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ORDINANCE #259

ENGINEERING STANDARDS ORDINANCE
VILLAGE OF NEW HAVEN, MICHIGAN

At a Regular Meeting of the Board of the Village of New Haven, County of Macomb, Michigan, held on Tuesday, May 13, 1997, at 58725 Haven Ridge, New Haven, Michigan, the following was adopted.

14.000 Land Development Improvements, Engineering Design and Construction Standards Ordinance: An Ordinance regulating the development of land; the type and quality of improvements required for land development; and standards for engineering design, preparation of plans and specifications, and construction of site improvements in the Village of New Haven, Macomb County, Michigan.

THE VILLAGE OF NEW HAVEN ORDAINS:

14.010 .01 GENERAL PROVISIONS

14.011 .0101 **SHORT TITLE.**

This Ordinance shall be known and cited as the "Engineering Standards Ordinance."

14.012 .0102 **PURPOSE.**

The purpose of this Ordinance is to regulate and control all land development within the Village of New Haven and to promote the safety, public health, and general welfare of residents of the Village; to provide minimum requirements for Site Improvements for land development; to establish standards for engineering design and detailed engineering plans and specifications for Site Improvements; to provide for construction standards for land development Site Improvements; to promote the orderly layout and use of land; and to control building development within the Flood Plain areas.

14.013 .0103 **LEGAL BASIS.**

This Ordinance is adopted pursuant to, and in accordance with, Act 246, Michigan Public Acts of 1945, as amended, and Act 288, Michigan Public Acts of 1967, as amended, and should be read in conjunction with the Village Land Division Ordinance, Subdivision Resolution Ordinance,

Village Zoning Ordinance, Village Flood Damage Prevention Ordinance, Village Water System Control Ordinance, Village Sewer Use Ordinance and Village Building Code Ordinance.

14.014 .0104 **SCOPE.**

This Ordinance applies to all land development causing or requiring the reshaping, grading or regrading of such land. The proposed installation of any improvements, including, but not limited to, public utilities such as gas piping, electric or telephone wiring (underground or overhead), oil piping, television cable, Regional Water Supply Transmission Mains, Regional Sanitary Sewer Interceptors, and/or Drainage Facilities, is subject to the provisions herein contained.

Site Grading, including fill and excavation, and site drainage requirements apply to all land within the Village. This Ordinance shall not apply retroactively to the development of land (except that any redevelopment or new construction shall comply with the applicable provisions of this ordinance) including:

1. Subdivisions or developments completed prior to the effective date hereto.

2. A single parcel, or a single lot in a Subdivision recorded prior to the effective date of this Ordinance, intended for only one or two family dwelling unit.

3. Agricultural purposes.

This Ordinance does not repeal, abrogate, annul, or in any way impair or interfere with existing provisions of other laws, ordinances or regulations, except as hereinafter provided. Where this Ordinance imposes a greater restriction or more demanding requirement upon land than is imposed or required by other Ordinances of the Village, the provisions of this Ordinance shall control.

14.015 .0105 **ADMINISTRATION.**

This Ordinance shall be administered by a Village employee or employees designated by the Village of New Haven Council.

14.020 .02

DEFINITIONS

14.021 .0201 **RULES OF CONSTRUCTION.**

For the purpose of this Ordinance the following rules of construction apply:

A. Words used in the present tense include the future tense; and in the singular, include the plural, unless the context clearly indicates the contrary.

B. The term "shall" is mandatory; the term "may" is permissive.

C. The word or term not interpreted or defined by this Article shall be used with a meaning of common or standard utilization.

14.022 .0202 **TERMS DEFINED.**

Unless the context specifically indicates otherwise, the meaning of terms used in this Ordinance shall be as follows:

"**Alley**" shall mean any dedicated public way affording a secondary means of access to abutting property, and not intended for general traffic circulation and not more than twenty (20) feet wide.

"**Building Service Sewer (Drainage water)**" shall mean any drainage - water pipe extension from a building foundation drain outlet - located five feet outside of a building or dwelling unit - to a public stormwater drain.

"**Building Service Sewer (Wastewater)**" shall mean the sewer extension from a building drain outlet point - located five feet outside of a building or a dwelling unit - to a point of connection with a public sanitary sewer.

"**Building Service Water Supply Pipe**" shall mean any water supply mains, pipes, services, and/or appurtenances, except meters, that extend from a point of connection with the building water piping - located five feet outside of a building or a dwelling unit - to a point of connection with the public water supply system.

"**Council**" shall mean the Village Council, Village of New Haven, State of Michigan.

"**Customer Wastewater Disposal Outlet**" shall mean the point of connection to the public sewer.

"**Customer Water Supply Outlet**" shall mean either the outlet on the customer side of a "stop valve" near the public easement or public right-of-way line (in the case of a supply for a single building) or on the customer side of a master water meter where the Village has allowed the use of a master water meter to serve special types of customers.

"**Department**" shall mean the Village Department of Public Works.

"**Development**" or "**Developer's Project**" or "**Project**" shall mean a specifically designated site being developed (or proposed for development) by a Developer.

"**Ditch**" or "**Drainage Swale**" shall mean an open channel used to transport water, groundwater, surface water run-off, or drainage water from any source.

"**Drainage Facilities**" or "**Drainage Water Facilities**" shall mean any storm sewers, lakes, ponds, streams, rivers or storm drains, including facilities designated as County Drains, that receive water from lands owned by more than one Owner.

"**Dwelling Unit**" shall mean a building, or portion thereof, designed for occupancy by one (1) family for residential purposes and having cooking facilities.

"**Easement**" shall mean an acquired legal right for the specific use of land owned by others.

"**Foundation Drain Service Pipe**" shall mean a conveyance pipe that receives only foundation drain groundwater seepage, exclusive of directly and intentionally introduced surface water run-off.

"**G.P.S.**" shall mean the Global Positioning System.

"**Land Developer**" or "**Developer**" shall mean a person, firm, association, partnership, corporation, or any other legal entity, who intends to develop land by making various improvements to the land as described under "Site Improvements".

"**Land Development**" or "**The Development of Land**" shall mean the reshaping of the land environment to provide for the elements or amenities associated with community living.

Items considered as these elements or amenities include any of the items listed under the definition for "Site Improvements."

"Lot" shall mean a parcel of land occupied, or intended to be occupied, by a main building or a group of such buildings and accessory buildings, or utilized for the principal use and uses accessory thereto, together with such yards and open spaces as are required under the provisions of the Zoning Ordinance. A lot may or may not be specifically designated as such on public records. Each such parcel shall also have its front line abutting a public street, or a recorded easement.

"Mains" or **"Water Mains"** as applied to the water supply facilities and connections thereto, shall mean any water supply conveyance pipe larger than 2 inches in diameter.

"MCS" shall mean the Michigan Coordinate System as defined in Act 9 of 1964 of Michigan compiled laws.

"Michigan Department of Environmental Quality" or **"MDEQ"** shall mean the State Agency which regulates water supply facilities in the State and certain wastewater disposal facilities in the State.

"Michigan Department of Transportation" or "MDOT" shall mean the state agency which operates state roadways and federal expressways.

"Michigan Water Resources Commission" or **"Water Resources Commission"** or **"WRC"** shall mean the State Agency which regulates the discharge of wastewater and drainage water to the natural outlets of the waters of the State and provides various rules and regulations to control same.

"Mobile Home Park/Manufactured Housing Park (Trailer Court)" shall mean a parcel of land developed in conformity with Michigan P.A. 419 of 1976, as amended, containing two or more manufactured housing units.

"Monument" shall mean a position established for the Village of New Haven with Global Positioning System Technology for which coordinates in the Michigan Coordinate System have been calculated, or other positions previously established with Global Positioning System Technology for which Michigan Coordinate System values are published or can be calculated with a standard deviation not greater than 0.25 feet.

"**Natural Outlet**" shall mean any drainage water outlet, including storm drains and sewers into a watercourse, pond, ditch, lake or other body of surface or groundwater.

"**New Haven Coordinates**" shall mean the Coordinate Values for most of the apparent and visible section, quarter corners and monuments on file in the office of the Village Engineer of the Village of New Haven.

"**Open Drain**" shall mean a large open channel used to transport water, groundwater, surface water run-off or drainage water from any source.

"**Parking Lot**" shall mean a designated area used primarily for the off-street parking of motor vehicles.

"**Parking Lot Bay**" shall mean a portion of the width of a parking lot which includes a set of parking stalls on either side of a driveway provided for access to such parking stalls.

"**Person**" shall mean any individual, firm, company, association, society, corporation, governmental agency (including school district), or other legal entity.

"**Plat**" shall mean a map or chart of a subdivision of land as defined in Act No. 288 of Michigan Public Acts of 1967 as amended.

"**Plot Plan**" shall mean a scaled topographic drawing of existing and proposed modifications to land utilized for or zoned for single and duplex residential dwelling.

"**Preliminary Subdivision Plan**" shall mean a preliminary plat showing the salient features of a proposed subdivision of land submitted to an approving authority for purposes of preliminary consideration, as defined in Act No. 288 of Michigan Public Acts of 1967 as amended.

"**Private Wastewater Disposal System**" shall mean a septic tank with subsurface soil absorption facilities; wastewater treatment facilities; or similar methods of wastewater disposal that may be approvable by the Macomb County Health Department and/or the State of Michigan Department of Environmental Quality.

"**Private Water Supply System**" shall mean any system by which potable groundwater is withdrawn and supplied that may be approvable by the Macomb County Health Department and/or the Michigan Department of Environmental Quality.

"**Public Sanitary Sewer**" shall mean a sanitary sewer intended to be located in public easements or public rights-of-way that collects (or is intended to collect) wastewater from more than one user or premises and that is required to receive the approval and issuance of a construction permit from the Municipal Wastewater Control Section of the DEQ.

"**Public Sewer**" or "**Public Drain**" shall mean a common sewer or drain that serves more than one user or premises and is controlled by the Village Department of Public Works or another governmental agency.

"**Public Utility Company**" or "**Utility Company**" shall mean a legally constituted firm, corporation, or agency - other than the Village or a County agency acting under a contract with the Village - that operates under a franchise or agreement approved by the Village for the purpose of installing and operating public utilities, including, but not limited to, gas piping, electric or telephone wiring (underground or overhead), oil piping, television cable, water supply, transmission mains, sanitary sewer interceptors, and/or drainage facilities. The Detroit Metro Water Department is a "Public Utility Company" under this definition.

"**Public Water Main**" shall mean a main, existing or proposed, in public easements or public rights-of-way that is intended to serve more than one user or premises and that is required to receive the approval and issuance of a construction permit from the Municipal Water Supply Section of the Michigan Department of Environmental Quality. The service pipe, extending from a public water main to a "Customer Water Supply Outlet," shall also be considered "Public."

"**Right-of-Way**" or "**R.O.W.**" shall mean land dedicated, reserved, used, or to be used, for a street ,alley, walkway, or other public purposes.

"**Sanitary Sewer**" or "**Wastewater Sewer**" shall mean a sewer, together with appurtenances, that carries liquid and water carried wastes from residences, commercial buildings, industrial plants, and institutions together with minor quantities or ground, storm and surface waters that are not admitted intentionally.

