

to a subgrade using, where necessary, approved fill material in accordance with Wisconsin Department of Transportation standards. Roadside ditches, where allowed by the Village, shall be a minimum of twenty-six (26) inches below the finished roadway centerline elevation, or as approved by the Village Engineer. Debris may not be buried in the designated road right-of-way. Roadway ditches shall have a normal slope ratio of three-to-one (3:1) ditch from the edge of the shoulder to the bottom of the ditch and two-to-one (2:1) on the back slope.

**(8) Pavement Thickness.**

- a. Residential and rural-type roads shall have a minimum of three (3) inches thick compacted hot-mix asphalt concrete pavement, placed in two (2) layers — a binder course of one and one-half (1-1/2) inches thick and a surface course of one-half (1/2) inch.
- b. On commercial, arterial or other heavy-use roads, there shall be a minimum of three and one-half (3-1/2) inches of bituminous concrete pavement, placed in two (2) layers — a binder course of two (2) inches thick and a surface course of one and one-half (1-1/2) inches thick.
- c. The binder course being placed initially upon completion of the utilities, and the surface course being placed within one (1) year after the date the binder course was placed. Said surfacing shall be done in accordance with plans and standard specifications approved by the Village Board, upon the recommendation of the Village Engineer.
- d. In the case of commercial, arterial or other heavy-use roads, the Village Board may, in the alternative to the above standards, have the Village Engineer provide specifications for paving such roads with a greater thickness after researching the site(s) and conducting a soil analysis. In any case, the Village Board shall have the sole discretion in determining the use and construction classification to be adhered to. In no event shall paving occur later than eighteen (18) months from the Village's approval of the final or official plat. All subsequent shouldering where ditches are allowed shall be brought to even grade with bituminous mat.
- e. Contraction joints shall be tooled, saw cut, or formed by insertion of a metal plate in the concrete at intervals not exceeding twelve (12) feet and on each side of any structures located in the concrete (i.e. inlets).

**(9) Shoulder Width — Rural Profile Streets.**

- a. A shoulder a minimum of four (4) feet wide on each side of the road is required where curb and gutter is not used, and wider when required by the "Town Road Standards" as noted in Sec. 86.26, Wis. Stats.
- b. Where ditches are allowed, road shouldbrs shall have a minimum thickness of two and one-half (2-1/2) inches of compacted in-place crushed state-approved aggregate base course, over a minimum six (6) inches of compacted in-place crushed state-

approved aggregate base course, except that shoulder thickness shall match the thickness of the pavement, provided that there is a minimum shoulder thickness of six (6) inches.

- (10) **Roadway Culverts and Bridges.** Roadway culverts and bridges shall be constructed as directed by the Village Engineer and sized utilizing the methods listed in Chapter 13, entitled "Drainage," of the "Facilities Development Manual" of the Wisconsin Department of Transportation. All roadway culverts shall be provided with concrete or metal apron endwalls. The developer shall provided adequate facilities to provide surface water drainage as well as free flow outlets for subsurface drain tile where they are required. Where drainage facilities will aid in road construction and the stabilization of the road's subgrade, drainage facilities shall be installed before road construction is started. Existing condition status shall be based on a maximum of a Curve 70.
- (11) **Driveways.**
  - a. Curbs shall not be interrupted by openings for driveways or other accessways to private property unless the number and location of such interruptions have been approved pursuant to Title 6, Chapter 3 of this Code of Ordinances.
  - b. Driveway specifications shall be as prescribed in Title 6, Chapter 3 of this Code of Ordinances.
  - c. Driveway culverts shall be sized by the Village Engineer (if appropriate). The culverts shall be placed in the ditch line at elevations that will assure proper drainage, and they shall be provided with concrete, metal or landscape timber endwalls. Driveway culverts shall be installed as prescribed in Title 6, Chapter 3 of this Code of Ordinances.
- (12) **Topsoil, Grass, Seed, Fertilizer and Mulch.** All disturbed areas (ditches, backslopes) within the road right-of-way not provided with pavement and shouldering material shall be restored utilizing four (4) inches of topsoil and good quality grass seed, fertilizer and mulch. Ditches along the roadway shall be protected by erosion control materials such as hay bales, sod, erosion control mats, etc.
- (13) **Drainage Improvements.** In the case of all new roads and streets, the Village Engineer may require that storm water retention areas and storm sewers be constructed in order to provide for proper drainage.
- (14) **Continuity and Transitions.**
  - a. All street pavement widths on streets • continued from previously developed or platted streets shall, wherever practical, provide for the greater of either the existing or required pavement type, width, grade and cross slope.
  - b. Where it is necessary to provide for a transition of pavement width and/or type between new and existing streets, the transition shall occur in a safe manner at an intersection. In the event a transition in pavement width cannot safety occur at an intersection, it shall not occur closer than two hundred fifty (250) feet to the intersection of right-of-way lines. In width transitions, the ratio of the transition

length to width shall not be less than fifteen to one (15:1) unless the Village Engineer determines that special circumstances prevent use of such ratio, in which case the minimum transition ratio shall be ten to one (10:1).

