of sewer and water facilities in accordance with the County Sanitary Engineer's specifications, and the extension of public utilities.

Inspection Surety: cash or certified check deposited to cover inspection costs, and laboratory fees.

Laboratory: a testing laboratory approved by the Engineer for testing materials used in the proposed construction of roadway improvements.

Lot: a parcel of land created for the purpose of sale, lease, separate use, or ownership either existing or proposed and described on a subdivision plat, survey map, or by metes and bounds on a deed. Such parcel shall meet current applicable minimum zoning requirements of use, coverage, area, yards, width, depth, frontage and open space. Such parcel shall have sufficient frontage on an existing recorded public or private road.

Maintenance Guaranty: cash, certified check, or certificate of deposit, posted to insure the correction of any deficiencies that may arise during the maintenance period.

Monument: a permanent survey marker according to minimum standards for surveying as established under Chapter 4733-37 of the Ohio Administrative Code.

ODOT: the Ohio Department of Transportation

ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS: the current edition of the Ohio Department of Transportation Construction and Material Specifications.

ODOT L & D Manual: the Ohio Department of Transportation Location and Design Manual.

ODOT Standard Drawings: the book published by the Ohio Department of Transportation containing the standard construction drawings.

OMUTCD: the Ohio Manual of Uniform Traffic Control Devices, published by the Ohio Department of Transportation.

Planning Commission: the Geauga County Planning Commission.

Plat: a map of a tract or parcel of land drawn by a registered surveyor, licensed in the State of Ohio, in accordance with Planning Commission regulations adopted pursuant to Chapter 711 of the Ohio Revised Code and Chapter 4733.37 of the Ohio Administrative Code.

Preliminary Plan: a map of a proposed subdivision prepared by a registered surveyor in

accordance with the Planning Commission regulations, which may include other explanatory exhibits and tests, and is submitted to the Planning Commission for its review and comment. Said preliminary plat, if accepted by the Planning Commission, shall provide the basis for proceeding with the preparation of the final plat of the proposed subdivision.

Private Street or Road: a street or road, including a new easement of access, subject to platting in accordance with the Planning Commission's regulations and held in private ownership for which the state, county, or township shall not assume any maintenance responsibility. The construction of a private street or road shall be constructed in accordance with these regulations.

Professional Engineer: an engineer authorized to practice engineering by virtue of registration under the statutes of the State of Ohio.

Professional Surveyor: a surveyor authorized to practice surveying by virtue of registration under the statutes of the State of Ohio.

Public Street or Road: a street or road, subject to platting in accordance with the Planning Commission's regulations, and dedicated to public use for which the state, county, or township shall assume maintenance responsibility upon completion of the street or road and after acceptance for dedication. Public streets or roads shall be constructed in accordance with these regulations.

Right of Way: all land included within an area dedicated to public use as a road or street, or land reserved as an easement for private use as a road or street for ingress and egress. In addition, right-of-way may also include within its boundaries drainage facilities, public utilities, sewer lines, waterlines, and pavement.

Sediment Control Plan: the Geauga County Soil & Water Conservation District Water Management & Sediment Control Plan, per current edition of Geauga County Water Management and Sediment Control Regulations.

Slope: the degree of deviation of the earth's surface from the horizontal, which is usually expressed in percent, degree or ratio.

Soil & Water Conservation District: the Geauga Soil and Water Conservation District.

Subdivision Regulations: the Subdivision Regulations of Geauga County, current edition as adopted and published by the Geauga County Planning Commission.

USGS Maps: topographic maps published by the United States Geological Survey.

Variance: a modification of the strict terms of the relevant provisions of these regulations where such modification will not be contrary to the public interest and where owing to conditions peculiar to the property and not the result of any actions of the applicant the enforcement of these regulations would result in an unnecessary and undue hardship.

Wetlands: Affirmation of site delineation/permit by U.S. Army Corp. of Engineers and Ohio Environmental Protection Agency (OEPA).

70.0 SUBMISSION REQUIREMENTS

71.0 Other Agency Regulations

Developers shall be cognizant and adhere to all other applicable agency regulations including, but not limited to, the Planning Commission, Geauga Soil and Water Conservation District, Geauga County Department of Water Resources, U.S. Army Corp of Engineers, Ohio Environmental Protection Agency (OEPA), Ohio Department of Natural Resources (ODNR).

72.0 Submittal Requirements

After the acceptance of the preliminary plan by the Planning Commission, the developer shall secure the approval of the construction drawings and schedule from the Board of County Commissioners. Said approval shall be a condition precedent to final plat approval by the Planning Commission. Two (2) sets of the construction drawings and schedule along with an electronic copy (in AutoCAD) of the drawings shall be submitted to the Engineer that include the following:

72.06 The 'REQUEST FOR ESTABLISHMENT OF DRAINAGE MAINTENANCE DISTRICT' form (Appendix A), an estimate of cost for all of the storm water improvements, along with the plan sheet(s) and details showing all of the storm water structures and facilities, first year's assessment for all sub lots, shall be completed and presented with the construction plans for approval.

Permanent easements for the purpose of maintenance of the storm water structures and facilities shall be on the recorded final plat.

72.1 All drawings shall be governed by the ODOT L & D Manual except as modified in these regulations. All drawings shall be in ink on mylar film sized per ODOT L & D Manual. A title sheet with the name of the subdivision, the township, the developer's name and address, the design firm, a small scale drawing of the subdivision roads and location, index, original benchmark used and signature approval lines, shall be submitted with all drawings. The professional engineer responsible for the preparation of the construction drawings shall sign, date, and affix their registration stamp to each sheet.