"**Services**" as applied to the water supply facilities and connections thereto, shall mean any water supply conveyance pipe, outside of a building.

"**Sewage Force Main**" or "**Force Main**" shall mean a wastewater conveyance pipe which carries wastewater under pressure.

"**Sewer**" shall mean a pipe or conduit that carries wastewater or drainage water.

"**Sight Distance**" shall mean the unobstructed (straight line) length of view from a driver's eye heighth of 3.5 feet to an object height of 6 inches.

"**Site Improvements**" or "**Improvements**" shall mean such operations, acts of construction, or changes affecting land that increases the value, utility, or habitability of the site and including, but not limited to, site grading; drainage water sewers, culverts, or drains; sanitary sewers; wastewater disposal facilities; water supply piping; water supply facilities; gas piping; oil piping; television cable; electric power supply wiring; telephone wiring; roadway surfacing or paving; parking lot paving; driveways; bridges; lakes, ponds, or lagoons; sidewalks; landscape walls and fences; and/or other appropriate appurtenant items.

"**Site Plan**" shall mean the plan required under the Village Zoning Ordinance for "Site Plan Review" for all projects other than a land subdivision plat.

"**SPCS '83**" shall mean the Michigan State Plan Coordinate System based upon the NAD `83 Geodetic Reference System. The value of the "International Foot" shall be used.

"**Stop Valve**" or "**Curb Stop**" shall mean the valve placed on a building service water supply pipe, that is located at a "Customer Water Supply Outlet."

"**Stormwater Drain**" or "**Storm Drain**" or "**Storm Sewer**" shall mean a watercourse or a sewer intended for the conveyance of water, groundwater, surface water run-off, drainage water, or other water from any source exclusive of intentionally admitted wastewater.

"**Stormwater Inlet Structure**" shall mean a structure designed and constructed to intentionally admit surface water run-off, drainage water, or other water from any source exclusive of intentionally admitted wastewater.

"**Street**" shall mean any street, avenue, boulevard, road, or other right-of-way that provides for vehicular or pedestrian access to abutting properties by the general

public; and includes the land between the street right-of-way lines, whether improved or unimproved.

1. **"Street, public"** - shall mean a right-of-way that provides for vehicular and pedestrian access to abutting properties that is deeded or dedicated to the Road Commission of Macomb County, Michigan Department of Transportation, or other governmental agency authorized to own road R.O.W. and/or operate vehicular transportation facilities.

2. **"Street, private"** - shall mean a right-of-way that provides for vehicular and pedestrian access to abutting properties for the general public, but is not deeded or dedicated to the Road Commission of Macomb County, Michigan Department of Transportation or other related governmental agency for ownership, operation, or maintenance.

3. **"Street, major"** - shall mean an arterial street which is intended to serve as a large volume trafficway for both the immediate municipal area and the region beyond, and is designated as a major thoroughfare, parkway, freeway, expressway, or equivalent term on the Major Thoroughfare Plan to identify those streets comprising the basic structure of the Major Thoroughfare Plan.

4. **"Street, local"** - shall mean any street, private or public, which is intended primarily for access to, or through, abutting properties. Local streets shall have, or shall be considered to occupy, a 60 foot wide right-of-way.

5. **"Street, collector"** - shall mean a street intended to carry traffic from local streets to major roads as designated on the Village Master Thoroughfare Plan. Collector streets shall have an 86 foot wide right-of-way.

"Superintendent" shall mean the person appointed by the Council to manage the Department of Public Works.

"Surface Water Run-off" or **"Stormwater"** shall mean that part of rainfall or melting snowfall that reaches the stormwater drain as run-off from natural land surfaces, building roofs or pavements.

"Tabulation of Quantities" shall mean a list of construction items as usually used in the underground and pavement construction industry (e.g. as used by the

Michigan Department of Transportation) and compatible with the Village construction specification items together with the quantity of each item planned to be constructed.

"**Thoroughfare Plan**" shall mean that portion of the Village's Master Plan that sets forth the location, alignment and dimensions of existing and proposed street rights-of-way adopted by the Village.

"**Village**" shall mean the Village of New Haven, County of Macomb, State of Michigan.

"**Village Engineer**" shall mean the staff registered Professional Engineer or the Consulting Engineer representing the Village in this position.

"**Trunk Storm Sewer**" shall mean a public storm sewer having a diameter of 24 inches or larger.

"**Utility Company's Contractor**" shall mean a construction contractor engaged by the utility company to install public utilities for the utility company; or, in the case where the utility company has a construction division that installs its own utilities, shall mean the utility company.

"**Underdrain Pipe**" shall mean a geotextile wrapped perforated pipe installed underground for the specific purpose of lowering a high groundwater condition or draining a granular subbase by receiving groundwater seepage and conveying it to a stormwater drain. Farm Drain Tile is not Underdrain Pipe.

"**Unpolluted Water**" or "**Drainage Water**" is water of a quality equal to, or better than, the effluent criteria currently in effect (as specified by the DEQ), or water that would not cause violation of receiving water quality standards and would not be benefited by discharge to the Village sanitary sewers and wastewater disposal system.

"**User**" shall mean the owner or occupant of any premises connected with, and/or using, any of the facilities operated by the Department.

"**Wastewater**" or "**Sewage**" shall mean the spent water of a community, including liquid and water-carried wastes from residences, commercial buildings, industrial plants, and institutions, together with any groundwater, surfacewater, and stormwater that may be present.

"Wastewater Treatment Works" or **"Sewage Treatment Plant"** shall mean facilities for treating wastewater, industrial wastes, and sludge.

"Watercourse" shall mean a natural or artificial open channel for the passage of water either continuously or intermittently.

14.023 .0203 **SURVEY REQUIREMENTS**

All site plans or surveys containing 5 acres or more submitted to the Village, or other site plans or surveys as determined by the Village, shall conform to the following requirements:

A. All surveys shall tie into and include coordinate values based upon Michigan Coordinate System with a standard deviation not greater than 0.25 feet.

B. If available, both hard copy and computer disc compatible to the Village System, shall be submitted.

C. At least two (2) monuments shall be used in establishing a bearing and tying into the Michigan Coordinate System.

D. All bearings shall be based upon the Michigan Coordinate System. Bearings used for platting shall be established according to Act 288 of 1967 of Michigan Compiled Laws.

E. Any monument established subsequent to this ordinance for which a Land Corner Recordation Certificate, as defined in Act 74 of 1970 of Michigan Compiled Laws, is recorded with Macomb County Register of Deeds Office and is approved by the Village Engineer, may be used to tie to Michigan Coordinate System.

F. The Witnesses for monuments established for Village are on file with the Village or the Village Engineer.

G. Elevations shall be National Geodetic Vertical Datum (NGVD).

14.030 **.03**

SITE IMPROVEMENTS REQUIRED FOR DEVELOPMENT OF LAND

14.031 .0301 **SITE GRADING & DRAINAGE WATER COLLECTION & DISPOSAL SYSTEMS**

A. It shall be unlawful for any person to change the drainage pattern of any land by excavating, grading or filling without first obtaining a Permit for Construction from the Village. Each site shall be graded for the purpose of directing surface water run-off to appropriate drainage water collection and disposal systems as is necessary, and same shall be done in a manner which will not cause drainage water from the site to flow onto adjacent land nor obstruct the flow of existing drainage from adjacent properties. Drainage water collection and disposal systems shall be provided to collect surface water run-off and/or building foundation drain groundwater seepage. The drainage water collection system shall consist of enclosed storm sewers and water courses throughout the project. An extension of the storm sewer system shall be provided to furnish an outlet for foundation drain service pipes for each building. The collected drainage water shall be conveyed to a point of disposal that shall be a public stormwater drain.

B. When, in the opinion of the Village Engineer and/or the Macomb County Public Works Commissioner, there is inadequate drainage water outlet capacity, and an adequate drainage water outlet cannot be reasonably engineered and constructed, the developer shall install an adequate detention basin with controlled outlet facilities to limit the rate of flow of drainage water from his site. Final approval of any plans which include a detention basin shall be conditioned upon an Operation and Maintenance Special Assessment District Agreement with the Village. The following shall apply:

1. Detention basins on private developments, where ownership will remain consolidated over an extended period of time, such as industrial sites, shopping centers, apartment complexes, etc. shall remain in private ownership, subject to Village review as to size, design and proper operation. Maintenance and

liability shall remain with the property owner.

2. Detention basins serving predominantly single family areas or platted Subdivision, may be dedicated to the Village for ownership and maintenance, subject to the criteria established in .0502, Article V and subject to case-by-case review and approval by the Planning Commission and the Village Council. Such development shall be required to file a standing storm water facility operation and maintenance special assessment district agreement prior to final plat approval.

3. Sites for detention basins shall be shown on the preliminary and final plats.

14.032 .0302 **STREET AND PARKING LOT PAVEMENT AND RIGHTS-OF-WAY.**

A. All residential land developments, whether single-family or multiple-family, shall be served by paved roadways, having a width and type of pavement as indicated in Appendix "C" [14.130].

B. All industrial developments shall be served by concrete paved roads having a width of pavement as indicated in Appendix "C". Commercial and industrial developments shall be served by paved roadways. Paving for commercial developments shall be of the type and width as indicated in Appendix "C".

C. Commercial and industrial developments shall be served by paved driveways and parking lots.

D. Where any land development abuts or includes a proposed collector street as indicated on the Master Thoroughfare Plan, or where it is deemed essential by the Planning Commission or the Village Council to provide for continuity to other parts of the public road system through subject land development, the developer of such land development shall be responsible for the installation of the collector street or other local streets, with dedication, of the right-of-way to the use of the public for same.

E. Where the Village Zoning Ordinance requires off-street parking, each 90° parking space (or stall) shall be nine (9) feet in width and eighteen (18)

feet in length. Parking areas shall be paved with either a concrete pavement or a bituminous aggregate surface course. All paved areas shall have concrete curbs adjacent to sidewalks and landscaped areas. Moreover, parking lots shall be designed in accordance with standards contained in this Ordinance and/or as required in Section XIV G of the Zoning Ordinance.

14.033 .0303 **POTABLE WATER SUPPLY AND DISTRIBUTION SYSTEM.**

A. All developments shall be serviced by a potable water supply and distribution system acceptable to the Village. A site plan or a preliminary subdivision plat submitted to the Village shall be accompanied by data describing the type of potable water supply and distribution system that is to be provided for the development. See Section 14.054 for easement and design requirements.

B. For all developments, the developer shall provide a water main distribution system to service each proposed building site. The water main distribution system shall be connected to the Village water supply distribution system and conveyed to the Village for operation and maintenance.

14.034 .0304 **WASTEWATER COLLECTION AND DISPOSAL SYSTEM.**

A. All developments shall be serviced by a wastewater collection and disposal system acceptable to the Village. A site plan or a preliminary subdivision plat submitted to the Village shall be accompanied by data describing the type of wastewater collection and disposal system that is to be provided for the development.