**(15) Curb and Gutter.** Combination concrete curb and gutter is required on all streets. Curb and gutter in residential areas shall be either barrier type or mountable type. Barrier type curb and gutter shall have a six (6) inch barrier curb with a twenty-four (24) inch flag; except at driveway aprons where a depressed curb shall be constructed. Mountable type curb and gutter shall have been thirty (30) inches wide with an eighteen (18) inch flag. The top of the back of the mountable curb shall be three (3) inches above the gutter flowline. Depress curb shall be constructed at all handicap ramps for sidewalks and bikeways. Said curb and gutter shall be constructed of concrete, 3500 PSI strength at twenty-eight (28) days. Expansion joints one-half (1/2) inch thick shall be placed in the curb at each starting and ending of a radius and at intervals not exceeding three hundred (300) feet and where otherwise directed by the Village Engineer. Tie bars shall be provided where curb and gutter is adjacent to rigid pavements. The standards of Section 14-1-54 shall also be complied with.

**(16) Post-Construction Traffic Limited.** No vehicular traffic shall be permitted on the pavement for a minimum period of between twenty-four (24) and seventy-two (72) hours following paving, as determined necessary by the Village Engineer to protect the new pavement.

**(c) Selection of Alternative Design.** The Village Engineer shall select a pavement structure to be used after reviewing equivalent alternative pavement designs with the subdivider. The Village Engineer shall require one or more of the pavement designs of the subdivider based on the following criteria:

- (1) Life cycle cost.
- (2) History of similar pavements in the area.
- (3) Adjacent existing pavements.
- (4) Staging of construction.
- (5) Construction season.
- (6) Friction requirements.
- (7) Depressed, surface, or elevated design.
- (8) Higher governmental preference (e.g. if State Highway).
- (9) Stimulation of competition.
- (10) Conservation of materials.
- (11) Construction considerations.
- (12) Recognition of local industry.
- (13) Availability of materials and methods locally.

**(d) Final Inspection.** Upon completion of proposed streets, the Village Engineer will proceed to make a final inspection, accepting or rejecting the street as the case may be. After all of the provisions of this Chapter have been complied with, the street will be inspected by Village officials and, at that time, proof will be made by the presenting of waivers of liens

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or receipted bills that all work that has been done has been paid for, or arrangements have been made for the payment through written instrument by the subdivider. If the street is rejected, corrections shall be made as required by the Village Board, upon the Village Engineer's recommendation, before final inspection can then be made again. If final acceptance is then made, the owner or owners shall dedicate to the Village all land necessary for streets. The subdivider shall warranty the fitness of street improvements for one (1) year after construction.

**Sec. 14-1-72 Block Design Standards.**

- (a) Length; Arrangement.** The lengths, widths and shapes of blocks shall be appropriate for the topography and the type of development contemplated, but block length (measured in the long dimension from street centerline to street centerline) shall not be less than six hundred (600) feet nor exceed one thousand five hundred (1,500) feet nor have less than sufficient width to provide for two (2) tiers of lots of appropriate depth between street lines. Blocks shall be so designated as to provide two (2) tiers of lots, unless it adjoins a railroad, major thoroughfare, river or park where it may have a single tier of lots. Cul-de-sacs may be used where the interblock spacing of adjacent streets exceeds the appropriate depth of two (2) tiers of lots.
- (b) Pedestrian Pathways.** Pedestrian pathway easements not less than ten (10) feet wide, may be required by the Village Board through the center of a block more than nine hundred (900) feet long, where deemed essential to provide circulation or access to schools, playgrounds, shopping centers, transportation and other community facilities.
- (c) Street Tree Planting Strip Easements.** Tree planting strip easements shall be provided for on both sides of all streets when the street terrace is insufficient. The minimum easement width shall be ten (10) feet and shall be adjacent to the front property line. Street trees shall be maintained by the adjacent property owner in accordance with Village ordinances.
- (d) Sidewalks.** Sidewalks shall be constructed according to the standards in Section 6-2-2 of this Code of Ordinances. In areas where sidewalks and bikeways are to be laid to the established grade of the street, the street edge of the sidewalk or bikeway pavement shall be at an elevation above the top of the curb determined by a slope of one-half (1/2) inch per foot times the distance between the curb and the street sidewalk or bikeway edge. The sidewalk or bikeway pavement shall be sloped' at ,a minimum of one-fourth (1/4) inch per foot and a maximum of three-fourths (3/4) inch per foot toward the street — unless public drainage is available behind the sidewalk or bikeway.
- (e) Bikeways.** Bikeways shall be constructed of bituminous pavement, at least eight (8) feet in width, in accordance with standard Village specifications.

