

**CHARTER TOWNSHIP OF WASHINGTON
MACOMB COUNTY, MICHIGAN
ORDINANCE NO. 143**

LAND DEVELOPMENT AND UTILITY

TITLE

186.000 LAND DEVELOPMENT AND UTILITY Ordinance No. 143 Adopted: 05/19/10

AN ORDINANCE regulating and controlling all land development and utility installation within the Charter Township of Washington, providing minimum site requirements for site improvements and land development and utility design and installation, establishing standards for engineering design and detailed engineering plans and specifications for site improvements and utility installation, providing for construction standards for land development site improvements and utilities, promoting the orderly lay out and uses of land, controlling building development within Flood Plain areas, providing penalties for the violations thereof, and repealing any ordinances and/or resolutions in conflict herewith.

THE TOWNSHIP BOARD OF THE CHARTER TOWNSHIP OF WASHINGTON, MACOMB COUNTY, MICHIGAN ORDAINS:

186.0000 GENERAL PROVISIONS

186.0001 Short Title.

Sec. 86.0001. This Ordinance shall be known and cited as the “Land Development and Utility Ordinance”.

186.0002 Purpose.

Sec. 86.0002. The Purpose of this Ordinance is to regulate and control all land development and utility installation within the Township of Washington and to promote the safety, public health, and general welfare of residents of the Township; to provide minimum requirements for site improvements for land development and utility design and installation; to establish standards for engineering design and detailed engineering plans and specifications for site improvements and utility installation; to provide for construction standards for land development site improvements and utilities; to promote the orderly layout and use of land; and to control building development within Flood Plain areas.

186.0003 Authority.

Sec. 86.0003. This Ordinance is adopted pursuant to and in accordance with Act 359, Michigan Public Acts of 1947, as amended, and Act 288, Michigan Public Acts of 1967, as

amended, and should be read in conjunction with the Township Subdivision Ordinance, Township Zoning Ordinance, and Township Construction Code Ordinance.

186.0004 Scope.

Sec. 86.0004. This Ordinance applies to all land development causing or requiring the reshaping, grading, or regrading of such land. This Ordinance also applies to all sewer, drainagewater and/or water facilities located outside of any building which are presently connected to, or will be expected to be connected to, the Township Sewer and/or Water System. This Ordinance is not intended to cover sewer and/or water facilities inside of any buildings, since these facilities are to be regulated by the Township Plumbing Code. The proposed installation of any improvements – including public utilities such as gas piping, electric or telephone wiring (underground or overhead), oil piping, television cable, Regional Water Supply Transmission Mains, public water main extensions; Regional Sanitary Sewer Interceptors, public sanitary sewer extensions; and/or Drainage Facilities – is subject to the provisions herein contained.

This Ordinance shall not apply to the development of land for agricultural purposes, and except for site grading and drainage, this Ordinance shall not apply to:

1. Subdivision or developments completed prior to the effective date hereof.

This Ordinance does not repeal, abrogate, annul, or in any way impair or interfere with existing provisions of other laws, ordinances, or regulations, except 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 Township, the provisions of this Ordinance shall control.

186.0005 Administration.

Sec. 86.0005. This Ordinance shall be administered by the Township Board. The Supervisor of the Township and/or the Superintendent of the Department of Public Works appointed by the Board is/are the Enforcement Officer(s) for provisions of this Ordinance. The City of Detroit, through the Detroit Water and Sewerage Department, as the State approved Control Authority, is authorized to administer and enforce the sanitary sewage provisions of this Ordinance on behalf of the Charter Township of Washington. The Township has executed and hereby ratifies its delegation agreement with the City of Detroit through the Detroit Water and Sewerage Department, which sets forth the terms and conditions of such delegated authority, consistent with this Ordinance, and shall allow the Detroit Water and Sewerage Department to perform the specific responsibilities of Control Authority pursuant to State and Federal law.

186.0100 DEFINITIONS.

186.0101 Rules of Construction.

Sec. 86.0101. 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.

186.0102 Words defined.

Sec. 86.0102. Unless the context specifically indicates otherwise, the meaning of the terms used in this Ordinance shall be as follows:

“*Authorized Representative of Industrial User*” shall mean the Responsible corporate officer, where the industrial user submitting the reports required by this division is a corporation, who is either (a) the president, vice-president, secretary, or treasurer of a corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation; or (b) the manager of a one or more manufacturing, production, or operation facilities employing more than two hundred and fifty (250) persons or having a gross annual sales or expenditures exceeding twenty-five million dollars (\$25,000,000) in second-quarter 1980 dollars, when authority to execute documents has been assigned or delegated to said manager in accordance with corporate procedures; or (ii) A general partner or proprietor where the industrial user submitting the reports required by this division is a partnership or sole proprietorship respectively.