B. For all developments, the developer shall provide sanitary sewers to service each proposed building site and shall connect same to a public wastewater disposal system. Individual existing single and duplex family residential sites without access to public sanitary sewer may extend the public sewer system and connect thereto, or may develop an individual on-site treatment system. All wastewater disposal systems shall be designed in a manner acceptable to the Village Engineer and the Macomb County Health Department.

14.035 .0305 **SIDEWALKS.**

A. Sidewalks shall be constructed completely across the project where it abuts existing or proposed public streets, except in existing residential subdivisions without sidewalks which are more than 50% developed and/or where the existing road right-of-way is not wide enough to accommodate a sidewalk.

B. In all projects a sidewalk shall be provided within the right-of-way on both sides of all existing or proposed streets located within the project. The requirement for sidewalks on both sides of a local street may be waived by the Planning Commission when an acceptable and more imaginative alternative for pedestrian circulation is proposed by the developer. The requirements of this section include corner closures, interior and major road sidewalks.

C. The outside edge of the 5 foot wide sidewalk will normally be located one foot inside of the road right-of-way. For mobile home parks and multiple-family projects with private street systems, the walk may be located adjacent to the street pavement and the width shall be determined so the walk will have a usable width of 3 feet.

14.036 .0306 **TREES**

Unless a sanitary sewer or water main is not yet installed where planned along a street, the developer shall plant at least one tree (minimum one inch diameter, six feet in height) per lot or building site on each side of all Village streets except Section Line roads. Street trees shall have a minimum spacing of 60 feet and a maximum spacing of 70 feet. The type of tree shall be determined by the Village.

14.037 .0307 **UNDERGROUND WIRING.**

The developer shall provide for all local distribution lines for telephone, electric, television, and/or other similar services distributed by wire or cable to be placed underground entirely throughout the area to be developed for residential use, except for main supply and perimeter feed distribution lines which service areas outside the development area, and except for surface facilities related to underground service (such as above ground closure or terminals) and such wires, conduits, or

cables shall be placed within private easements which shall be provided to such service companies by the developer. All such facilities shall be constructed in accordance with standards of construction approved by the Michigan Public Service Commission.

14.038 .0308 **GUARANTEE FOR COMPLETION OF SITE IMPROVEMENTS.**

After site plan approval or final preliminary subdivision approval by the Village Planning Commission, but before the issuance of building permits for buildings within the development, the developer shall provide the Village with a guarantee for the satisfactory completion of the required site improvements for his development. Such guarantee shall be in the form of cash, certified check, or in the form of an irrevocable letter of credit acceptable to the Village. The amount of the deposit shall be set by the Village Board based on the estimated construction cost of said improvements as determined by the Village Engineer. The Village shall release funds from the deposit as site improvements are completed and approved by the Village, in proportion to the amount of improvements satisfactorily completed. PROVIDED, HOWEVER, that if the improvements required by Section .0305 and Section .0306 are not completed, the builder of a home or homes on a lot or lots within the land development, prior to the issuance of occupancy permits, shall provide the Village with a cash bond guaranteeing satisfactory completion of the requirements of Section .0305 and Section .0306, as amended. Occupancy permits shall not be issued until such improvements are installed or sufficient cash bonds are provided.

14.039 .0309 **RESIDENTIAL PLOT PLAN SUBMITTALS**

Plot plans are required by the Village as an integral part of the permitting procedure for residential structures. For new buildings or expanding of an existing building footprint exceeding fifty percent of the existing structure floor area, Village approval of both building plans and a plot plan must be secured before a building permit can be issued.

These requirements must be met before a plot plan receives approval. The following is not intended to be an exhaustive list of requirements, but rather a set of guidelines.

A. TOPOGRAPHICAL SURVEY REQUIREMENTS

For lots platted within five years of plot plan submittal, no topographical survey is required unless a nonconformity to the subdivisions approved grading plan or drainage plan has been demonstrated.

For all lots platted over five years prior to the submittal of the plot plan, and all acreage/non-platted parcels, full topographic survey is required. Surveys require location and description of all underground utilities; rims and inverts of all manholes, catch basins and stop boxes; north arrow; property corners, irons, monuments and fences; a 50-foot grid of existing elevations - to 50 feet offsite (including lot corners); elevations must be corrected to conform to U.S.G.S./Village datum with the benchmark used being depicted on the plans; existing structures with finished grade and finished floor elevations of all structures on adjacent lots; all vegetation and trees on adjacent lots and lot to be developed; and the public drainage course to which the proposed lot will drain. This list is not intended to be all inclusive.

B. LEGAL DESCRIPTION

A complete and accurate legal description of the lot(s) to be developed must be included with the plan. The plan drawing must include lot dimensions and bearings, easement, address, lot number, name and R.O.W. width of adjacent street(s) and setback dimensions.

C. GRADING AND DRAINAGE

A grading plan is required with all plot plan submittals and must include the following information: Proposed elevations at all lot corners, along side lot lines immediately adjacent to existing and/or proposed structures, in swales and ditches at regular intervals not to exceed 50 feet, at all proposed building corners and at corners and centerlines of septic fields. The plan must contain sufficient information to detail the drainage of the lot. All site drainage must be directed to a public drain. If no public drain is immediately available or adjacent to the site, it will be the responsibility of the sites developer to extend drainage to the site from an approved outlet. When insufficient depth exists to service

a site, it may be necessary for the developer to deepen the existing drain to service the site.

Existing elevations at property lines shall be met by new construction. In no case shall on-site drainage be directed to an adjacent site or shall existing offsite drainage patterns be interrupted.

Open drains will generally be permitted on site or offsite when existing offsite drains are not enclosed and extension of drainage to the site is necessary. Slopes of swales on site shall be 0.50% or greater.

Storm drains shall be designed to conform to section 14.052, "Site Grading and Drainage Water Collection and Disposal". On site storm sewers, when servicing only the parcel being developed, are to be a minimum of six inch diameter and are to be constructed of minimum schedule 40 P.V.C. or S.D.R. 23.5 A.B.S., or equal.

The minimum slopes shall be sufficient to provide a velocity of 2.5 f.p.s. or greater. When servicing more than one parcel, the pipe shall be a minimum eight inch diameter and be constructed in a 12' wide easement dedicated to the Village. A larger pipe may be necessary if the acreage being drained by the pipe during a 10 year storm over the subject drainage area exceeds the pipe capacity.

Catch basins are to be a minimum of two foot diameter and be constructed of manhole block or precast concrete. Rims and grates are to be E.J.I.W. 1040 (or equal).

D. UTILITIES

1. Sanitary Sewer--A six inch diameter sanitary sewer lead shall be provided for each residence, leading to a sanitary sewer or septic system. The lead shall have a minimum slope of 1% and shall be constructed of a minimum schedule 40 P.V.C. or S.D.R. 23.5 A.B.S. No more than one single family residence shall utilize an individual lead.

2. Water--A minimum one inch, type "K" copper water lead shall be provided for each single family residence accessing the Villages water supply.

3. Storm Sewer--A sump pump lead shall be provided for each residential structure so equipped. The lead shall be a minimum three inch diameter and be constructed of a minimum schedule 40 P.V.C. or S.D.R. 23.5 A.B.S. The lead must outlet to an approved public drain.

4. All utility leads are to access the respective public utility adjacent to the site to be developed. The crossing of lot lines with lead extensions or the construction of "spaghetti" leads are prohibited.

14.040 .04

PROCEDURE FOR PROCUREMENT OF A PERMIT FOR CONSTRUCTION OF SITE IMPROVEMENTS AND/OR PUBLIC UTILITIES

14.041 .0401 **GENERAL**

Except for agricultural purposes, it shall be unlawful for any person to begin the development of land (including grade alterations and fills) or install Public Utilities within the Village without first obtaining a Permit for Construction.

14.042 .0402 **PROCEDURE**

Any person desiring to proceed with the development of land or install Public Utilities shall apply for a Permit for Construction from the Village Department of Public Works in accordance with the following procedures:

A. **FOR PROJECTS WHERE THE CONSTRUCTION CONTRACTOR IS ENGAGED BY THE VILLAGE (OR BY THE COUNTY AGENT UNDER CONTRACT WITH THE VILLAGE).**

1. Where the construction contractor is engaged by the Village, or by the County Agency under contract with the Village, the Contractor will not be required to acquire (nor have in his possession) a Permit for Construction. However, the Contractor shall restore all land and/or other physical features affected by the work to a condition equal to or better than that existing at the time construction began. Filling or grading of private lands in conjunction with such projects shall not occur without securing a permit to construct for the individual property.

B. **FOR PROJECTS WHERE THE CONSTRUCTION CONTRACTOR IS ENGAGED BY A PUBLIC UTILITY COMPANY OTHER THAN THE VILLAGE.**

1. The Public Utility Company shall prepare and present to the Department plans and specifications for the proposed utility, whether it be an underground utility or an overhead utility (including a single pole relocation), in accordance with the "Standard Utility Locations" indicated in Appendix "B" [14.125]. Furthermore, the Utility Company shall ascertain where the location (horizontally or vertically) may be in possible conflict with utilities proposed by the Village.

2. Upon completion of the plans and specifications for the public utility, the Utility Company shall make an application for a plan review on a form furnished by the Department. As part of this application, the Utility Company shall submit the following:

   a. Three sets of completed plans and specifications as proposed to be used for the construction of the utility;

   b. A cash payment, computed according to the schedule indicated in Appendix "A", Section I [14.120], as the plan review - administration fee.

   c. Such other information and data as the Village Engineer deems necessary to enable the approval of the plans and specifications.

3. Upon approval of the plans and specifications by the Superintendent and Village Engineer, but prior to commencement of construction, the Utility Company's Contractor shall apply for a Permit for Construction of a Public Utility of a form furnished by the Department. As part of this application, the Utility Company's Contractor shall submit the following:

   a. Three sets of approved plans and specifications.

b. A cash deposit (in an amount as set forth in Appendix "A", Section III [14.120]) to be held as a bond by the Village to guarantee that all land an/or other physical features affected by the work are restored to a condition equal to or better than that existing at the time construction began.

c. Such other information and data as the Village Engineer deems necessary to enable the approval of the Construction Permit.

4. After issuance of the Construction Permit, the Contractor may proceed with construction. The Contractor shall restore all land and/or other physical features affected by the work to a condition equal to or better than that existing at the time construction began.

5. Upon completion of the construction, the Utility Company's Contractor shall submit a request (along with any supporting data deemed necessary by the Village) for written approval and acceptance by the Village of the restoration work. Upon approval of the restoration work by the Village, the cash bond will be returned to the Contractor. However, if the Utility Company's Contractor does not act in a timely manner to perform the restoration work, the Village reserves the right to use whatever portion of the money as is reasonable and necessary to accomplish the restoration work and return the balance of the money to the Contractor upon completion of the restoration work.

6. Upon completion of the work, record plans shall be submitted on a format approved by the Village Engineer.

C. **FOR ALL OTHER DEVELOPMENT PROJECTS.**

1. The developer shall engage a Registered Professional Engineer, hereinafter called the developer's Engineer, who shall prepare plans and specifications for the proposed Site Improvements in accordance with current engineering design and plan preparation standards contained herein or otherwise

adopted by the Village or set forth by the Village Engineer.