## Sec. 14-1-73 Lot Design Standards.

- (a) **Lot Dimension.** Area and dimensions of all lots shall conform to the requirements of the Village of Shiocton Zoning Code for the subdivisions within the Village and to the County Zoning Code for lands within the Village's extraterritorial jurisdictional limits. Those building sites not served by a public sanitary sewerage system or other approved system shall be sufficient to permit the use of an onsite soil absorption sewage disposal system designed in accordance with Ch. H83, Wis. Adm. Code. The width and area of lots located on soils suitable for the use of an onsite soil absorption sewage disposal system shall not be less than one hundred fifty (150) feet in width and forty thousand (40,000) square feet in area.
- (b) **Depth of Lots.** Excessive depth in relation to width shall be avoided and a proportion of three to two (3:2) shall be considered a desirable ratio under normal conditions. Depth of lots or parcels reserved or laid out for commercial or industrial use shall be adequate to provide for off-street service and parking required by the use contemplated.
- (c) **Width of Lots.** Width of lots shall conform to the requirements of the Village Zoning Ordinance, or other applicable ordinance, and in no case shall a lot be less than sixty (60) feet in width at the building setback line.
- (d) **Lands Lying Between Meander Line.** Lands lying between the meander line and the water's edge and any otherwise unplattable lands which lie between a proposed subdivision and the water's edge shall be included as part of lots, outlets or public dedications in any plat abutting a lake or stream.
- (e) **Commercial or Industrial Lots.** Depth and width of properties reserved or laid out for commercial or industrial purposes shall be adequate to provide for the off-street service and parking facilities required by the type of use and development contemplated, as required by the Village Zoning Code.
- (f) **Minimum Lot Frontage.** In addition to the standards in Subsection (c) above, all lots on curved streets or cul-de-sacs shall have a minimum Of forty (40) feet of platted frontage on a public street to allow access by emergency and service motor vehicles unless part of a Planned Unit Development approved by the Village Board. Alley frontage (public or private) shall not constitute meeting this minimum frontage requirement.
- (g) **Lots Where Abutting Arterial Highway.** Residential lots adjacent to major and minor arterial streets and highways and/or railroads shall be platted with an extra fifteen (15) feet of lot and an extra fifteen (15) feet of mininiunt yard setback and shall otherwise be designed to alleviate the adverse effects on residential adjacent lots platted to the major street, highway, railroad or other such features.
- (h) **Corner Lots.** Corner lots for residential use shall have extra width of fifteen (15) feet to permit full building setback from both streets, or as required by applicable zoning regulations.
- (i) **Access to Public Street.** Every lot shall front or abut on a public street. Every lot shall front or abut on a public street for a distance of at least forty (40) feet.

- (j) **Side Lots.** Side lot lines shall be substantially at right angles to or radial to abutting street center lines. Lot lines shall follow Village boundary lines.
- (k) **Double and Reversed Frontage Lots.** Double frontage and reversed frontage lots shall be avoided except where necessary to provide separation of residential development from traffic arteries or to overcome specific disadvantages of topography and orientation.
- (l) **Natural Features.** In the dividing of any land, regard shall be shown for all natural features, such as tree growth, water courses, historic spots or similar conditions which, if preserved, will add attractiveness and stability to the proposed development.
- (m) **Land Remnants.** All remnants of lots below minimum size left over after dividing of a larger tract must be added to adjacent lots, or a plan shown as to future use rather than allowed to remain as unusable parcels.
- (n) **Large Lots.** In case a tract is divided and results in parcels of more than twice the minimum lot size provided for by the Village Zoning Code for the zoning district in which the land is located, such parcels shall be so arranged to permit redividing into parcels in accordance with this Chapter and with the Zoning Code.
- (o) **Trunk Highway Proximity.** All lots adjacent to state trunk and federal highways shall be platted with additional depth necessary to provide for a building setback line not less than fifty (50) feet from the nearer right-of-way line or one hundred ten (110) feet from the centerline, whichever is more restrictive (Ref. Wis. Adm. Code HY 33). The subdivider may appeal this requirement to the Village Engineer. Upon written request of the Village Engineer; the Wisconsin Department of Transportation is hereby authorized to then determine building setback requirements equal to or less than those required above in all land divisions (including certified surveys) adjacent to state and federal highways in accordance with the authority granted in the Administrative Code. The required building setback line and additional lot depth shall be platted so as to accommodate such required building setbacks.
- (p) **Easement Allowance.** Lots containing pedestrian or drainage easements shall be platted to include additional width in allowance for the easement.
- (q) **Drainage Way and Watercourses.** Lots abutting upon water course, drainage way, channel or stream shall have such additional depth or width as required by the Village Engineer to obtain building sites that are not subject to flooding from a post development one hundred (100) year storm.