“*Available cyanide*” shall mean the quantity of cyanide that consists of cyanide ion (CN⁻) hydrogen cyanide in water (HCN_{aq}), and the cyano-complexes of zinc, copper, cadmium, mercury nickel and silver, determined by EPA method OIA-1677, or other method designated as a Standard Method or approved under 40 CFR 136.

“*Available Public Sanitary Sewer*” shall mean a publicly-owned sanitary sewer system located within a service area designated on the township sewer plan in a right-of-way, easement, highway, street, or public way which crosses, adjoins, or abuts upon the property, and passing not more than 200 feet at the nearest point from a structure in which sanitary sewage originates.

“*Available Public Water Main*” shall mean a publicly-owned water main system in a right-of-way, easement, highway, street, or public way which crosses, adjoins, or abuts upon the property, and passing not more than 200 feet at the nearest point from a structure in which sanitary sewage originates.

“*Backflow*” shall mean water of questionable quality, waste, or other contaminants entering a public water main (supply) system due to a reversal of flow.

“*Best Management Practices (BMP)*” shall mean programs, practices, procedures or other directed efforts initiated and implemented by the User which can or do lead to the reduction, conservation or minimization of pollutants being introduced into the ecosystem, including but are not limited to the Detroit sewer system. BMPs include, but are not limited to, equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training, or inventory control and may include technical and economic considerations.

“*Biochemical Oxygen Demand*” (BOD) shall mean the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in five (5) days at 20 degrees Celsius, expressed in milligrams per liter.

“*Board*” shall mean the Township Board of Trustees, Charter Township of Washington, State of Michigan.

“*Building*” shall mean any structure, including a mobile home, that requires a supply of potable water and/or means of disposal of wastewater.

“*Building Drain*” shall mean that part of the lowest horizontal piping of a building drainage system that receives the discharge from soil, waste, and other wastewater drainage pipes inside the walls of the building and conveys it to the building service sewer which begins at a point four feet (1.2 meters) outside of the outer face of the building.

“*Building Service Sewer (Drainagewater)*” or “*Customer’s Storm Drain*” shall mean any drainagewater pipe extension from a building foundation drain outlet point – located four feet (1.2 meters) outside of a building or dwelling unit – to any private or public stormwater drain, pipe, ditch, etc.

“*Building Service Sewer (Wastewater)*” or “*Customer’s Service Sewer*” shall mean the sewer extension from a building sanitary sewer outlet point – located four feet (1.2 meters) outside of a building or a dwelling unit – to a point of connection with any private or public sanitary sewer. Sewer Services are considered private and shall be maintained by the premises which it serves.

“*Building Service Water Supply Pipe*” or “*Customer’s Water Service Pipe*” shall mean any water supply means, pipes, services, and/or appurtenances, except meters, that extend from a point of connection with the building water piping – located four feet (1.2 meters) outside of a building or a dwelling unit – to a point of connection with the public water

supply system. Water Services are considered private and shall be maintained by the premises which it serves.

“*Bypass*” shall mean the intentional diversion of a wastestream from any portion of an industrial user’s treatment facility.

“*Capital Expenditures*” shall mean those expenditures, including principal and interest, that are considered amortizable over a period of time in excess of one (1) year and which are made for those additions to, or improvements of, the system having long operating usability capable of serving future users as well as existing users.

“*Centralized waste treatment (CWT) facility*” shall mean any facility that treats any hazardous or nonhazardous industrial waste received from off-site by tanker truck, trailer roll-off bins, drums, barges, or any other forms of shipment including (i) a facility that treats industrial waste received exclusively from off-site, and (ii) a facility that treats industrial waste generated on-site as well as industrial waste received from off-site.

“*Classes of Users*” shall mean the division of wastewater treatment customers by waste characteristics, and process or discharge similarities. The distinct classes are:

“*Residential*” which shall include all dwelling units such as detached, semi-detached, and row houses, mobile homes, garden and standard apartments, and permanent multi-family dwellings. (Transit lodging, considered commercial in nature is not included.)

“*Commercial*” which shall include transit lodging, retail and wholesale establishments or places engaged in selling merchandise for personal, household, or industrial consumption, and/or rendering service to others.

“*Institutional*” which shall include social, charitable, religious, and educational activities such as schools, churches, hospitals, nursing homes, penal institutions and similar institutional users.

“*Governmental*” which shall include legislative, judicial, administrative, and regulatory activities of Federal, State and local governments, such as courthouses, police and fire stations, city halls, and similar governmental users.