72.2 A complete study of the contributing drainage area shall be prepared depicting the area draining through each drainage improvement superimposed over a topographic drawing. Each such area shall be color outlined and indicate the number of acres contained in each area. Photocopies of all data and calculation sheets must be included together with the methodology employed to determine runoff and structure size. The drainage map shall also contain the grading plan and waste area locations if applicable. An approved Wetlands Permit from the U.S. Department of the Army, Corps of Engineers, when required, shall be submitted with the construction plans to the Engineer.

72.3 Except as otherwise provided, bridge design shall be governed by the ODOT Bridge Design Manual. All shop drawings and structural calculations shall be submitted to the County Engineer for review prior to approval.

72.4 Prepare plan and profile of all roads on standard plan and profile sheets. Said sheets shall show the plan at the top half and profile at the bottom half. Horizontal scale shall be 1" = 50'. Vertical scale shall be 1" = 5'.

The plan portion of the sheet shall show the road centerline, boxless monument locations, stations, road names, subplot lines and numbers, right-of-way boundaries, wetland boundaries, existing ponds and streams, utility easements, pavement, shoulders, curbs, gutters, storm and sanitary sewer easements, storm and sanitary structures, waterlines, ditch lines, bridges, culverts, drive pipe location, size and length, erosion protection measures, guardrail, any existing road features, benchmarks, Point of Curvature (P.C.), Point of Tangency (P.T.), and Point of Intersection (P.I.) locations, curve data, construction limits, and construction notes.

The profile portion of the sheet shall show elevation information including but not limited to centerline stations, original ground profile on centerline, proposed centerline profile grade, ditch profile left and right sides, vertical curve data with K factor and design speed, storm sewers and structures, sanitary sewers and structures, waterlines, bridges, and culverts.

72.5 A typical section shall show design elements of the road construction. The information for the Typical Section shall be selected from the Typical Sections in Appendix A.

72.6 A general summary table listing all proposed quantities according to ODOT specifications shall be included. Calculations shall also be included.

72.7 Cross sections shall be included for all non-typical sections. The horizontal and vertical scales shall be 1" = 5'.

72.8 Profile drawings are required along all culverts a minimum of 50' along the stream from the centerline or as needed, 1" = 5' for vertical and 1" = 10' for horizontal scales.

72.9 Include detail drawings of special construction such as required non-typical headwalls, concrete aprons, retaining walls, etc., and other construction requiring extra details. In case of doubt, whether a particular drawing is necessary, consult with the Engineer.

72.91 Proposed utility plans shall be submitted along with the construction drawings and schedule for the approval of the Engineer prior to installation.

72.92 Water Management and Sediment Control (WMSC) Plan shall be submitted to the Geauga Soil and Water Conservation District as required by the Gauga County Soil Sediment Pollution Control Regulations. The WMSC plan must be approved prior to the approval of the construction drawings and schedule.

72.93 A construction schedule showing the starting and completion dates for each phase of the construction work, including a date for the completion of the entire project is required. (See Appendix A for a sample schedule.)

72.94 An estimate of cost for the proposed construction improvements. (See Appendix A for sample estimate.)

73.0 Review Fees:

The cost of reviewing and checking the construction drawings and schedule submitted to the Engineer for approval shall be paid by the developer at the rate of actual cost. The County Engineer will give an itemized statement to the developer upon request. Review fees incurred, shall be paid before approval of the construction drawings.

80.0 APPROVAL

81.0 Approval of the Construction Drawings, Schedule, and Construction Manager:

81.1 Plan Submission

The Engineer will stamp the date of submission on the drawings and construction schedule when they are received and shall, within twenty (20) working days, schedule a meeting with the developer or their authorized representative to review said drawings and schedule. If the construction drawings and schedule are not acceptable to the Engineer, a list of requested revisions and/or corrections will be provided. The drawings and/or schedule may then be amended by the developer or their representative and resubmitted. When the construction drawings and schedule are acceptable to the Engineer, he shall inform the Board of County Commissioners of this recommendation in writing.

81.2 Plan Approval

The Board of County Commissioners shall review the recommendation and by resolution, take action thereon approving or disapproving the construction drawings and schedule. If disapproved, the Board in their motion shall instruct the Commissioner's Clerk to specify the grounds for refusal and the note thereon any violation of these regulations. The Clerk shall notify the developer, the Engineer, the Planning Commission, and the Soil and Water Conservation District of such action in writing. Once the construction drawings have been approved, the final plat may be submitted to the Planning Commission. The developer shall secure final plat approval before commencing any construction activity.

81.3 Construction Manager

The developer shall designate at the time of the submission of the construction schedule, a Construction Manager who shall direct the work on site. The Construction Manager shall be a person knowledgeable in roadway improvement construction. The Construction Manager shall be approved by the Engineer. Should the Construction Manager prove incompetent, the Engineer may request a replacement.

82.0 Insurance

The developer shall further agree to indemnify Geauga County and to carry comprehensive general liability insurance covering premises, operations, products and completed operations. The insurance carrier shall have AM Best B+ rating or better and be acceptable to the Board of County Commissioners. The Developer shall carry minimum liability limits of \$1,000,000 combined single limit bodily injury and property damage coverage and shall name Geauga County, its Board of County Commissioners, and the Engineer as additional insured.

The developer agrees to provide the Board of County Commissioners with a Certificate or Memorandum of Insurance evidencing that said insurance is in force and will be kept current for the duration of the project naming them as additional insured.

83.0 Inspection Surety

Upon approval the developer shall submit to the Engineer an inspection surety in the form of cash or a certified check in the name of the Geauga County Engineer in an amount set by the Engineer, not to exceed five (5) percent of the approved estimated cost of installing the proposed improvements. In no case shall the amount of the surety be less than \$2,500.00. The amount deposited will serve as a surety to cover inspection costs, testing, and laboratory fees.