## **Sec. 14-1-74 Drainage and Stormwater Management System.**

### **(a) Purpose.**

- (1) The subdivider shall construct storm water drainage facilities, adequate to serve the subdivision which may include curbs and gutters, catch basins and inlets, storm sewers, road ditches, open channels, water retention structures and settling basins. All such facilities shall be of adequate size and grade to hydraulically accommodate the

- maximum potential volumes of flow and shall be so designed as to prevent and control soil erosion and sedimentation and to present no hazards to life or property.
- (2) Shoreland drainage facilities shall, if required, include water retention structures and settling basins so as to prevent erosion and sedimentation where such facilities discharge into streams or lakes. The design criteria, the size, type, grades and installation of all storm water drains and sewers and other cross-section, invert and erosion control paving check dams, flumes or other energy dissipating structures and seeding and/or sodding of open channels and unpaved road ditches proposed to be constructed shall be in accordance with the plans and standard specifications approved by the Village Engineer.
  - (3) The subdivider shall assume the cost of installing all storm sewers within the proposed subdivision, except for the added cost of installing storm sewers greater than those which are necessary to serve tributary drainage areas lying outside of the proposed subdivision. In addition, the subdivider shall pay to the Village, a storm sewer trunk line connection fee based on the added cost of installing larger sewers in the total tributary drainage area which shall be prorated in proportion to the ratio which the total area of the proposed plat is to the total drainage area to be served by such larger sewers.
  - (4) The following provisions in this Section are established to preserve and provide properly located public sites and facilities for drainage and stormwater management as the community develops, and to insure that the costs of providing and developing such public sites are equitably apportioned on the basis of serving the need for the management of increased stormwater quantities resulting from land development.
- (b) Drainage System Required.**
- (1) As required by Section 14-1-58, a drainage system shall be designed and constructed by the subdivider to provide for the proper drainage of the surface water of the land division and the drainage area of which it is a part. Post-development peak runoff rates shall be limited to pre-development levels, up to and including twenty-five (25) year return period storms. A Final Plat shall not be approved until the subdivider shall submit plans, profiles and specifications as specified in this Section, which have been prepared by a registered professional engineer and approved or modified by the Village Board, upon the recommendations of the Village Engineer.
  - (2) Lots shall be laid out so as to provide positive drainage away from all buildings, and individual lot drainage shall be coordinated with the general storm drainage pattern for the area. Drainage shall be designed so as to avoid concentration of storm drainage water from each lot to adjacent lots.
  - (3) The Village Board shall not approve any subdivision plat which does not provide adequate means for stormwater or floodwater runoff. Any stormwater drainage system will be separate and independent of any sanitary sewer system. Storm sewers, where necessary, shall be designed in accordance with all governmental regulations,

and a copy of design computations for engineering capacities shall accompany plans submitted by the planning engineer for the final plat. When calculations indicate that curb capacities are exceeded at a point, no further allowance shall be made for flow beyond that point, and basins shall be used to intercept flow at that point.

**(c) Drainage System Plans.**

- (1) The subdivider shall submit to the Village at the time of filing a Final Plat a drainage plan or engineering report on the ability of existing watercourse channels, storm sewers, culverts and other improvements pertaining to drainage or flood control within the subdivision to handle the additional runoff which would be generated by the development of the land within the subdivision. Additional information shall be submitted to adequately indicate that provision has been made for disposal of surface water without any damage to the developed or undeveloped land downstream or below the proposed subdivision. The report shall also include:
  - a. Estimates of the quantity of storm water entering the subdivision naturally from areas outside the subdivision.
  - b. Quantities of flow at each inlet or culvert.
  - c. Location, sizes and grades of required culverts, storm drainage sewers and other required appurtenances.
- (2) A grading plan for the streets, blocks and lots shall be submitted by the subdivider for the area within the subdivision.
- (3) The design criteria for storm drainage systems shall be based upon information provided by the Village Engineer.
- (4) Material and construction specifications for all drainage projects (i.e., pipe, culverts, seed, sod, etc.) shall be in compliance with specifications provided by the Village Engineer.