2. Upon completion of the plans and specifications for the Site Improvements, the developer shall make an application for a Plan Review of a form furnished by the Village Department of Public Works. As part of this Application, the developer shall submit the following:

   a. Three copies of completed plans and specifications as proposed to be used for the construction of the Site Improvements.

   b. A "Tabulation of Quantities" in sufficient detail to enable the Village Engineer to make a reasonable estimate of construction cost of all proposed work. The developer's Engineer shall prepare an estimate of construction cost of the proposed work which may be used in lieu of the Village Engineer's estimate. The estimate is to be based on the cost for the Village to publicly bid and construct the project.

   c. A cash payment, computed according to the schedule indicated in Appendix "A", to cover cost of the Plan Review Administration Fee.

   d. Such other information and data as the Village Engineer deems necessary to enable the approval of the plans and specifications.

3. Upon approval of the plans by the Village Engineer, the Village Engineer will coordinate the securing of necessary approvals for the construction of Village utilities from other reviewing agencies. The Applicant shall furnish such plans and other documents as are necessary to accomplish such approvals. However, after approval of the plans by the Village, the developer's Engineer shall obtain approval from the Road Commission of Macomb County, the Macomb County Public Works Office (Drains and Soil Erosion), the Michigan Department of Transportation, or any other

agency (where applicable) where the approval is not obtained by the Village Engineer. Also, the developer's Engineer shall forward plans to any public utility and/or other agency whose facilities or rights-of-way may be affected by the proposed construction. In granting approval of the plans it shall be understood that the approval of such plans by the addition of the current construction detail sheets, standards, and/or construction specifications as applicable.

4. Upon securing of approvals and construction permits from all other appropriate agencies, the developer shall make an Application for a Permit for Construction of Site Improvements on a form furnished by the Village Department of Public Works. As part of this Application, the developer shall submit the following:

   a. Three sets of approved plans and specifications, including the executed Construction Contract Documents that shall contain as a minimum:

      (1) Certificates of Insurance, with the Village named as co-insured, showing satisfactory Workmen's Compensation Insurance, Public Liability Insurance, and Property Damage Insurance, including motor vehicle exposure and specific coverage for explosion and underground hazards. The limits shall be as determined by the Administrator.

      (2) A Maintenance and Guarantee Bond to the Village in the amount of 50% of the construction contract cost, to guarantee for a period of two years from the date of final written acceptance of such improvements, the correction of any defects or deficiencies in the improvements covered under the construction permit.

      (3) The Contractor's proposal form indicating his unit prices and total construction cost price for which he is to perform the contract.

b. A cash deposit, (in an amount as set forth in Appendix "A" [14.120]), from which the final cost of construction inspection, administration, construction water and/or sewer usage, and any related miscellaneous Village expenses shall be deducted.

c. Such other information and data as the Village Engineer deems necessary to enable the approval of the Construction Permit.

5. Upon approval of the Construction Permit by the Village Engineer and the Superintendent, the developer's construction Contractor shall perform the construction under detailed inspection by a representative of the Village Engineer.

6. Upon completion of construction and prior to using any of the facilities covered under the construction permit, the developer shall apply for a written final approval and acceptance of the Improvements. As part of this Application, the developer shall submit the following:

a. Sworn Statements and Waivers of Lien, indicating that all public improvements have been paid for in full.

b. Two sets of record drawings (one mylar and one print) from the developer's Engineer indicating "as-built" measurements and/or "as-built" elevations for the improvements including "as-built" elevations of drainage swales, inverts of utilities, rim elevations, lead locations, field changes, etc. If the record plans are computer generated the Village Engineer may require submittal of CAD files in a format compatible with Village systems.

c. An appropriate Transfer of Title for all parts of the improvements which will be Public Sewer and/or Public Water Main, together with copies of recorded easements for public utilities as signed by all persons having an interest in the land. A title search statement indicating the names of all persons of interest (certified by a recognized Title Insurance Company) shall accompany the copies of recorded easements.

14.050 .05

STANDARDS: FOR ENGINEERING DESIGN: FOR PREPARATION OF ENGINEERING PLANS AND SPECIFICATIONS: AND FOR CONSTRUCTION OF SITE IMPROVEMENTS

14.051 .0501 **GENERAL**

A. All plans except plot plans submitted shall be on twenty-four (24) inch by thirty-six (36) inch (minimum) white prints having blue or black lines and shall be neatly and accurately prepared. Judgement should be exercised in the design, layout and presentation of proposed improvements.

B. Engineering plans shall have a scale, not to exceed one (1) inch equals forty (40) feet horizontal. Profile views shall have a scale of one (1) inch equals four (4) feet vertical and a horizontal scale compatible with the plan view.

C. Any land development project requiring more than one sheet of plans must be submitted with a "general plan" having a scale of one (1) inch equals one hundred (100) feet (or larger scale) showing the overall project layout (including building locations) and indicating the location of all site improvements proposed.

D. Street names, lot or property lines, and property identification and address numbers shall be shown on all plans.

E. Sewers in easements shall be located at least three (3) feet away from parcel or lot boundary lines. A variation to this requirement can be granted by the Administrator upon presentation of data indicating another location is best suited.

F. Superimposed on a general plan of the site shall be a topographic survey and contour lines of the project area, including the area at least one hundred (100) feet outside of the project area. Where the contour of the land is such that contour lines do not provide enough information to evaluate a proposed grading scheme, spot elevations taken on a fifty (50) ft. grid shall be shown instead. Contour lines shall be shown at intervals as follows:

1. Where the general slope of the land is one percent (1%) or less, the interval shall be one (1) foot.

2. Where the general slope of the land is more than one percent (1%), but less than five percent (5%), the interval shall be two (2) feet.

3. Where the general slope of the land is five percent (5%) or greater, the interval shall be five (5) feet.

G. Any underground or overhead public utilities shall be located in the road (public or private) right-of-way according to the schedule entitled "Standard Utility Locations" shown in Appendix "B" [14.125].

H. All sewers and those water mains having a diameter of sixteen (16) inches or greater shall be indicated in profiles. There shall be a separate plan and profile view for each utility. However, it shall be the responsibility of the design engineer to ascertain that the depth of the storm sewer (or storm drain) does not interfere with the building service sewers crossing the storm sewer. Profiles shall indicate the size of pipe, class of pipe, slope of the utility, and control elevations of the utility. The existing and proposed grade lines shall be shown along the profile view of each utility. The profile shall show all points where utilities cross one another with elevations for each utility calculated and shown. The designer shall maintain a one (1) foot vertical clearance between underground utilities. Water mains shall have eighteen (18) inches vertical clearance from other underground utilities.

I. Elevations shall be based on U.S. Geological Survey datum. The Village Bench Marks shall be used where available and at least three bench marks shall be indicated on the plans for each forty acres or less of the project site area. A minimum of two (2) bench marks shall be provided on each utility profile sheet.

J. Finish grade elevations planned for each structure shall be indicated on the plan view and the profile view.

K. A copy of the site boundary survey with computed control lines indicated, or a copy of the computed plan, if applicable, shall be submitted with the engineering plans.

L. Plans shall have all lettering a minimum height of one-tenth (0.10) of an inch and be of such quality as to provide for a clear and legible micro-film record.

M. All plans and specifications submitted shall bear the seal and original signature of the Registered Professional Engineer responsible for their preparation.

N. The plans covering all of the required Site Improvements for a specifically designated area of the developer's land shall be submitted as one package before any plan review shall commence.

O. The Owner or his agent shall submit a copy of any DEQ permit to work in or modify any wetland or floodplain. A copy of the permit(s), or a letter from DEQ stating that no permit is required, shall be submitted to the Village prior to obtaining approval of engineering plans.

P. All sites five (5) acres or more shall obtain a NPDES Permit from MDEQ prior to construction.

Q. The plan shall contain a location map and any other pertinent data determined necessary by the Village Engineer to properly review the plan.

14.052 .0502 **SITE GRADING AND DRAINAGE WATER COLLECTION AND DISPOSAL**

A. All sets of plans which include plans for storm sewers shall include the current Village Storm Sewer Detail Sheets which shall be considered an inseparable part of the plans when said plans are approved.

B. A Site Grading and Drainage Water Collection and Disposal Plan is required for all Developments, except, if the building site is a site in a Subdivision or other project for which a general site grading plan has been submitted and approved, no separate grading plan or permit will be required. A rear yard (in the case of land subdivisions) or a general site enclosed storm

drainage system shall be designed for all land development projects. If there are any upstream watershed drainage areas which need to be drained through the site under design consideration, sufficient capacity shall be provided to take fully developed upstream watershed drainage areas which need to be drained through the site under design consideration, sufficient capacity shall be provided to take fully developed upstream drainage into the system.

1. Each Subdivision shall have an overall grading plan showing grades for rear yards, sidewalks, and rear yard catch basins. Storm sewers, building finish floor grades, brick ledge (ground) grades and direction of surface drainage flow shall be shown.

2. Rear yard storm sewers shall be required in all subdivisions. Catch basins (two (2) feet minimum diameter) shall be placed at every other property corner so that every lot directly abuts a catch basin in at least one corner. All catch basin outlet sewers shall extend in sidelot easements to the public storm sewer in the road right-of-way.

3. Any required rear yard drain easements shall be a minimum of six (6) feet wide. All side yard drain easements shall be a minimum of twelve (12) feet wide. The Village Engineer shall require additional easement width when sewer size or depth, soils or other conditions warrant a wider easement.

C. 1. Site grading for all building sites shall be reviewed to determine that proposed and/or actual site grading is proper and that drainage from land lying upstream is not obstructed and that downstream properties will not be diversely effected by run-off from the property under design consideration.

2. Before a Certificate of Occupancy for any building is issued, the Administrator shall approve the final site grading and drainage for each building; the Administrator SHALL require that a survey, drawing, and certificate - done by a Registered Professional Engineer or Registered Land Surveyor - be furnished by the developer

indicating that the work has been done in conformity to the approved site grading and drainage plan.

3. It shall be unlawful for any person to interfere with, modify or obstruct the flow of drainage water across any property in any manner different from the approved plan. The exception to this requirement is grading plans for single-family or duplex dwelling units, which may be approved by the Village Engineer.

4. During periods of the year when weather conditions make site grading work unfeasible, a temporary Certificate of Occupancy may be issued, subject to the furnishing of a satisfactory Bond, Letter of Credit, or cash deposit in an amount determined by the Village Engineer guaranteeing the completion of the work when weather conditions permit.

5. Any property owner claiming to be aggrieved by any site grading work, or decision of the Administrator relative to site grading of a parcel of property, shall have the right to appeal the decision of the Administrator to the New Haven Village Building Board of Appeals. Such an appeal must be requested in writing, stating fully and clearly the reasons for the request and including any supplemental information and data which may aid in the analysis of the proposed request. Written notice of the date and time of the hearing shall be delivered to the owner(s) of the property on which the grading work has, is or will be performed. In conjunction with a determination on the appeal, the Building Board of Appeals has express authority to assess as costs against the owner(s) of the property on which the grading work has, is or will be performed, the amount of the filing fee to reimburse the Applicant in the case of a successful appeal. In the event such a reimbursement is ordered, the same may be paid out of any bond proceeds paid by the property owner in conjunction with the subject grading work.