84.0 Pre-construction

After final plat approval has been granted by the Planning Commission, and upon receipt of the inspection surety the developer and/or their Construction Manager will be given notice of the pre-construction meeting to be held at the site of the subdivision. At this meeting, authorization will be given to proceed with construction by the Engineer.

85.0 Modification:

The Board of County Commissioners may permit a variance to these rules, regulations and specifications. The developer shall file a written request for variance with the Engineer prior to the submittal of the construction drawings and schedule. The Engineer shall review the request and forward a recommendation to the Board of County Commissioners. The Board of County Commissioners may grant the request for variance if the developer has met their burden of

demonstrating the existence of unusual or exceptional factors, which warrant modification of the standard of these rules and regulations. Financial hardship does not constitute a reason for a variance.

If the variance requested is granted, the Board of County Commissioners shall record its conclusions stating therein the specific provisions of these rules to be modified, the reasons for granting, and the standard imposed upon the developer for the provisions modified. The Board of County Commissioners shall within ten (10) days of the resolution granting or denying the variance, inform the Engineer, the Planning Commission, Township Trustees, and Soil and Water Conservation District of their action by sending a copy of their resolution.

86.0 Inspection:

Two (2) days before the start of each major phase of construction, as listed on the construction schedule, the Construction Manager shall notify the Engineer so that an inspection may be scheduled. Failure to notify the Engineer may result in requiring the complete removal of any uninspected work.

The Engineer shall determine the amount of inspection, including laboratory and other tests, required to assure the developer or their contractors will comply with the approved drawings and schedule. All work shall be performed during daylight hours. The cost of inspection fees shall be actual cost. The Engineer will give an itemized statement to the developer upon request.

87.0 Requirements for Dedication:

Upon completion of the improvements, including utility installation, the developer shall notify the Engineer in writing that all improvements have been completed.

87.1 Notification of Dedication Inspection:

Upon receiving this notification, the Engineer shall apprise the Board of County Commissioners, Board of Township Trustees, and the Soil and Water Conservation District, and schedule a date and time for an inspection of the site.

87.2 Dedication Inspection:

If the Engineer determines that the improvements are not in conformity with all applicable regulations and the approved drawings and schedule, the developer shall be advised in writing of the deficiencies and this procedure shall be repeated until it is determined by the Engineer that the improvements have been satisfactorily completed.

87.3 As Built:

“As built” construction drawings will be required prior to acceptance. The Engineer will return the original mylars to the Developer's Engineer for the required corrections. These mylars along with an electronic copy (in AutoCAD) of the drawings shall be resubmitted to the Engineer.

87.4 Affidavits:

The developer will be required to submit an affidavit stating all bills incurred pertaining to the improved subdivision have been paid. The Board of County Commissioners shall not approve or accept the improvements or the dedication of any land for road purposes until any lien attached pursuant to Section 5553.31, Ohio Revised Code, has been satisfied.

The developer shall submit a surveyor's affidavit stating that all surveying has been completed in strict accordance with the final plat and construction drawings (see Section 90.0). Affidavit forms can be found in the Appendix of this document.

87.5 Maintenance Guaranty:

Upon satisfactory completion of the improvements, but before the Board of County Commissioners and the Engineer accept the improvements, the developer shall provide a maintenance guaranty in cash, certified check, or certificate of deposit. The amount shall be set upon recommendation of the Engineer, by the Board of County Commissioners. The cash or certified check shall be kept by, and under the exclusive control of, the Clerk of the Board of County Commissioners.

The Maintenance Guaranty shall be a security for the correction or repair of all construction defects or deficiencies discovered in the improvements during a minimum period of one (1) full year after acceptance of the improvements by the Board of County Commissioners. The Maintenance Guaranty period shall include one continuous winter season.

87.6 Pavement Guaranty

Along with the Maintenance Guaranty the developer shall provide a pavement guaranty in cash, certified check, or certificate of deposit for the remaining paving work to be completed, as agreed to in the pavement guaranty form, see Appendix A. The amount shall be set upon recommendation of the Engineer, by the Geauga County Board of Commissioners. The cash or certified check shall be kept by, and under the exclusive control of, the Clerk of the Board of County Commissioners.

The Pavement Guaranty shall be a security for the completion of the remaining paving work, as described.

87.7 Plat Approval:

Prior to the submittal for the Engineer and the Board of County Commissioners final approval, the plat shall be approved by the Planning Commission for meeting the Geauga County Subdivision Regulations and the Tax Map Office for meeting Geauga County Conveyance Standards.

The Engineer shall endorse the final plat to evidence acceptance of roads shown thereon and to acknowledge that the plat meets the minimum standards for subdivision plats codified in Chapter 4733-37 of the Ohio Administrative Code.

The Board of County Commissioners, after receiving the Engineer's endorsement, shall by resolution stated upon the record of the Board, accept the improvements for public use. If the improvements are for private use, the resolution shall reflect that the improvements are in conformity with the regulations but shall be maintained at private expense.

This endorsement of the final plat by the Board of County Commissioners, Engineer and the County Sanitary Engineer if there are water and/or sewer improvements, signifying approval and acceptance of the improvements in conformity with the approved construction plans, schedule and these regulations shall be and is a condition precedent to the sale or lease of lots in a subdivision, and to the issuance of a building permit for the improvement of a lot. No final plat shall be released for recording until it has been approved by the Board of County Commissioners in accordance with these regulations.

The Board of County Commissioners shall within ten (10) days of approval and written acceptance of the improvements, inform the Engineer, the Planning Commission, Township Trustees, Soil and Water Conservation District and Building Department of their action, by sending a copy of the Board's resolution.