**(d) Drainage System Requirements.** The subdivider shall install all the storm drainage facilities indicated on the plans required in Subsection (a) of this Section necessary to serve, and resulting from, the phase of the land division under development:

- (1) Street Drainage.** All streets shall be provided with an adequate storm drainage system. The street storm system shall serve as the minor drainage system and shall be designed to carry street, adjacent land and building storm water drainage. Storm water shall not be permitted to be run into the sanitary sewer system within the proposed subdivision.
- (2) Off-Street Drainage.** The design of the off-street major drainage system shall include the entire watershed affecting the land division and shall be extended to a watercourse or ditch adequate to receive the storm drainage. When the drainage system is outside of the street right-of-way, the subdivider shall make provisions for dedicating an easement pursuant to Subsection (e) of the Village to provide for the future maintenance of said system.



- (e) **Protection of Drainage Systems.** The subdivider shall adequately protect all ditches to the satisfaction of the Village Engineer. Ditches and open channels shall be seeded, sodded or paved depending upon grades and soil types. (Generally ditches or channels with grades up to one percent [1%] shall be seeded; those with grades up to four percent [4%] shall be sodded and those with grades over four percent [4%] shall be paved.)
- (I) **Drainage Easements.** Where a land division is traversed by a watercourse, drainageway, channel or stream:
- (1) There shall be provided a storm water easement or drainage right-of-way conforming substantially to the lines of such watercourse and such further width or construction, or both, as will be adequate for the purpose and as may be necessary to comply with this Section; or
  - (2) The watercourse, drainageway, channel or stream may be relocated in such a manner that the maintenance of adequate drainage will be assured and the same provided with a storm water easement or drainage right-of-way conforming to the lines of the relocated watercourse, and such further width or construction, or both, as will be adequate for the purpose and may be necessary to comply with this Section; or
  - (3) Wherever possible, drainage shall be maintained in an easement by an open channel with landscaped banks and adequate width for maximum potential volume flow. In all cases, such easements shall be of a minimum width established at the high water mark or, in the absence of such specification, not less than thirty (30) feet.
- (g) **Dedication of Drainageways.** Whenever a parcel is to be subdivided or consolidated and embraces any part of a drainageway identified on a Village Comprehensive Storm Water Management Plan, master plan and/or official map or any portion thereof, such part of said existing or proposed public drainageway shall be platted and dedicated by the subdivider as an easement or right-of-way in the location and at the size indicated along with all other streets and public ways in the land division. Whenever any parcel is to be subdivided or consolidated and is part of a drainage district established under the authority of Chapter 88, Wis. Stats., the subdivider shall petition the Circuit Court to transfer the jurisdiction of that portion of the drainage district being subdivided or consolidated to the Village in accordance with Chapter 88.83, Wis. Stats.
- (h) **Dedication/Preservation of Storm Water Management Facilities.** The subdivider shall dedicate sufficient land area for the storage of storm water to meet the needs to be created by the proposed land development and in accordance with the standards for on-site detention and as determined by the Village Engineer. Whenever a proposed storm water management facility (e.g., detention or retention basin) shown on the Comprehensive Storm Water Management Plan, master plan and/or official map is located, in whole or in part, within the proposed land division, ground areas for providing the required storage capacity in such proposed public facility shall be dedicated to the public to the requirements of the master plan and/or official map. Storage areas necessary to serve areas outside the land division shall be held in reserve for a period of five (5) years from the date of final plat approval for future dedication to the Village or other appropriate agency.

**(i) Storm Drainage Facilities.**

- (1) The subdivider, at his/her cost, shall install all drainage facilities identified in the Erosion Control Plan or determined by the Village Engineer as being necessary for the management of all lands and roadways within the development. In addition, drainage capacity through the development from other areas shall be provided in accordance with a Comprehensive Surface Water Management Study, if applicable. All required storm drainage facilities shall be constructed and operational prior to acceptance of any dedications and/or public improvements served by the storm drainage facilities.
- (2) The subdivider shall submit to the Village Engineer for his/her review and approval a report on the ability of existing watercourse channels, storm sewers, culverts and other improvements pertaining to drainage or flood control within the land division to handle the additional runoff which would be generated by the development of the land within the land division. Additional information shall be submitted to adequately indicate that provision has been made for disposal of surface water without any damage to the developed or undeveloped land downstream or below the proposed land division. The report shall also include:
  - a. Estimates of the quantity of storm water entering the land division naturally from areas outside the land division.
  - b. Quantities of flow at each inlet or culvert.
  - c. Location, sizes and grades of required culverts, storm drainage sewers and other required appurtenances.
- (3) A grading plan for the streets, blocks and lots shall be submitted by the subdivider for the area within the land division.
- (4) The design criteria for storm drainage systems shall be reviewed by the Village Engineer and approved or modified.
- (5) Material and construction specifications for all drainage projects (i.e., pipe, culverts, seed, code, etc.) shall be in compliance with standards and specifications provided by Village ordinance and/or the Village Engineer.