D. The fall of the land away from any building shall be a minimum of six (6) inches in the first twenty-five (25) feet. From this elevation the land shall

slope to a drainage water collection swale at a minimum slope of one (1) foot in one hundred (100) feet (one percent (1%)).

E. The maximum slope of the land for the site shall not exceed one (1) foot in four (4) feet as provided in the Zoning Ordinance. Sodded swale or ditch slopes shall be a maximum slope of one (1) foot vertically and three (3) feet horizontally.

F. Adequate soil erosion and sedimentation control measures shall be specified on the plans - and followed during construction - to conform to the requirements of Michigan Act 347, P.A. of 1972, entitled, "Soil Erosion and Sedimentation Control Act of 1972." A soil erosion permit shall be acquired by the Developer from the Macomb County Public Works Office, a copy of which shall be presented to the Administrator prior to issuance of a Construction Permit.

G. All buildings having foundation drains shall direct the flow of drainage water from such foundation drains into a storm sewer or a storm drain by means of an underground enclosed conveyance pipe 3" diameter (minimum). No building permit shall be issued for any building having a basement without a building service sewer (drainage water) with drainage to a storm sewer or storm drain. Sump and pump shall be required in basements. Pump size shall be adequate to carry intercepted groundwater.

H. Drainage water run-off from building roofs shall be piped to a point five (5) feet away from the outside walls of any building. No drainage water run-off shall be allowed on adjacent property. Drainage water, sump pump water and/or ground water shall not be discharged to the sanitary sewer system.

I. The longitudinal grade of any drainage swale shall not be less than five tenths (0.5) feet per one hundred (100) feet (0.5%). The maximum distance drainage water shall travel in a drainage swale without an intercepting yard catch basin shall be three hundred (300) feet. Not more than one hundred (100) feet of drainage water travel shall be upstream of an angle point (deflection angle forty-five (45) degrees or greater) in the drainage swale. Planned final grade elevations shall be

indicated on the plans at a maximum spacing of fifty (50) feet.

J. Where required by the Village Engineer, a six (6) inch diameter geotextile wrapped perforated drainage pipe shall be provided for drainage with said pipe trench being backfilled entirely with pea gravel up to within four (4) inches of the grade line of the swale.

K. Storm water run-off drainage systems shall be designed for a ten (10) year storm by means of the rational method formula: Q=CIA; where Q is the peak rate of run-off in cubic feet per second, A is the area in acres, C is the co-efficient of run-off for the drainage area and I is the average rainfall intensity in inches per hour for a certain time of concentration. The rainfall intensity shall be determined by the formula: I=175/(T + 25); where T is the time of concentration equal to the time required for a drop of water to run from the most remote point of the watershed to the point for which run-off is being estimated. In most instances, an initial T equal to twenty (20) min. for residential areas can be used. Use T equals fifteen (15) min. in other land use areas. The Developer's Engineer shall use judgement in arriving at proper imperviousness factors, but, in general , the following factors are acceptable minimums:

1. Lawn areas - 0.2

2. Pavement and roof areas - 0.9

3. Overall area of single-family subdivision - 0.35

4. Overall area of multiple housing development - 0.55

5. Overall area of commercial development - 0.85

6. Overall area of industrial development - 0.90

L. Where open County drains are proposed for drainage water disposal, the Manning's formula shall be used for determination of flow depth and capacity. However, if the Village Engineer and/or the Michigan Department of Environmental Quality and/or the Macomb County Public Works Office deem it

advisable, the developer's Engineer may be required to furnish computations and plans showing the backwater curve for the open drain under one hundred-year-flood-flow fully developed upstream watershed conditions.

M. Where possible, provide a minimum of three and one-half (3 1/2) feet of cover from the top of finish road or earth grade to the horizontal centerline of any storm sewer. It will be acceptable to allow the hydraulic gradient to be above the top of the sewer pipe but below the elevation of the lowest structure cover. The design elevation of the hydraulic gradient profile shall be indicated on the sewer profile view. Non submerged drain systems shall be designed to operate with the water surface elevation at or below the eight tenths (0.8) rise level.

N. Access manholes (four (4) foot minimum diameter) shall be provided along the storm sewer at every change of pipe size, change of grade, or change of direction. However, the maximum spacing for storm sewer manholes shall be as follows:

Diameter of Sewer	**Absolute Maximum Manhole Spacing**
12" to 42"	400'
48" to 60"	500'
66" and Larger	600'

NOTE: Height (Rise) of arch and elliptical pipe shall be used as the criteria for manhole spacing.

Leads twelve (12) inches or less in diameter may be core tapped directly into sewers forty-two (42) inches and larger, except that taps shall not be made into a precast manhole tee pipe section. An access manhole on catch basin must located on the lead within twenty-five (25) feet of the tap.

Manholes and catch basins shall be constructed utilizing precast concrete segments or Class A concrete block and mortar.

O. Catch basins shall not be constructed over a main sewer line to replace manholes in street sewers or trunk sewers outside of streets. If a normal manhole location (outside of streets) coincides with a stormwater inlet structure location a catch

basin may be used as a stormwater inlet structure in lieu of the manhole.

P. An end section with prefabricated bar screen shall be installed on the end of all storm sewers twelve (12) inches in diameter and larger which outlet into an open drain. Openings of the bar screen shall be no more than six (6) inches on centers.

Q. In general, pavement type catch basins shall be located as follows:

1. At or near the radius return of street intersections.

2. At all low points in streets.

3. At intermediate points along the street such that there is a maximum pavement drainage area per structure as follows:

a. Intercepting Catch Basins.....10,000 S.F./C.B.

b. Low Point Catch Basins.....12,000 S.F./C.B.

R. Yard type catch basins shall be provided at all low points in drainage swales. Provide intercepting yard type catch basins such that not more than three hundred (300) feet of swale drainage runs into any one catch basin other than a low point catch basin where six hundred (600) feet of drainage is allowed.

S. Improved open drains may be permitted under special circumstances provided the Village Engineer has determined that the enclosure of such open drains would require a storm sewer sixty (60) inches, or larger, in diameter. When open drains are used, the easement width shall be sufficient to accommodate a twenty (20) foot wide maintenance plateau (with a minimum slope of ten percent(10%)) on each side of the channel.

T. The side slopes of open drains shall have a maximum slope of one (1) foot vertical to six (6)feet horizontal, except that a low flow channel may have side slopes of one (1) foot vertical to three (3) feet horizontal. Open drain side slopes shall have an established sod surfacing, or be seeded,

fertilized and mulched, as soon as possible after construction. Sufficient measures shall be taken to conform to the erosion and sedimentation control requirements of applicable state, county or local ordinances.

U. An extension of the storm sewer system shall be provided to furnish an outlet for foundation drain service pipe for any buildings not otherwise serviced; such extensions shall have a minimum diameter of six (6) inches.

V. When, in the opinion of the Village Engineer and/or the Macomb County Public Works Office, there is inadequate drainage water outlet capacity, the Developer shall make necessary downstream drain improvements or be required to install detention basins or reservoirs. If detention is deemed appropriate by the Village Engineer, the storage capacity of such detention basin shall be rated in acre-feet and shall contain a capacity equivalent to a minimum of two tenths (0.2) feet of water over the entire watershed area that drains into the detention basin. Discharge from the detention basin shall be at a controlled rate such that the entire capacity of the basin can be discharged in about forty-eight (48) hours. Additional requirements for storm water detention basins are as follows:

1. The design elevation for storage in the detention basin shall be at least one (1) foot below the low point of the watershed area draining into the detention basin.

2. If construction is approved with side slopes less than required, the detention basin shall be completely fenced. The fence shall be six (6) feet high chain link. A suitable access roadway sixteen (16) feet in width shall run from a hard surfaced roadway to an access gate in the detention basin. The access gate shall be a double opening gate at least fourteen (14) feet in total width and shall be provided with proper locks. The bottom of the fence shall be six (6) inches below the ground surface.

3. The side slopes of the basin shall be one (1) foot vertical to six (6) feet horizontal and the top of the slope shall be a minimum of

twenty (20) feet distant from any fenced enclosure or building.

4. The bottom of the basin shall have a minimum grade of one percent (1.0%). The slope of the gutter line to the outlet shall have a minimum grade of one-half percent (0.5%). Underdrains shall be constructed in the bottom of the basin as required by the Village Engineer. All inlet and outlet pipes shall have a bar screen, flared end section, and rip-rap as required. An inlet manhole shall be provided on the inside of the fence.

5. The entire detention basin area must be seeded (MDOT Class A Seed) or sodded (MDOT Class B Sod) and the turf shall be fully established before the Village approves the detention basin for operation and maintenance.

6. An overflow system shall be provided. The overflow system shall consist of either a pipe having an invert at the design storage level elevation, a control structure or a concrete spillway with an invert five tenths (0.5) feet above the design storage elevation. The concrete spillway shall extend from the inside bank slope to the outlet drain.

7. For basins with pumped outlets, a silt trap and bar screen shall be installed on the inlet pipe to the pump station. The screen clear opening shall be a maximum of two (2) inches.

8. Pumping stations for de-watering of the detention basins shall include duplicate pumps with each pump capable of handling the design flow. The controls shall include a lead pump start and stop, a lag pump start and stop, an alternator for alternating the lead lag pump, a high water alarm system with a light and a horn, and a safety all pumps off control. The control panel, pumps, and wet well shall be installed inside of the fenced enclosure and the controls shall be installed in a suitable weather-proof and vandalproof enclosure. Vehicular access to the pumps shall be provided. Construction shall conform to federal, state, county and local codes.

9. Minimum land area of isolated parcels which will be used as detention basins should be no less than six (6) acres so that they will eventually be usable as public parks. Therefore, adjoining developers should make every effort to consolidate their detention acres into a single site where engineeringly feasible. Smaller sites may be acceptable where they abut directly on other Village or elementary, middle or high school sites.

10. Basin properties shall have a length-to-width ratio of not more than two and one-half (2 1/2) to one (1), unless otherwise approved by the Village.

11. Public street access with a paved roadway, water main and sanitary sewer, shall be provided directly to the site.

12. Basins shall be designed to drain completely within twenty-four (24) hours to forty-eight (48) hours after a rain.

13. Pumps shall be located in close proximity to the entrance gate for easy access during all seasons. The size, make and type of pumps will be determined by the Village to facilitate maintenance.

14. Electrical service shall be extended inside the fence whether gravity flow or pumps are used.

15. Where the basin abuts residential properties (existing or proposed), a dense hedge shall be planted along the inside perimeter of the fence. Trees may be required by the Village where the basin parallels a roadway and in other instances where improved aesthetics could be achieved without interfering with maintenance.

W. A signed maintenance agreement and approved plans for detention facilities and storm drainage facilities (which will not be owned and operated by the Road Commission or Public Works Office), shall be in effect prior to Village approval of the final plat or site plan. The Developer/Builder shall be responsible for dewatering the basin until it is accepted by the Village.

The Developer and/or Builder shall escrow sufficient funds or otherwise assure adequate funds by creating a special assessment district to cover maintenance, operation and insurance liability costs for the expected life of the basin. The Developer and/or Builder shall escrow sufficient funds for the abandonment or refilling when the detention basin is no longer required.