88.0 Snow and Ice Removal:

The developer is responsible for snow and ice removal of the roads before acceptance of the improvements by the Board of County Commissioners. After acceptance, snow and ice removal shall be assumed by the political subdivision designated to maintain the road.

89.0 Final Acceptance:

After the Maintenance Guaranty period, a final inspection of the site shall be scheduled and the Engineer shall apprise the developer, Board of County Commissioners, Board of Township Trustees and the Soil and Water Conservation District of said inspection.

The developer shall be advised, in writing, of any deficiencies. When the deficiencies are corrected and meet these standards the developer shall perform the work described in Section 87.6 Pavement Guaranty. If upon written notice from the Engineer, the developer fails to timely perform the necessary reconstruction or maintenance, the Engineer shall notify the Board of County Commissioners, which shall be authorized to use the maintenance guaranty posted to complete the necessary work either by bid to an independent contractor, or by reimbursement to the Engineer, or by a combination thereof. If the cost of the work performed exceeds the amount of the maintenance guaranty and/or the pavement guaranty, the Board of County Commissioners shall make written request to the County Prosecutor to take the necessary legal action.

89.1 Release of Maintenance Guaranty:

After all maintenance and restoration work has been completed to the satisfaction of the Engineer, the Engineer shall recommend the Board of County Commissioners return the maintenance guaranty or that portion remaining.

89.2 Release of Pavement Guaranty:

After the final wearing surface has been completed to the satisfaction of the Engineer, the Engineer shall recommend to the Board of County Commissioners to return the pavement guaranty, after all maintenance and restoration work has been completed to the satisfaction of the Engineer. The Board of County Commissioners, after acceptance by resolution, shall designate the political subdivision to assume total maintenance of the road dedicated for public use.

90.0 SURVEYING

90.1 General:

Only Professional Surveyors and Professional Engineers registered in the State of Ohio shall be employed for surveying and engineering. All surveys shall conform with Chapter 4733 of the Ohio Administrative Code and the Transfer and Conveyance Standards of Geauga County.

90.2 Monuments:

Monuments shall be set at all subdivision corners and iron pins at subplot corners. Centerline monuments shall be set at all center line Point of Curvature and Point of Tangency locations, at all centerline intersections, and other locations necessary to establish line of sight between monuments. The Engineer may require other monuments or iron pins to be set in the subdivision. Monuments in pavement shall be approved by the Engineer, see the GCE Standard Drawings for the boxless pavement monument details. Sublot corner monuments shall be of the size and type required by Ohio Law. Other types of markers or monuments may be used if approved by the Engineer. All monuments and iron pins set shall have Surveyors identification caps. Subdivision corner and benchmark monuments shall be encased with concrete at least 6" in diameter and 30" in depth. Cast in place monuments shall be cast in bell-bottom holes to prevent frost lifting, and shall have formed tops. Monuments and iron pins that could be disturbed by the grading work may be set after the grading work is completed.

All monuments and iron pins shall be identified on the final plat, and shall be in place at the time the road(s) and other improvements are inspected for acceptance by the Board of County Commissioners. The surveyor of record of the installation of required monuments shall submit an affidavit stating that all monuments have been installed in strict accordance with the final plat approved by the Planning Commission.

Modification to the ODOT L & D Manual

Minimum Standards

VOLUME ONE

100 DESIGN CONTROLS and EXCEPTIONS

104.2 Design Speed

35 MPH

105.0 Design Exceptions

See Section 85.0 of STANDARD SPECIFICATIONS

200 HORIZONTAL AND VERTICAL DESIGN

201.3 INTERSECTION SIGHT DISTANCE (ISD)

The intersection sight distance for posted and unposted unimproved roads shall be based upon a design speed determined by the County Engineer.

202.3 HORIZONTAL ALIGNMENT

Minimum Radius: 250 ft.

203.2.1 MAXIMUM GRADES:

Residential: 10%

Collector: 8%

Industrial: 6%

203.2.2 MINIMUM GRADES:

Normal: 0.50%

Curbed: 1.00%

300.00 CROSS SECTION DESIGN

SEE APPENDIX A FOR TYPICAL CROSS SECTION

307.3 DITCHES:

Depth: 2.5 ft.

Minimum Grade: 1.00%

400.00 INTERSECTION DESIGN

401.3 CROSS ROAD ALIGNMENT

Minimum Intersection Angle: 75°

Minimum Tangent Length: 100 ft.

401.5 APPROACH RADII

30 ft. intersection, R/W Radii; 50 ft. pavement radii

40 ft. cul-de-sac, R/W Radii; 60 ft. pavement radii

CUL-DE-SACS

OPEN: Right-of-Way 100 ft. Radius

Inside Edge of Pavement: 56 ft.

Outside Edge of Pavement: 80 ft.

CLOSED: Right-of-Way 75 ft. Radius

Outside Edge of Pavement: 55 ft.

Commercial/Industrial Park Roads Solid Cul-de-sac only

600.00 ROADSIDE DESIGN (See Appendix A for Typical Section)

602.1.1 LOCATION

4 feet (Minimum) 6 feet (maximum) from Edge of Pavement

603.1.2 Semi Rigid Barriers

Type MGS guardrail

603.3.5 MGS Type T Assembly with Rounded-End Section

800.00 ACCESS CONTROL, R/W USE PERMITS AND DRIVE DESIGN

802.1.1 APPROVALS AND AGREEMENTS

Submit ODOT Entrance Permit with Construction Plans

802.1.4 RIGHT OF WAY USE PROHIBITIONS

Right of Way and Utility Easements shall be cleared of all obstructions

804.0 DRIVE PROFILE DESIGN

See the GCE Standard Drawings for Typical Drive Profile

VOLUME TWO

1000.0 DRAINAGE DESIGN POLICIES

1001.0 HYDRAULIC DESIGN POLICY

No road shall be built across a dam and no dam or out fall shall be built within the right-of-way.