- (j) **Minor Drainage System.** The subdivider shall install all minor drainage system components necessary to reduce inconvenience and damages from frequent storms. Minor drainage components shall include all inlets, piping, gutters, channels, ditching, pumping and other facilities designed to accommodate the post-development runoff resulting from a five (5) year, twenty-four (24) hour rainfall [ten (10) year, twenty-four (24) hour rainfall for commercial zoning district] event as determined in the most current edition of the Soils Conservation Service Technical Release 55 (TR 55). Temporary accumulations of storm runoff from ponding or flowing water, in or near minor system components, shall be permitted providing such accumulations do not allow the water to flow across the crown of the street from one side to the other. For arterial streets and streets located in commercial districts, ponding within normal traffic lanes [ten (10) feet on each side of the centerline of the street] is prohibited. In drainageways and drainageway easements,

accumulations of water shall not inundate beyond the limits of the drainageway or drainageway easement. Cross-street drainage channels (valley gutters) shall not be permitted except on cul-de-sac or permanent dead-end streets serving less than ten (10) dwelling units and where the minimum grade in the valley gutter and street gutter between the valley gutter and the next downstream drainage inlet is not less than one percent (1.00%).

(k) **Major Drainage System.** The subdivider shall install all major drainage system components necessary to reduce inconvenience and damages from infrequent storms. Major system components shall include large channels and drainageways, streets, easements and other paths and shall be capable of accommodating post-development runoff in excess of that accommodated by minor system components resulting from twenty-four (24) hour rainfall events for storms with return frequencies greater than two (2) years up to and including the one hundred (100) year return event (as identified in TR 55). Runoff resulting from a one hundred (100) year, twenty-four (24) hour rainfall event shall be contained within the street right-of-way or designated storm drainage easement or detention facility.

(1) **Drainage Piping Systems.**

- (1) Unless otherwise approved by the Village Engineer, all drainage piping of twelve (12) inches diameter and greater in street rights-of-way shall be constructed of Class Three (3) reinforced concrete pipe. Piping materials outside of rights-of-way shall be subject to approval of the Village Engineer. All storm sewer outlets shall be equipped with steel bar or iron pipe debris gates.
- (2) Agricultural drain tiles which are disturbed during construction shall be restored, reconnected or connected to public storm drainage facilities.

(m) **Open Channel Systems.**

- (1) Unpaved road ditches and street gutters shall be permitted only within the Village's extraterritorial plat approved jurisdictional area and shall be shaped and seeded and/or sodded as grassed waterways. Where the velocity of flow is in excess of four (4) feet per second on soils having a severe or very severe erosion hazard and in excess of six (6) feet per second on soils having moderate, slight, or very slight erosion hazard, the subdivider shall install a paved invert or check dams, flumes, or other energy dissipating devices.
- (2) Where open channels are utilized in either the minor or major drainage system, they shall be designed so as to minimize maintenance requirements and maximize safety. Drainage easements (in lieu of dedications) shall be utilized to accommodate open channels provided adequate access by the Village for maintenance of drainage capacity. Side slopes shall not exceed a four-to-one (4:1) slope. Drainageways where subject to high ground water, continuous flows, or other conditions as determined by the Village Engineer that would hamper maintenance operations due to consistently wet conditions, shall have a paved concrete invert of not less than eight (8) feet wide and side slopes to a point one (1) foot above the channel invert.

- (3) In areas where invert paving is not required, the drainageway bottom shall be grass. If the drainageway has a bare soil bottom or the natural grasses in the drainageway are disturbed due to development operations, the drainageway bottom shall be sodded and securely staked to one (1) foot above the elevation of inundation resulting from a predevelopment five (5) year, twenty-four (24) hour storm event. Other disturbed areas shall be seeded and prepared in accordance with the Village's Erosion Control requirements. Velocities for grass-lined channels shall not exceed those presented in the Village's Surface Water Management Study, if one is adopted.