14.053 .0503 **STREET AND PARKING LOT PAVING.**

A. All sets of plans which include plans for street and/or parking lot paving shall include any current Village Paving and/or Parking Lot Detail Sheets which shall be considered an inseparable part of the plans when said plans are approved.

B. Paving for all streets located within dedicated public road rights-of-way shall be designed and constructed in accordance with the currently adopted specifications of the Road Commission of Macomb County.

C. Paving for all other streets and parking lots shall conform to the specifications of the Road Commission of Macomb County or the following specifications whichever is the more stringent requirement:

1. Air entrained concrete for pavement, sidewalks and curbs shall conform to current MDOT Standards for Grade 35P except that the concrete mixture shall contain no less than six (6) sacks of Type 1 or 1A cement per cubic yard. Calcium chloride compounds/admixtures are prohibited.

2. Asphalt pavement shall conform with current Michigan Department of Transportation Specifications Bituminous Pavement (390 lbs. per square yard) surfacing over an approved subbase adequately designed for sufficient thickness (minimum of eight inches) and types to be compatible with loading and subsoil conditions.

   Bituminous pavement mixtures shall conform to current MDOT specifications. Unless otherwise approved by the engineer, the following mixtures shall be utilized for the pavement type.

Pavement Type	MDOT Bituminous Mixture
Commercial & Industrial Roads	4C
Residential Streets	13
Parking Lots	36A

3. The thickness and widths of the street pavements (back to back of curbs) shall be as indicated in Appendix "C" [14.130] of this Ordinance.

4. Maximum allowable pavement grade shall be seven percent (7%) for concrete pavement and for asphalt pavement.

5. Minimum allowable pavement grades shall be as follows:

   a. Concrete pavement gutter grades - 0.40%.

   b. Asphalt pavement gutter grades - 0.60%.

   c. Concrete curb return at intersections - 1.00%

   d. Concrete pavement surface grade to gutter line - 0.50%.

   e. Asphalt pavement surface grade to gutter line - 1.00%.

6. Whenever a change in the grade of two percent (2%) or more occurs, provide a vertical curve with a length determined (to the nearest 50 feet) by the following formula: L=1/2 (G1-G2); where L is the length in stations of one hundred (100) feet per each station and G1 - G2 is the algebraic change of grade in percent.

7. Center line curve date (radius, deflection angle, degree of curvature and total arc length) for all street pavement curves shall be indicated on the plans, unless a final plat is submitted with the plans.

8. The top of curb elevations every fifty (50) feet and at the intersection of each property

line extension to the curb line shall be indicated on the profile view for each street.

9. The minimum sight distances for all roads shall be: three hundred (300) feet for streets with design speeds of thirty-five (35) mph or less; and seven hundred fifty (750) feet for all other streets and roads.

10. When street center lines have a deflection of more than ten (10) degrees, but less than seventy-five (75) degrees, the center line shall have a curve with a minimum radius of: two hundred fifty (250) feet for local streets; three hundred fifty (350) feet for collector streets. Between reverse curves, there shall be a tangent section of: fifty (50) feet for local streets; one hundred (100) feet for collector streets. For deflections of seventy-five (75) degrees or greater, the curvature requirements shall be determined by the Village Engineer.

D. All street pavement in residential areas shall have seven (7) inch curbs. Where the pavement is a boulevard section, island curbs shall be seven (7) inch high curbs. Current Road Commission of Macomb County Specifications shall be adhered to on public roads. All curbing and curb and gutter for streets and parking areas shall be reinforced concrete.

E. A detail shall be drawn for all intersections, "eyebrows" and cul-de-sacs. The detail shall show jointing and detailed pavement surface grades, including gutters and tops of curbs. The minimum scale of the detail shall be one (1) inch equals thirty (30) feet.

F. At the end of a street that will be extended in the future, install a one (1) foot header and standard road end barricade and sign.

G. Where the Village Zoning Ordinance requires off-street parking, the design of the parking area shall conform to the requirements as follows:

1. All parking lot layouts shall be designed to meet the requirements of the Village Engineer and shall receive his written approval.

2. All parking areas shall be paved with either six (6) inches minimum thickness concrete or eight (8) inches minimum thickness of stone aggregate topped with three (3) inches of bituminous concrete surface course. A seven (7) inch high concrete curb shall be placed on drive entrances for the paved parking area. Six (6) inch minimum concrete curbing shall be required in all locations where pavement meets landscaping areas or sidewalk.

3. When the area is to serve three (3) or more automobiles, the individual car spaces shall be marked by painted stripes a minimum of three (3) inches wide. The stripe shall extend from the front of the parking stall space to a distance of eighteen (18) feet. The distance center to center of stripes, as measured perpendicular to the stripes shall be a minimum of nine (9) feet, or as specified in the zoning ordinance.

4. The parking bays for residential areas shall have sixty-four (64) foot wide bays. However, for a single bay, a car overhang of two (2) feet will be assumed and the width between face of curbs may be reduced to sixty (60) feet. Where the parking area is adjacent to the project boundary line, the face of curb shall be located at least two (2) feet from such boundary line.

5. Parking lot layouts for other than residential areas shall be designed in accordance with the general standards indicated in the Village Zoning Ordinance.

6. When sidewalks are provided adjacent to the parking area curbs where car overhangs occur, such walks shall be a minimum width of seven (7) feet as measured from the face of the curb.

H. All materials and workmanship shall conform to the 1990 edition of the MDOT "Standard Specifications for Construction", RCMC published criteria, and the requirements of this ordinance. In the event of a conflict between standards, the most stringent shall govern except when the Village Engineer agrees that a less stringent interpretation is appropriate for the intended use.

14.054 .0504 WATER SUPPLY AND DISTRIBUTION SYSTEM.

A. All sets of plans which include plans for water mains shall include the current Village Water Main Detail Sheets which shall be considered an inseparable part of the plans when said plans are approved.

B. All water mains shall be shown in a plan view. Water main, at location of crossings with other utilities or drains, and those water mains sixteen (16) inches or larger in diameter shall also be shown on a profile view.

C. The plan shall indicate the proposed finished grade elevations of all hydrants, gate wells, and/or other structures and, where a public main or hydrant is not located in a public street, an easement for the main and hydrants. The easement shall extend a minimum of six (6) feet each side of the center line of the main. Additional easement width may be required by the Village Engineer.

D. The type, capacities, location, and layout of a building service water supply pipe shall comply with all requirements of the Village Engineer, the Superintendent, the Macomb County Health Department and the State of Michigan.

E. The type of pipe and joints indicated on the plans shall be in accordance with the currently adopted Village Standards.

F. All water mains shall be installed with a minimum cover of five (5) feet below finished grade. Where water mains must dip to pass under a storm sewer or sanitary sewer, the minimum acceptable clearance shall be eighteen (18) inches. At all open drain crossing a five (5) feet minimum clearance between the proposed ultimate bottom of drain and top of water main shall be provided. The sections which are deeper than normal shall be kept to a minimum length by the use of vertical bends (maximum deflection allowed forty-five (45) degrees) properly anchored.

G. Water mains other than hydrant leads shall be eight (8) inches minimum in diameter in single family or duplex uses. Commercial, industrial and multi-family developments shall require twelve (12) inch minimum diameter mains. No dead end water mains

shall be created. Where no practicable means exists to loop a main during the current project, the Developer and/or Builder shall be required by the Village Engineer to provide stubs for future extensions and connections. All single hydrant leads longer than fifty (50) feet shall be eight (8) inches minimum diameter and shall be valved as a dead end main.

H. All valves, except hydrant valves, shall be installed in a standard gate well. Valves shall be located in the system such that not more than four (4) valves need be turned off to isolate any individual section of water main. Moreover, sufficient valves shall be placed such that not more than thirty (30) dwelling units or service establishments shall be serviced within such section of water main that can be isolated. Where possible valves shall be located at street intersections five (5) feet from the intersecting street right-of-way line.

I. Hydrants shall be installed along the water main at least every five hundred (500) feet. However, in no case shall any external part of any building be more than three hundred (300) feet from a hydrant. In commercial or industrial districts, additional hydrants may be required. Hydrants shall be installed at the ends of all dead end water mains. When near a street intersection, hydrants shall be located a minimum of fifteen (15) feet from the intersecting street right-of-way line.

14.055 .0505 **WASTEWATER COLLECTION AND DISPOSAL SYSTEM.**

A. All sets of plans which include plans for sanitary sewers shall include the current Village Sanitary Sewer Detail Sheets which shall be considered an inseparable part of the plans when said plans are approved.

B. For every sanitary sewer project, there shall be indicated on the profile view a manhole with a twelve (12) inch deep manhole sump to be used for testing for infiltration. This manhole generally shall be the first manhole upstream from the point of connection to the existing sanitary sewer system. No sanitary sewer section having an infiltration rate, or an exfiltration rate, of more than fifty (50) gallons per inch of pipe diameter per mile of pipe per twenty-four (24) hour period

shall be approved for connection to the Village Sanitary Sewer System. A low pressure air test may be required in lieu of an infiltration test.

C. The minimum allowable size for public sanitary sewers shall be eight (8) inches diameter. The minimum size of building service sewer (wastewater) shall be six (6) inch diameter. A minimum of six (6) inch building service sewer shall be provided for a building containing from one (1) to twelve (12) dwelling units (or equivalent), all commercial and industrial buildings; a minimum of eight (8) inch building service sewer shall be provided for a building containing from thirteen (13) to one hundred (100) dwelling units (or equivalent). An approved cleanout will be installed at the sewer ROW or easement line when the lead is extended to the premises.

D. The following table of acceptable slopes for sanitary sewers shall be adhered to:

Sewer Size	**Minimum Slope**	**Maximum Slope**
4"	2.00%	6.5%
6"	1.00%	6.5%
8"	0.40%	5.0%
10"	0.30%	4.0%
12"	0.22%	3.0%
15"	0.15%	2.0%
18"	0.12%	1.5%
21"	0.10%	1.3%
24"	0.08%	1.2%

Gravity sewers shall be designed for a minimum velocity of two (2) feet per second and a maximum of eight (8) feet per second. Where sufficient depth is available, the extreme upstream run of sewer without the potential for future extension shall have the minimum slope increased to develop a design velocity of three (3) feet per second.

E. Sanitary sewage force mains shall be designed for a minimum velocity of two (2) feet per second and a maximum velocity of ten (10) feet per second, unless otherwise approved. Force mains shall be shown in a profile view with grades and elevations indicated thereon. An air relief and cleanout assembly manhole shall be provided at high points. Access (cleanout assembly) manholes shall be provided along the force main at least every 600 feet.

F. A building service sewer shall be indicated on the plans for each building in the project. Where sanitary sewers are planned along roadways, the building service sewers shall be extended across the roadways (to the right-of-way line) prior to paving.