1002.3.1 TYPE A CONDUIT:

All pipe shall meet the requirements of Section 706 of the C&MS for reinforced concrete pipe.

Minimum Size: 15 in. Use 12 in. for draining open cul-de-sac

1002.3.2 TYPE B CONDUIT:

All pipe shall meet the requirements of Section 706 of the C&MS for reinforced concrete pipe.

1002.3.3 TYPE C CONDUIT:

Pipe meeting 707.33 shall be used.

Pipe meeting 707.12 (CMP) is not acceptable

1002.3.5 TYPE E CONDUIT:

Pipe meeting 707.45 shall be used.

Pipe meeting 707.01 or 707.02 (CMP) is not acceptable.

1004.2 DESIGN YEAR FREQUENCY:

Bridges	50 Year
Culverts	25 Year
Drivepipe	10 Year

1102.3.2 DITCH PROTECTION

Excelsior matting shall be used in all ditches

1114.0 TEMPORARY SEDIMENT AND EROSION CONTROL

1114.1 GENERAL

See GEAUGA COUNTY WATER MANAGEMENT AND SEDIMENT
CONTROL REGULATIONS adopted by the SOIL & WATER
CONSERVATION DISTRICT

VOLUME THREE

1203.0 STANDARD DRAWINGS

1203.1/1302.10 STANDARD CONSTRUCTION DRAWINGS

The most current edition of the State of Ohio Department of Transportation Construction and Material Specifications and standard drawings shall govern construction except where modified in these regulations and the current edition of the Modifications to the Ohio Department of Transportation's Construction and Material Specifications for Geauga County.

1305.0 GENERAL NOTES AND SPECIAL PROVISIONS

1305.1 GENERAL NOTES

General Notes shall be included in the construction plans. A sample listing of notes has been provided in Appendix A.

Modifications to the ODOT Pavement Design Manual (PDM)

See Typical Sections in Appendix A

APPENDIX A

TABLES, TYPICAL DRAWINGS & BLANK FORMS

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Minimum Roadway Specifications for Subdivisions	A-1
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Sample Schedule of Construction	A-7
Maintenance Guaranty	A-8 & A-9
Payment of Bills Affidavit	A-10
Surveyor Affidavit	A-11
Pavement Guaranty	A-12, A-13, & A-14
Request to Establish DMD	A-16 & A-17

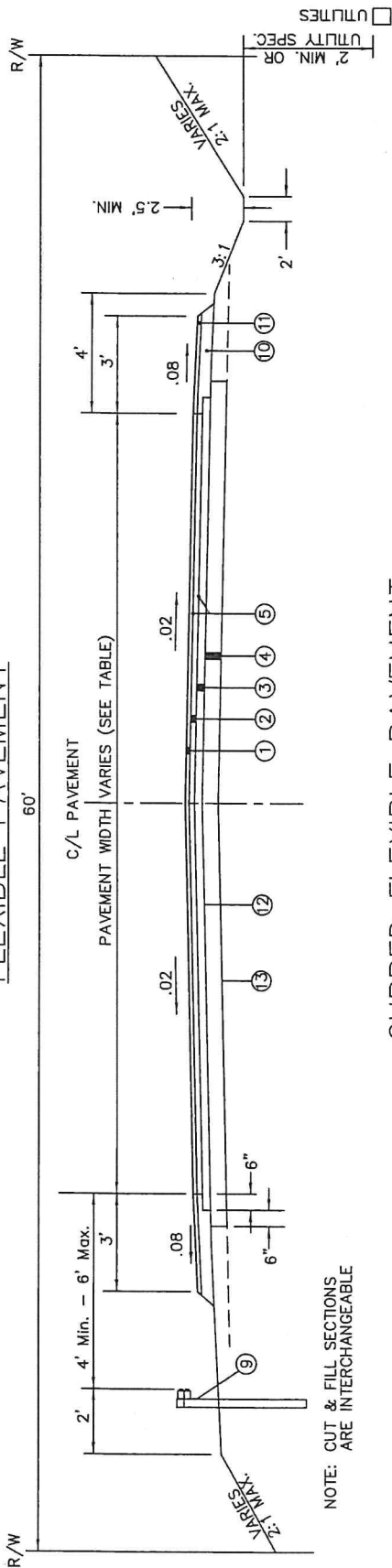
MINIMUM ROADWAY SPECIFICATIONS FOR SUBDIVISIONS

ROAD CLASSIFICATION	PAVEMENT WIDTH		PAVEMENT THICKNESS						AGGREGATE SHOULDER	
	CURBS (FEET)	NO CURBS (FEET)	REINFORCED CONCRETE			FULL DEPTH ASPHALT			304	411
			206*	451	304	206*	301	441(448)		
			CEMENT STABILIZED SUBGRADE (MINIMUM) (INCHES)	CONCRETE PAVEMENT (INCHES)	AGGREGATE BASE DRAINAGE LAYER (INCHES)	CEMENT STABILIZED SUBGRADE (MINIMUM) (INCHES)	ASPHALT CONCRETE BASE (INCHES)	ASPHALT CONCRETE SURFACE COURSE, TYPE 2 (INCHES)	AGGREGATE BASE DRAINAGE LAYER (INCHES)	STABILIZED CRUSHED AGGREGATE, LIMESTONE (INCHES)
RESIDENTIAL	26	22	N/A	N/A	N/A	12	6	2	4	8
COMMERCIAL/INDUSTRIAL PARK/ COLLECTOR	28	24	12	10	4	12	6	2	4	8
										1.5