(n) **Standards for On-Site Detention Storage.** When the subdivider employs on-site detention to control erosion and sedimentation, reduce the post-development peak runoff rate or temporarily store storm water runoff due to inadequate downstream drainage facilities. The detention (storage) facilities shall be subject to regulation in accordance with the following standards:

- (1) Where on-site detention is temporarily employed for erosion and sedimentation control, the detention facilities shall safely contain the predevelopment runoff from a five (5) year storm event of twenty-four (24) hour duration.
- (2) Where on-site detention is permanently employed to reduce the post-development peak runoff, the detention facility shall safely contain the post-development runoff from a twenty-five (25) year storm event of twenty-four (24) hour duration within the limits of the facility.
- (3) Post-development peak runoff rates shall be limited to pre-development levels, up to and including twenty-five (25) year return period storms.
- (4) All detention facilities shall safely contain or pass the runoff from any storm of any duration which exceeds the maximum storm required to be contained up to the one hundred (100) year storm event of twenty-four (24) hour duration.
- (5) All permanent detention facilities shall safely contain the runoff from the one hundred (100) year storm event of twenty-four (24) hour duration on both public and, if necessary, private properties without inundating any building at the ground elevation, the travel lanes of any arterial street, the center ten (10) feet of any collector street or the top of the curb on any local street.
- (6) Determination of on-site detention volumes shall be computed by procedures established by the United States Soil Conservation Service in the most current edition of its technical publication entitled "Urban Hydrology for Small Watersheds, TR-55 or TR-20," and as accepted and approved by the Village Engineer.
- (7) The storage of storm water runoff shall not encroach on any public park (except parks designed with detention facilities) or any private lands outside the land division unless an easement providing for such storage has been approved and recorded for said lands.
- (8) All detention facilities shall be, designed, with the safety of the general public and any considerations for ease of maintenance as top proprietaries.

- (9) Any wet detention facilities shall include riprap to not less than two (2) feet above the normal pool elevation for protection from wave action, or other slope stabilization methods approved by the Village Engineer, for protection from wave action.
- (10) The sides of all detention facilities shall have a maximum slope ratio of four to one (4:1) (horizontal to vertical), with flatter slopes being required where determined practical by the Village Engineer.
- (11) The Village Board, upon recommendation by the Village Engineer, may require the installation of fencing or other such security measures in detention facilities with excessively long down times or permanent water features, or other features requiring additional security for safety reasons.

### **Sec. 14-1.-75 Non—Residential Subdivisions.**

**(a) General.**

- (1) If a proposed subdivision includes land that is zoned for commercial or industrial purposes, the layout of the subdivision with respect to such land shall make such provisions as the Village may require.
- (2) A non-residential subdivision shall also be subject to all the requirements of site plan approval set forth in the Village Building Code. A non-residential subdivision shall be subject to all the requirements of this Chapter, as well as such additional standards required by the Village and shall conform to the proposed land use standards established by any Village Comprehensive Plan or Official Map and the Village Zoning Code.

**(b) Standards.** In addition to the principles and standards in this Chapter, which are appropriate to the planning of all subdivisions, the applicant shall demonstrate to the satisfaction of the Village Board that the street, parcel and block pattern proposed is specifically adapted to the uses anticipated and takes into account other uses in the vicinity. The following principles and standards shall be observed:

- (1) Proposed industrial parcels shall be suitable in area and dimensions to the types of industrial development anticipated.
- (2) Street rights-of-way and pavement shall be adequate to accommodate the type and volume of traffic anticipated to be generated thereupon.
- (3) Special requirements may be imposed by the Village Board, upon the recommendation of the Village Engineer, with respect to street, curb, gutter and sidewalk design and construction.
- (4) Special requirements may be imposed by the Village Board, upon the recommendation of the Village Engineer, with respect to the installation of public utilities, including water, sewer and storm water drainage.

- (5) Every effort shall be made to protect adjacent residential areas from potential nuisance from a proposed commercial or industrial subdivision, including the provision of extra depth in parcels backing up on existing or potential residential development and provisions for permanently landscaped buffer strips when necessary.
- (6) Streets carrying non-residential traffic, especially truck traffic, shall not normally be extended to the boundaries of adjacent existing or potential residential areas.

## **Sec. 14-1-76 Grading.**

The subdivider shall grade each land division in order to establish street, block and lot grades in proper relation to each other and to topography as follows:

**(a) Master Site-Grading Plan.**

- (1) A master site-grading plan shall be prepared by the subdivider for all new subdivisions. This plan shall be prepared in accordance with the requirements and standards of the Village.
- (2) The master site-grading plan shall show existing and proposed elevations of all lot corners, control points and building locations. The plan shall also indicate all overland storm drainage in and adjacent to the subdivision. The cost of the preparation of such a plan shall be paid for by the subdivider.
- (3) After approval or modification of these plans by the Village Engineer, the full width of the right-of-way of the proposed streets within the subdivision and the entire subdivision lot area shall be graded in accordance with the master site-grade plan. The owners of the subdivision lots shall adhere to those plans.
- (4) Upon completion of all street and subdivision grading, the grades shall be checked and certified by the Village Engineer to determine that the completed grading work is in accordance with the master site-grading plan.
- (5) The cost of all required grading work;• isupervision, certification, inspection and engineering fees shall be paid for by the subdivider.