G. Manholes shall be provided along all sanitary sewers at:

1. Points of horizontal deflection;

2. Points where the size of sewer is changed;

3. Points where the slope of the sewer is changed;

4. At junctions with other sewer lines;

5. At the upstream terminus of a sewer run;

6. Along the sanitary sewer at other locations such that the maximum spacing between manholes shall not exceed four hundred (400) feet:

H. At manholes where size of sewer changes, match eight tenths (0.8) diameter elevation points of inlet and outlet sewer. At horizontal deflections in the sanitary sewer greater than forty-five (45) degrees, a minimum of one tenth (0.10) feet additional adjustment in grade elevation shall be provided to allow for loss of head. However, additional elevation adjustments may be made when conditions allow same; provided that, when the invert of any inlet sewer is more than eighteen (18) inches above the outlet sewer, a drop assembly shall be provided. External drop connections will not be permitted unless special permission is granted by the Superintendent.

I. In general, sanitary sewers shall be located within a public street right-of-way or public easements adjacent to street R.O.W. Sanitary sewers shall not be located within rear lot easements, except in extremely unusual circumstances as determined by the Village Engineer. Where public sanitary sewers are located outside of public streets, they shall be placed in a recorded public utility easement that provides for unlimited access to the sanitary sewer for repairs, connections, and maintenance. The minimum acceptable width of easements for public sanitary sewers shall be twenty (20) feet

wide; except that, if adjacent and parallel to the public street, it may be reduced to twelve (12) feet wide.

J. The sanitary sewer trunk line shall be designed to have a minimum depth from finish grade elevation to top of sewer of eight and one-half (8.5) feet at local control points or nine (9) feet at locations where the sewer grade is parallel to the road grade. All sewer mains shall be constructed at the maximum practicable depth to facilitate future extensions of the main. In no case shall collector sewers be built with less than five (5) feet of cover.

K. Each wye or terminus of building service sewer shall be plugged with an infiltration proof plug in accordance with current adopted Village standards.

L. The type of pipe and joints for sanitary sewers shall be in accordance with currently adopted Village Standards.

M. When required by the Superintendent, the owner of any property serviced by a building sewer carrying industrial wastes shall install a suitable control manhole together with such necessary meters and other appurtenances in the building sewer to facilitate observation, sampling and measurement of the wastes. Such manhole, when required, shall be accessible and safely located, and shall be constructed in accordance with plans approved by the Superintendent. The manhole shall be installed in a public sewer or utility easement by the owner at his expense, and shall be maintained by him so as to be safe and accessible at all times.

N. Any wastewater treatment system or plant serving more than one residential dwelling unit, or serving commercial or industrial property shall:

a. Conform to the State Clean Water Act, and obtain a valid discharge permit.
b. Discharges shall be limited to a maximum of five (5.0) mg/l of total inorganic nitrogen (measured as nitrogen), five-tenths (0.5) mg/l total phosphorus, both measured as thirty (30) day averages.
c. Surface water discharges shall have a minimum of five (5.0) mg/l dissolved oxygen.

d. Plans shall be subject to review and approval by the Village Engineer.

14.056 .0506 OTHER SITE IMPROVEMENTS

A. **SIDEWALKS AND DRIVEWAYS.**

1. Sidewalks shall have a minimum thickness of four (4) inches in pedestrian only areas and a minimum of seven (7) inches in areas where vehicular traffic will cross the walk. Sidewalks shall extend continuously thru all driveways.

2. The width of the walk shall be a minimum of five (5) feet for public walks and a minimum of three (3) feet for other than public walks and are subject to review and approval by the Village.

3. Single-family and two-family residential concrete driveways shall be a minimum of four (4) inches thick except that portion within the public right-of-way which shall be a minimum of six (6) inches thick. All other concrete drives shall be a minimum of six (6) inches thick except that portion within the public right-of-way which shall be a minimum of eight (8) inches thick. Bituminous pavement residential driveways are acceptable provided they have a minimum of six (6) inches of stone or slag base surfaced with three (3) inches of bituminous surface course. The developer's Engineer shall design an adequate base and surface thickness to be compatible with existing subbase conditions and anticipated design loads for all non-residential driveways.

4. Construction joints with a half (.5) inch premolded expansion filler shall be placed at maximum intervals of fifty (50) feet. Contraction joints shall be placed at maximum intervals of five (5) feet, or equal to the width of walk, whichever is greater. Expansion joints shall be placed at all curbs, at all intersecting walks and at all changes in direction.

5. Sidewalks shall be constructed along a planned longitudinal grade line. The maximum

longitudinal slope shall be five percent (5%). The transverse slope of the sidewalk shall be a minimum of two percent (2%) (1/4 inch per foot) and a maximum of five percent (5%).

6. Concrete for sidewalks and driveways shall have a twenty-eight (28) day compressive strength of at least thirty-five hundred (3500) pounds per square inch.

B. **OTHER UTILITIES.**

1. Unless otherwise approved by the Village Engineer, the installation of public utilities other than Village sanitary sewers, water mains, or storm sewers shall not be started until the finished grade has been established. The Utility Company's contractor shall be required to restore the ground to the finished grade. The drainage water swales shall be restored to a workable condition at least as good as existed prior to construction. Furthermore, all land and/or other physical features affected by the construction of the public utility shall be restored to a condition at least as good as that existing at the time construction began.

C. **BUILDING ELEVATIONS.** Outside building elevations, (either the brick ledge or ground grade) shall be determined by adding between twelve (12) and eighteen (18) inches to the highest elevation of the road (centerline or top of curb) which is adjacent to the frontage of the lot. Building elevation variations (from the above requirements) can be made on corner lots or where setbacks substantially exceed the minimums established by the Zoning Ordinance when approved by the Village Engineer. All site and plot plans submitted to the building department shall show all outside building elevations of structures on adjacent lots or lots in close proximity to the proposed structure for the purpose of the Village Engineer determining if the proposed outside building elevations and drainage are harmonious with the neighborhood's structures. The Village Engineer shall adjust proposed outside building elevations, if required, to maintain acceptable differentials between adjacent structures. In no case shall the outside building elevation be less than the established flood plain elevations.

The Village Engineer shall consider stepped or multiple outside building elevations of individual structures in relationship to the road elevation, adjacent structure elevations, and/or the effect they may have on adjacent vacant lots and approve same, only if they are harmonious with existing house grades and are not detrimental to future construction on adjacent vacant lots. The Village Engineer, when reviewing and/or approving outside building elevation, shall review and approve the site storm drainage plan. A site or plot plan shall not be approved unless positive drainage exists or will be provided. No storm drainage shall be directed onto adjacent lots except in easements established to accommodate storm drainage. The Village Engineer shall review site plans only if they are complete in every respect and contain sufficient information to assure Ordinance compliance.

D. **ENGINEERED SEPTIC FIELDS.** Engineered septic fields shall be defined as septic tank fields designed to be constructed above existing ground level. Building plans (site or plot plans) reviewed by the Village Engineer shall show final elevation and location of proposed engineered septic fields. Engineered septic fields shall not be approved by the Village Engineer unless provisions have been made to maintain existing drainage patterns and storm drainage is not directed onto adjacent lots except thru or across easements and/or natural defined water courses provided specifically for storm water run-off. Engineered septic fields located in front yards shall be designed to blend with surrounding areas, be landscaped and meet all other Ordinance requirements.

E. **FILLING VACANT LOTS.** Vacant Subdivision lots or parcels shall not be filled unless a fill permit is obtained from the building department following approval of a plot plan by the Village Engineer. The requirements for obtaining a fill permit shall include but not be limited to providing a detailed grading plan showing existing and proposed grades of the lot or parcel to be filled, and existing grades on adjacent lots and/or structures, roads and related drainage, and a canal if applicable. A fill permit will not be issued unless the preceding requirements are met and all storm drainage is directed to a bonafide storm drainage outlet. In no case shall storm water be directed onto adjacent

property. Final fill elevations shall be based on Section 14.0506 C. Fill permits for individual parcels or lots less than two (2) acres in size shall be issued for a ninety (90) day period. Parcels and lots of two (2) acres or more shall be issued for a one hundred eighty (180) day period. Fill permits may be renewed one time only. After filling is complete, final grading and the establishing of vegetative cover shall be required within thirty (30) days.

14.057 .0507 CONSTRUCTION AND CONSTRUCTION INSPECTIONS.

A. All work covered under a Permit for Construction of Site Improvements shall be performed according to the approved plans and specifications and in accordance with the requirements of this Ordinance. By making an application for a Permit for Construction of Site Improvements, the Developer grants the Village the right to perform inspection of any work covered under the Permit and the Developer shall correct, at his expense, any work which is discovered to be done in conflict with the approved plans and specifications or in conflict with the requirements of this Ordinance.

B. The fee for construction inspection as determined by the Administrator shall be deducted from the amount of the construction inspection deposit paid upon application for a Permit for Construction as set forth in Appendix "A". If the fee so determined exceeds the amount of the deposit, the Developer shall make up such deficiency in deposit by paying forthwith, upon discovery, an additional deposit to cover the cost of inspection until the job is completed and approved. Upon completion and final approval of the work, any money left in the construction inspection deposits account will be returned to the Developer.

C. The Village reserves the right to inspect all work covered under the Permit for Construction of Site Improvements and intends to provide detailed inspection for all of the following:

1. All of those types of construction where detailed inspection requirements are covered under the Village Sewer and Water Ordinance;

2. All sanitary sewers (public or private) including connections thereto;

3. All water supply pipe (public or private) including connections thereto;

4. All open and enclosed storm drains (public or private) including connections thereto, except in the case of those storm sewers considered private storm sewers in mobile home parks that do not receive drainage water from premises other than the mobile home park site.

5. All site grading and pavement for any site.

The Village will provide inspection sufficient to verify compliance with requirements of Village ordinances for all private storm sewers, sidewalks, driveways, street pavements, and/or parking lot pavements. The Developer shall provide competent construction surveyors and inspectors for detailed inspection for all construction not inspected in detail by the Village.

14.060 **.06**

VARIANCES

14.061 .0601 **CRITERIA FOR GRANTING.**

The Administrator may authorize a variance from the provisions of this Ordinance when it determines that undue hardship may result from strict compliance with specific provisions or requirements of this Ordinance. In granting any variance, the Administrator may prescribe other conditions that it deems necessary or desirable for the public interest. No variance shall be granted unless the Administrator finds;

A. There are special circumstances or conditions affecting the situation such that a strict application of the provisions of this Ordinance would deprive the applicant of reasonable use of his property;

B. That the variance is necessary for the preservation and enjoyment of the substantial property right of the applicant;

C. That the granting of the variance will not be unduly detrimental to the public welfare or injurious to other property in the Village.

D. That such variance will not have the effect of nullifying the interest and purpose of this

Ordinance nor violate the provisions of other State or Federal Regulations.

14.062 .0602 **APPLICATION.**

Any person may apply for such variance by requesting same in writing, stating fully and clearly the reasons for the request and including any supplemental information and data which he believes may aid in the analysis of the proposed request.

14.070 **.07**

EFFECTIVE DATE

.0701 This Ordinance shall become effective thirty (30) days after the date of its publication.

14.080 **.08**

VALIDITY

.0801 This Ordinance and the various parts, articles, sections, subsections and clauses thereof are hereby declared to be severable. If any part, sentence, paragraph, subsection, section or clause is adjudged unconstitutional or invalid, it is hereby provided that the remainder of the Ordinance shall not be affected thereby.