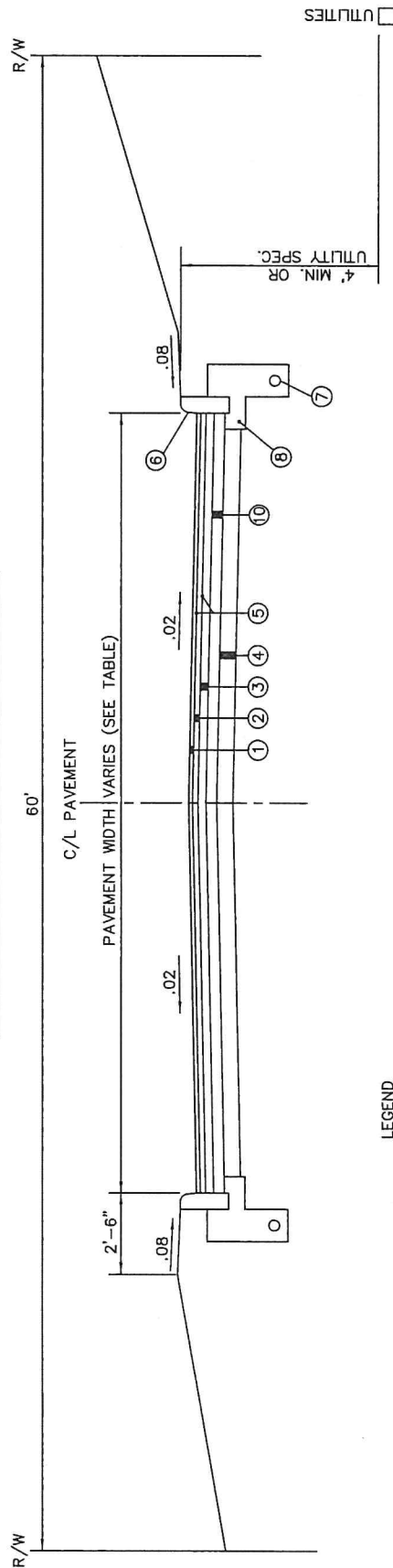
* SUBGRADE TO BE PROOF ROLLED PRIOR TO CEMENT STABILIZATION
 ** CURBED PAVEMENT SECTION ONLY

- COMMERCIAL AND INDUSTRIAL PARK ROADS ARE ROADS IN SUBDIVISIONS HAVING COMMERCIAL AND/OR INDUSTRIAL ENTERPRISES SERVED BY TRUCKS.
- NO ACBF (AIR COOLED BLAST FURNACE SLAG), GS (GRANULATED SLAG), ON (OPEN HEARTH SLAG), EAF (ELECTRIC ARC FURNACE SLAG), BOF (BASIC OXYGEN FURNACE SLAG), OR RPCC (RECYCLED PORTLAND CEMENT CONCRETE) MATERIALS WILL BE PERMITTED.

FLEXIBLE PAVEMENT



CURBED FLEXIBLE PAVEMENT



LEGEND

- ① ITEM 441 — ASPHALT CONCRETE, SURFACE COURSE, TYPE 1, (448) PG64-22, AS PER PLAN
- ② ITEM 441 — ASPHALT CONCRETE, SURFACE COURSE, TYPE 2, (448) PG64-22, AS PER PLAN
- ③ ITEM 301 — ASPHALT CONCRETE BASE (SEE TABLE APPENDIX A-1)
- * ④ ITEM 206 — CEMENT STABILIZED SUBGRADE (12" DEPTH MINIMUM)
- ⑤ ITEM 407 — TACK COAT (0.09 GAL/SY)
- ⑥ ITEM 609 — CONCRETE CURB, TYPE 6
- ⑦ ITEM 605 — 4" SHALLOW PIPE UNDERDRAIN, PERFORATED (SDR-35)
- ⑧ ITEM SPECIAL — #57 LIMESTONE
- ⑨ ITEM 606 — GUARDRAIL, TYPE MGS (TYPE T ANCHOR ASSEMBLY W/ ROUNDED-END SECTION)
- ⑩ ITEM 304 — AGGREGATE BASE (SEE TABLE, APPENDIX A-1)
- ⑪ ITEM 411 — STABILIZED CRUSHED AGGREGATE, LIMESTONE
- ⑫ ITEM 204 — SUBGRADE COMPACTION
- ⑬ ITEM 203 — ROADWAY EXCAVATION AND EMBANKMENT

* NOTE: A LARGER PERCENTAGE OF CEMENT AT GREATER DEPTHS MAY BE REQUIRED IN UNSUITABLE SUBGRADE LOCATIONS. SEE THE CURRENT EDITION OF THE MODIFICATIONS TO THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS FOR GEauga COUNTY.

[illegible][illegible]

* NOTE: A LARGER PERCENTAGE OF CEMENT AT GREATER DEPTHS MAY BE REQUIRED IN UNSUITABLE SUBGRADE LOCATIONS. SEE THE CURRENT EDITION OF THE MODIFICATIONS TO THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS FOR GAUGA COUNTY.

****NOTE: A) COARSE AGGREGATE FOR CONCRETE SHALL BE LESTONITE.
B) FIBER MESH REINFORCEMENT SHALL BE ADDED TO THE CONCRETE.
C) USE BASKETS WITH EPOXY DOWELS AT TRANSVERSE JOINTS.