**(b) Right-of-Way Grading.** The subdivider shall grade the full width of the right-of-way of all proposed streets in accordance with the approved plans, including the grading of site triangles at each intersection.

**(c) Block Grading.** Block grading shall be completed by one (1) or more of the following methods:

- (1) Regrading along the side or rear lot lines which provides for drainage to the public drainage facilities, provided any ditches or swales are in public drainage easements, provided that a deed restriction is adopted which prohibits alteration of the grades within five (5) feet of any property line from the grades shown on the master site grading plan.
- (2) Parts of all lots may be graded to provide for drainage to a ditch or to a swale.

(d) **Miscellaneous Grading Requirements.**

- (1) Lot grading shall be completed so that water drains away from each building site toward public drainage facilities at a grade approved by the Village Engineer and provisions shall be made to prevent drainage onto properties adjacent to the land division unless to a public drainage facility.
- (2) Grading activities shall not result in slopes greater than three to one (3:1) on public lands or lands subject to public access.
- (3) The topsoil stripped for grading shall not be removed from the site unless identified in the Erosion Control Plan approved by the Village Engineer as not being necessary for erosion control or site landscaping purposes. Topsoil shall be uniformly returned to the lots when rough grading is finished. Topsoil piles shall be leveled and seeded for erosion control prior to the Village releasing the one (1) year guarantee provision on public improvements in the streets adjacent to the lots on which the topsoil is stockpiled.
- (4) Such grading shall not result in detriment to any existing developed lands, either within or outside of the corporate limits.
- (5) The Village Board shall require the subdivider to provide or install certain protection and rehabilitation measures, such as fencing, sloping, seeding, riprap, revetments, jetties, clearing, dredging, snagging, drop structures, brush mats, willow poles and grade stabilization structures. Seeding of the site shall occur within thirty (30) days of rough grading.
- (6) Tree cutting and shrubbery clearing shall not exceed fifty percent (50%) of the lot or tract and shall be so conducted as to prevent erosion and sedimentation; preserve and improve scenic qualities; and, during foliage, substantially screen any development from stream or lake users.
- (7) Paths and trails in wooded and wetland areas shall not exceed ten (10) feet in width unless otherwise approved by the Village Board, and shall be so designed and constructed as to result in the least removal and disruption of trees and shrubs, and the minimum impairment of natural beauty.
- (8) Earth moving, such as grading, topsoil removal, mineral extraction, stream course changing, road cutting, waterway construction or enlargement, removal of stream or lake bed materials, excavation, channel, clearing, ditching, drain tile laying, dredging, and lagooning, shall be so conducted as to prevent erosion and sedimentation and to least disturb the natural fauna, flora, watercourse, water regimen, and topography.
- (9) Review of the conduct of such cutting, clearing, and moving may be requested of the County Soil and Water Conservation District Supervisors, the State District Fish and Game Managers, and the State District Forester by the Village Engineer or Plan Commission as they deem appropriate.

- (e) **Drainage Flows.** The subdivider shall cause to be set upon the master grading plan arrows indicating the directions of drainage flows for each property line not fronting on a street on all parcels and along each street as will -regult from the grading of the site, the

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construction of the required public improvements, or which are existing drainage flows and will remain. The arrows indicating the directions of flows shall be appropriately weighted so as to differentiate between the minor and major [one hundred (100) year event] drainage components. The arrows shall be accompanied on the master grading plan with the following note:

Arrows indicate the direction of drainage flows in various components resulting from site grading and the construction of required public improvements. The drainage flow components located in easements shall be maintained and preserved by the property owner unless approved by the Village Engineer.

**Sec. 14-1-77 Erosion Control.**

The Village finds that urbanizing land uses have accelerated the process of soil erosion, runoff and sediment deposition in the waters of the Village. Therefore, it is declared to be the purpose of this Section to control and prevent soil erosion and minimize storm water runoff increases and thereby to preserve the natural resources, control floods and prevent impairment of dams and reservoirs, protect the quality of public waters, protect wildlife, protect the tax base, and protect and promote the health, safety and general welfare of the people of the Village. All land disturbing activities shall be subject to the provisions of the Village's Construction Site Erosion Control Ordinance (Title 15).

*Cross-Reference:* Title 15, Chapter 2, "Construction Site Erosion Control".

**Sec. 14-1-78 through Sec. 14-1-79 Reserved for Future Use.**