14.090 **.09**

VIOLATIONS AND PENALTIES

.0901 Any violation of any of the provisions of this Ordinance shall constitute a misdemeanor. Each day that a violation is permitted to exist or does in fact exist shall constitute a separate offense. Any person, firm or corporation that violates any of the provisions of this Ordinance shall be guilty of a misdemeanor and upon conviction thereof, shall be subject to a fine of not exceeding five hundred dollars ($500) or ninety (90) days in jail, or both, in the discretion of the Court. The imposition of any sentence shall not exempt the offender from compliance with the requirements of this Ordinance and such further action as the Village shall take with respect to said violation in Macomb County Circuit Court or elsewhere as authorized by law.

Adopted:
Effective:

14.120

APPENDIX "A"
SCHEDULE OF FEES

I. PLAN REVIEW - ADMINISTRATION FEES.

A. Fee for a Public Utility Company other than the Village.

1. For installations to be made as part of a Developer's Project, there shall be no separate charge.

2. For installations in locations other than a Developer's Project, the fee shall be at the rate of eight cents ($.08) per foot of utility proposed to be constructed with a minimum fee per project of one hundred dollars($100.00).

B. Fee for a Developer (Not Including a Public Utility Company).

1. The charges to be paid to the Village Department of Public Works for the plan review administration fee for a specific parcel of land on which the engineering plan are completed shall be as follows:

   a. For a single dwelling unit site: Ninety Dollars ($90) for submittal review and up to one rereview, Fifty Dollars ($50) for any subsequent reviews.

   b. For projects with site improvement construction costs* of Thirty-Five Thousand Dollars ($35,000) or less, Four Hundred Sixty-Five Dollars ($465.00).

   c. For projects with site improvement construction costs greater than Thirty Five Thousand Dollars ($35,000) the fee shall be one and thirty-three hundredth percent (1.33%) of the estimated site improvement construction costs.

   *The site improvement construction cost shall be based on all site improvements (excluding buildings) which includes

improvements constructed off-site for the benefit of the development. The tabulation of quantities and the construction cost estimate shall be submitted with the plans and shall be prepared by a registered Civil Engineer and shall bear the Engineer's Seal and signature. Unit costs utilized shall be based upon anticipated current prices for publicly bid project. If the Village Engineer determines that the submitted estimate is incorrect, he may prepare a revised estimate and require the applicant to pay the additional review fees and the cost of the estimate preparation.

If multiple reviews are required, the Developer and/or Builder will be invoiced on an hourly basis for the additional review charges that exceed the above fee values.

II. **CONSTRUCTION INSPECTION CHARGES.**

A. To cover the cost of construction inspection, the Applicant shall pay a minimum cash deposit to the Village Department of Public Works based on the applicable one of the following conditions:

	DEPOSIT AMOUNT
1. For a construction cost estimated to be less than $10,000.00	10% of Construction Cost - Minimum of $200.00.
2. For a construction cost estimated to be from $10,000.00 to $100,000.00	6% of Construction Cost - Minimum of $600.00
3. For a construction cost estimated to be over $100,000.00	5% of Construction Cost - Minimum of $5,000.00.

III. **CASH BONDS - UTILITY COMPANIES.**

A. To guarantee the restoration of land and/or other physical features, affected by the construction of the public utility, the Utility Company's

Contractor shall make a cash bond payment to the Village computed as follows:

Item	Bond
1. For a single or multiple pole relocation of an overhead wire installation:	No Bond Necessary
2. For an underground utility installation within a Developer's Project:	$0.50 per ft. of utility with a minimum of $1,000.00/Project
3. For an underground utility installation outside of a Developer's Project:	$2.50 per ft. of utility with a minimum of $5,000/Project

IV. **FEES.**

A. Provided that all fees established by this Ordinance may be modified by Village of New Haven Board resolution upon the recommendation of the Administrator.

14.125

APPENDIX "B"
SCHEDULE OF "STANDARD UTILITY LOCATIONS"

	LOCATION OF UTILITIES FROM CENTER LINE (1)					
SUBJECT UTILITY	60' ROW (24' Pvmt with curbs) (2)	60' ROW (28' Pvmt with curbs) (2)	70' ROW (36' Pvmt with curbs) (2)	86' ROW (36' Pvmt with curbs) (2)	86' ROW (48' Pvmt with curbs) (2)	120' ROW (65' Pvmt with curbs) (2)
Sanitary Sewer (3)	36L	36L	41L	49L	49L	50'L
Storm Sewer	21L	21L	26L	27L	27L	40L
Gas	18R	18R	21R	27R	31R	35R
Hydrants	22R	22R	24R	24R	28R	38R
Water Main	25R	25R	27R	26R	30R	42R
Sanitary Sewer (Second) (3)	-	-		49R	49R	66R
Second Water Main (or Storm Drain)	-	-		-	-	52L
DE - MBT (Underground)	-	-		-	-	52R
DE - MBT (Overhead)	31R	31R	36R	44R	44R	61L/R
Curb Radius at Intersections	35'	20'	40'	30'	35'	40'

Notes:

(1) L means Left; R means Right. In some existing streets where one or more of the utilities have been installed in a location other than described above, the location of remaining proposed utilities shall be determined by the Village Engineer with the concurrence of the Road Commission when appropriate.

Where, in the opinion of the Village Engineer, these locations are not desirable or possible, suitable adjustments may be made.

(2) This is not a categorically approved width of pavement, but only an allowance assumed for purposes of this schedule.

(3) Sanitary sewers shall be installed in twelve (12) feet wide easements adjacent to street rights-of-way when and where ten (10) feet separations cannot be maintained between sanitary sewers and storm sewers and/or sanitary sewers and water mains. In no case shall available ROW and easement be less than two (2) times the depth of the utility plus three (3) feet. Based on utility depth, size, soils and related conditions, the Village Engineer may require wider easements.

14.130

APPENDIX "C"
PAVEMENT REQUIREMENTS

I. **GENERAL.** In all public and private streets, the requirements of the Road Commission of Macomb County, the current edition of the MDOT "Standard Specifications for Highway Construction", and related documents shall govern except where this Ordinance imposes a higher or more demanding requirement. For all other streets the provisions of this Ordinance shall govern.

II. **RESIDENTIAL AREAS.**

A. For proposed Subdivisions where the average width of lots is less than ninety-eight (98) feet: Provide a concrete pavement (minimum seven (7) inches thick) with concrete curb and gutter having a minimum width of twenty-eight (28) feet for local streets and thirty-six (36) feet for collector streets; except, if a dual roadway with an island is proposed, each roadway shall be a minimum of twenty-one (21) feet wide.

B. For proposed Subdivisions where the average width of lot is ninety-eight (98) feet or more: Provide a concrete pavement (minimum seven (7) inches thick) with concrete curb and gutter having a minimum width of twenty-four (24) feet for local streets and twenty-eight (28) feet for collector streets.

C. For improvements to existing local or collector roads minimum Road Commission of Macomb County requirements shall prevail.

D. For apartments, condominiums and mobile home parks, provide a concrete pavement (minimum seven (7) inches thick) with concrete curb and gutter having a minimum width of twenty-four (24) feet for local streets and twenty-eight (28) feet for collector streets except for a dual roadway with an island each roadway shall be a minimum of twenty-one (21) feet.

E. As an alternate, bituminous aggregate pavements are acceptable provided they meet the above width requirements and shall have a minimum of six (6) inches 21AA or 22A limestone or blast furnace slag surfaced with three and one half (3 1/2) inches of bituminous aggregate surface course.

III. **INDUSTRIAL AREAS.** Industrial street pavement designed for Class A all weather use shall be a minimum of nine (9) inch thick concrete with curbs and gutter having a minimum width of thirty-six (36) feet. Minimum road right-of-way shall be seventy (70) feet wide.

IV. **COMMERCIAL AND OTHER AREAS - PUBLIC OR PRIVATE STREETS.** Pavement (with curb and gutter where appropriate) shall be provided for the driving and service lanes of these developments. The width of pavement shall be such as to provide at least two (2) - twelve (12) foot wide driving lanes unobstructed by parked vehicles. Appropriate additional allowances shall be made for situations where a high incidence of temporary or permanent parking is anticipated. The concrete pavement shall have a thickness as specified in .0506, A.3. As an alternate, bituminous aggregate pavements are acceptable provided they meet the above width requirements and shall have a minimum of six (6) inches limestone or slag surfaced with three and one half (3 1/2) inches of bituminous surface course.

V. **ALL PAVEMENTS.**

The Developer's Engineer shall design an adequate road base thickness to be compatible with the existing subgrade conditions and anticipated design loads.

Concrete curb and gutter shall be MDOT C-4 on local streets. On major streets, curb and gutter shall be MDOT F-4, or as directed by the roadway agency of jurisdiction. All other curb and curbs with gutters shall be concrete of a section approved by the Village Engineer.

Six (6) inch perforated edge drain is required along both pavement edges.

Unless it is demonstrated as unnecessary, geogrid or geotextile base reinforcement shall be utilized to the type and manufacturer shall be approved by the Village Engineer.

Existing paved or gravel roads with embankments too narrow to comply with the above stated pavement width may be paved to such widths as determined adequate by the Village based on traffic volumes and safety criteria.

EFFECTIVE DATE:

This Ordinance shall take effect thirty (30) days from and after publication of a Notice of Adoption of said Ordinance in the Voice, a newspaper of general circulation within the Village of New Haven, Macomb County, Michigan.

PUBLICATION

Notice of Adoption of an Amendment to the Engineering Standards Ordinance was published in the Voice in substantially the following form.

PLEASE TAKE NOTICE that the Village of New Haven Board of Trustees did adopt to the Engineering Standards Ordinance at their Regular Board meeting of May 13, 1997.

The purpose of this Ordinance is to regulate and control all land development within the Village of New Haven and to promote the safety, public health, and general welfare of residents of the Village; to provide minimum requirements for Site Improvements for land development; to establish standards for engineering design and detailed engineering plans and specifications for Site Improvements; to provide for construction standards for land development Site Improvements; to promote the orderly layout and use of land; and to control building development within the Flood Plain areas.

Copies may be reviewed at the following locations:

Village of New Haven Offices
58725 Haven Ridge
New Haven, MI 48048
From

MERIBETH FORDYCE, CLERK
VILLAGE OF NEW HAVEN

It was moved by Mitchell and seconded by Fowler that the above language be adopted and order published in the Voice.

AYES: 7
NAYS: 0
EXCUSED: 0
MOTION CARRIED.

Meribeth Fordyce, Clerk
Village of New Haven

CERTIFICATION

I, MERIBETH FORDYCE, Clerk of the Village of New Haven, Macomb County, Michigan, do hereby certify that the within and foregoing Ordinance, the Engineering Standards Ordinance, was adopted by the Village of New Haven Council on 5-13, 1997, at its regular meeting and notice of said meeting was given pursuant to and in full compliance with the Open Meetings Act 267, Public Acts of Michigan, 1976, and that the minutes of said meeting were kept and will be or have been made available as required by said Act.

Meribeth Fordyce

MERIBETH FORDYCE, CLERK
Village of New Haven