- ① ITEM 451 — REINFORCED CONCRETE PAVEMENT
- ② ITEM 304 — AGGREGATE BASE
- ③ ITEM 206 — CEMENT STABILIZED SUBGRADE (12" DEPTH MINIMUM)
- ④ ITEM 204 — SUBGRADE COMPACTION
- ⑤ ITEM 203 — ROADWAY EXCAVATION AND EMBANKMENT
- ⑥ ITEM 609 — CONCRETE CURB, TYPE 2--A
- ⑦ ITEM 605 — 4" SHALLOW PIPE UNDERDRAIN, 707.45, PERFORATED
- ⑧ NOT USED
- ⑨ ITEM 606 — GUARDRAIL, TYPE MGS (TYPE T ANCHOR ASSEMBLY W
- ⑩ ITEM 304 — AGGREGATE BASE
- ⑪ ITEM 411 — STABILIZED CRUSHED AGGREGATE, LIMESTONE

SAMPLE

GENERAL NOTES

ALL WORK ON THIS PROJECT SHALL AT ALL TIMES BE SUBJECT TO THE DIRECT INSPECTION OF THE GEAUGA COUNTY ENGINEER OR AUTHORIZED REPRESENTATIVE OF THE ENGINEER.

ALL CONSTRUCTION AND MATERIALS INCLUDED IN THIS PROJECT SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF OHIO DEPARTMENT OF TRANSPORTATION'S CONSTRUCTION AND MATERIAL SPECIFICATIONS UNLESS SUPERCEDED BY THE MODIFICATIONS TO THE OHIO DEPARTMENT OF TRANSPORTATION'S CONSTRUCTION AND MATERIAL SPECIFICATIONS AND SUPPLEMENTAL SPECIFICATIONS FOR GEAUGA COUNTY AND THE STANDARD SPECIFICATIONS AND PROCEDURES FOR THE DESIGN AND CONSTRUCTION OF SUBDIVISION ROADS IN GEAUGA COUNTY.

THE STATIONING AND CENTERLINE INFORMATION SHOWN ON THE DRAWINGS ARE FOR CONSTRUCTION PURPOSES ONLY AND ARE NOT TO BE USED FOR RECORD PURPOSES.

ALL QUANTITIES LISTED ARE AN ESTIMATE FOR BIDDING PURPOSES. ACTUAL FINAL QUANTITIES MAY BE MORE OR LESS AS DEEMED NECESSARY BY THE ENGINEER FOR PROPER CONSTRUCTION.

THE BEDDING FOR THE TYPE "A" CULVERTS SHALL BE CLASS "B" AND THE SIZE NO. 57 AGGREGATE SHALL BE INSTALLED TO A DEPTH OF AT LEAST ONE-HALF THE DIAMETER OF THE CULVERT. BACKFILL FOR THE REMAINING TRENCH SHALL BE TAMPED OR COMPACTED EVERY 6 INCHES. RECYCLED CONCRETE, SLAG, OR SAND IS NOT ALLOWED.

O.D.O.T. ITEM 605 CLASSIFIED PIPE UNDERDRAINS SHALL BE INSTALLED UNDER THE PAVEMENT DRAINING TO THE ROADSIDE DITCH IF REQUIRED BY THE GEAUGA COUNTY ENGINEER.

THE ROADWAY SUBGRADE SHALL BE PREPARED IN ACCORDANCE WITH O.D.O.T. ITEM 203 – ROADWAY EXCAVATION AND EMBANKMENT. SUBGRADE SHALL BE PROOF ROLLED WITH ZERO DEFLECTION, PRIOR TO ANY CEMENT STABILIZATION OR PAVING.

SOIL STABILIZATION PARAMETERS SHALL BE APPROVED BY THE GEAUGA COUNTY ENGINEER PRIOR TO THE STABILIZING OF THE SUBBASE.

A PROFESSIONAL GEOTECHNICAL ENGINEER SHALL BE REQUIRED FOR SOIL BORINGS, SOIL ANALYSIS, AND SOIL COMPACTION WHERE THE GEAUGA COUNTY ENGINEER DEEMS NECESSARY.

GUARDRAIL LOCATIONS MAY BE ADJUSTED IN THE FIELD DURING CONSTRUCTION BY THE GEAUGA COUNTY ENGINEER.

THE AIR AND SURFACE TEMPERATURE SHALL BE AT LEAST 50° F FOR THE INSTALLATION OF THE O.D.O.T. ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1(448).

COARSE AGGREGATE IN O.D.O.T. ITEM 441 ASPHALT CONCRETE SURFACE COURSE, TYPE 1 SHALL BE VIRGIN LIMESTONE.

MONUMENT ASSEMBLIES SHALL BE BOXLESS PAVEMENT MONUMENTS PER THE GEAGAUGA COUNTY ENGINEER'S STANDARD CONSTRUCTION DRAWINGS. BOXLESS MONUMENTS SHALL BE INSTALLED AFTER FINAL SURFACE COURSE OF ASPHALT CONCRETE.

ITEM (441) ASPHALT CONCRETE SURFACE COURSE, TYPE 2 (448), PG 64-22 MAY BE PLACED, WITHOUT ITEM 407, IMMEDIATELY AFTER ITEM 301 ASPHALT CONCRETE BASE UNLESS SURFACE OF ITEM 301 IS NOT ACCEPTABLE TO THE ENGINEER.

ITEM (441) ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448) PG-64-22 SHALL BE PLACED WITH ITEM 407 APPROXIMATELY ONE YEAR AFTER DEDICATION OF THE ROAD. ITEM 411 COMPACTED LIMESTONE AGGREGATE, TYPE B SHALL BE PLACED AFTER SURFACE COURSE.

EXCELSIOR MATTING SHALL BE USED IN ALL DITCHES

**SAMPLE
ENGINEER'S ESTIMATE OF COST**

SUBDIVISION _____

TOWNSHIP _____

DATE _____

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	COST
201	Clearing and Grubbing	_____	LUMP	_____	_____
203	Utility Trenching	_____	L.F.	_____	_____
203	Utility Conduit	_____	L.F.	_____	_____
203	Excavation Not Including Embankment	_____	C.Y.	_____	_____
204	Subgrade Compaction	_____	S.Y.	_____	_____
207	Temporary Erosion and Sediment Control	_____	LUMP	_____	_____
301	Asphalt Concrete Base	_____	C.Y.	_____	_____
304	Aggregate Base	_____	C.Y.	_____	_____
407	Tack Coat	_____	GAL.	_____	_____
411	Stabilized Crushed Aggregate, Limestone	_____	C.Y.	_____	_____
441	Asphalt Concrete Surface Course, Type 1, (448) PG 64-22	_____	C.Y.	_____	_____
441	Asphalt Concrete Surface Course, Type 2, (448) PG 64-22	_____	C.Y.	_____	_____
601	Rock Channel, Type _____	_____	C.Y.	_____	_____
602	Concrete Masonry	_____	C.Y.	_____	_____
811	_____ " Conduit, Type _____	_____	L.F.	_____	_____
623	Boxless Monument	_____	EACH	_____	_____
605	Underdrains	_____	L.F.	_____	_____
606	Guardrail, Type _____	_____	L.F.	_____	_____
616	Dust Control, As Per Plan	_____	GAL.	_____	_____
651	Topsoil Stockpiled	_____	C.Y.	_____	_____
659	Seeding and Mulching	_____	S.Y.	_____	_____
670	Ditch Erosion Protection	_____	S.Y.	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

TOTAL _____

ESTIMATING ENGINEER _____

(SEAL)

SAMPLE

SCHEDULE OF CONSTRUCTION

SUBDIVISION _____

TOWNSHIP _____

DATE _____

DESCRIPTION	STARTING DATE	COMPLETION DATE
Clearing and Grubbing	_____	_____
Erosion Controls	_____	_____
Remove Topsoil	_____	_____
Embankment	_____	_____
Culvert Installation	_____	_____
Subbase Preparation	_____	_____
Install Base Asphalt	_____	_____
Install Intermediate Asphalt	_____	_____
Utility Installation	_____	_____
Finish Grade	_____	_____
Seed & Mulch	_____	_____
Install Berm	_____	_____
Install Surface Asphalt	_____	_____
Re-Berm	_____	_____
Install Monuments	_____	_____
Inspection for Acceptance		_____

SCHEDULING ENGINEER _____

MAINTENANCE GUARANTY

This agreement is made the _____ day of _____, 20_____, by and between the Board of Commissioners of Geauga County, Ohio, 470 Center Street, Bldg. 4, Chardon, Ohio, 44024 (hereinafter referred to as "Commissioners") and the _____ by and through _____, (hereinafter referred to as "Developer").

WHEREAS the Developer has concluded construction of the improvements within _____ Subdivision, and said improvements have been inspected by the County Engineer as specified in Section 87.2 of the Standard Specifications and Procedures for the Design and Construction of Subdivision Roads in Geauga County, Ohio (hereinafter referred to as "regulations"), and the County Engineer has indicated that the improvements appear to conform to the construction drawings, schedule and regulations and are appropriate for acceptance of snow and ice removal for a period not exceed eighteen months (hereinafter referred as "maintenance period")

WHEREAS the Developer wishes to provide a maintenance guaranty in conformity with Section 87.5 of the regulations so that the improvements may be approved by the Commissioners on the conditions hereinafter set forth, which guaranty has been recommended by the County Engineer in the amount of \$ _____;

NOW, THEREFORE, the Developer hereby tenders without reservation and the Commissioners hereby accept the following maintenance guaranty:

1. The Developer acknowledges the application of Section 87.5 of the regulations and assigns funds in the amount specified above as a guaranty or security for the correction by the Developer of any and all construction defects or deficiencies discovered in the improvements during the maintenance period. The funds are on deposit, under exclusive control of the Commissioners by and through its Clerk.

2. The condition of the above obligation is such, whereas the Developer shall well and faithfully do and perform any corrections, reconstructions, or alterations discovered during the maintenance period commencing on the day after acceptance of the roadway for snow and ice removal by the Commissioners, and shall pay all lawful claims of contractors, subcontractors, materialmen, and laborers for labor performed and materials furnished in carrying forward, performing, and completing of said work; then this obligation shall be void; otherwise the Commissioners will be at liberty and are hereby empowered to apply the funds herein provided as specified in Section 87.5 of the regulations without further legal action, it being expressly understood and agreed that the amount may exceed the amount of this obligation and if such is the case, the Commissioners may initiate legal action to recover the costs of funds expended which exceeded the amount provided hereunder necessary to the correction of the discovered construction defects or deficiencies.

The Developer hereby stipulates and agrees that no defects in the workmanship or action of any contractor, subcontractor, materialman, or laborer shall in anyway affect the obligations of the

Developer regarding completion of the improvements and correction of defects and deficiencies in conformity with the construction drawings and regulations adopted by the Commissioners.

WITNESSES:

BOARD OF COMMISSIONERS OF
GEAUGA COUNTY, OHIO

DEVELOPER

Print Name

TO: BOARD OF COUNTY COMMISSIONERS OF GEAUGA COUNTY

AFFIDAVIT

STATE OF OHIO)
) SS:
COUNTY OF GEAUGA)

_____, BEING FIRST DUTY SWORN ON OATH,
STATES that all bills arising out of the engineering, surveying, construction, improvement,
grading, seeding, and installation of utilities have been paid for the improvement of

_____ road(s) in the _____ Subdivision.

AND FURTHER AFFIANT SAITH NOT.

Owner and/or Developer

Sworn to before me and subscribed in my present this _____ day of
_____, 20_____.

Notary Public

My commission expires on _____