“*Industrial*”

- (a) Shall mean a source of indirect discharge under regulations issued pursuant to Section 402, of the Act (33 USC 1342), which source originates from, but is not limited to, facilities engaged in industry, manufacturing, business, trade or research, including the development, recovery or processing of natural resources.

- (1) In determining the amount of a user's discharge for purposes of industrial cost recovery, the Township may exclude domestic wastes or discharges from sanitary conveniences.
 - (2) After applying the sanitary waste exclusion in subparagraph (1) of this paragraph (if the Township chooses to do so), discharges in the above divisions that have a volume exceeding 25,000 gpd or the weight of biochemical oxygen demand (BOD) or suspended solids (SS) equivalent to that weight found in 25,000 gpd of sanitary waste are considered industrial users. Sanitary wastes, for purposes of this calculation of equivalency, are the wastes discharges from residential users. The Township, with the Regional Administrator's approval, shall define the strength of the residential discharges in terms of parameters including, as a minimum, BOD and SS per volume of flow.
- (b) Any nongovernmental user of a publicly owned treatment works which discharges wastewater to the treatment works which contains toxic pollutants or poisonous solids, liquids, or gases, in sufficient quantity either singly or by interaction with other wastes, to contaminate the sludge of any sewage municipal systems, or to injure or interfere with any sewage treatment process, or which constitutes a hazard to humans or animals, creates a public nuisance, or creates any hazard in or has an adverse effect on the waters receiving any discharge from the treatment works.
 - (c) All commercial users of an individual system constructed with grant assistance under section 201(h) of the Act (Public Law 92-500) and Federal Regulation 40CFR 35.918(a)(3).

"Combined Sewer" shall mean a sewer intended to receive both wastewater and drainagewater.

"Compatible Industrial Wastewater" shall mean wastewater that is produced by an industrial user which has a pollutant strength or characteristics similar to those found in domestic wastewater, and which can be efficiently and effectively transported and treated with domestic wastewater.

"Compatible Pollutant" shall mean pollutants which can effectively be removed by the POTW treatment system to within the acceptable levels for the POTW residuals and the receiving stream.

"Composite sample" shall mean a collection of individual samples which are obtained at regular intervals and collected on a time-proportional or flow-proportional basis over a specified period and which provides a representative sample of the average stream during the sampling period. A minimum of four (4) aliquot per twenty-four (24) hours shall be used where the sample is manually collected.

“*Confidential information*” shall mean the information which would divulge information, processes or methods of production entitled to protection as trade secrets of the industrial user.

“*Control Authority*” shall mean the Charter Township of Washington; the Detroit Water and Sewerage Department is also a control authority with regards to sanitary sewage limits and industrial pretreatment.

“*Cooling Water*” shall mean the non-contact water discharges from any use such as air conditioning, cooling or refrigeration, and whose only function is the exchange of heat.

“*Cross connection*” shall mean: as connection or arrangement of water piping or appurtenances through which a backflow could occur, causing water of questionable quality, waste, or other contaminants to enter the public water main system.

“*Customer*” shall mean the person responsible for payment of water supply and/or wastewater-drainage-water disposal service charges.

“*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 case of a supply for a single building) or on the customer side of a master water meter where the Township has allowed the use of a master water meter to serve special types of customers.

“*Days*” shall mean the consecutive calendar days for the purpose of computing a period of time.

“*Department*” shall mean the Department of Public Works of the Township.

“*Department*” or “*Developer’s Project*” or “*Project*” shall mean a specifically designated site being developed (or proposed for development) by a Developer.

“*Department of Natural Resources and Environment*” (sometimes abbreviated “*DNRE*”) shall mean the State agency, which regulates Wastewater and Water Supply Facilities in the State and regulated wetlands in the State.

“*Direct Discharge*” shall mean the discharge of treated or untreated wastewater directly to the waters of the State of Michigan.

“*Discharger*” shall mean a person who, directly or indirectly, contributes, causes or permits wastewater to be discharged into the POTW.

“*Ditch*” or “*Drainage Swale*” shall mean an open channel used to transport water, groundwater, surface water runoff, or drainagewater from any source.

“*Domestic Sewage*” shall mean waste or wastewater from humans or household operations which is discharged to, or otherwise enters, the sanitary sewer system and/or the treatment works.

“*Drainage Facilities*” or “*Drainagewater Facilities*” shall mean any Storm Sewers or Storm Drains, including private storm facilities and/or facilities designated as County Drains, that receive water from lands owned by more than one owner.

“*Drainagewater*” shall mean and include: stormwater, subsurface groundwater, melting snow or ice, roof and/or other surface water runoff, or cooling water.

“*Drainagewater Disposal System*” shall mean all of the drainagewater disposal facilities taken collectively that are operated and maintained by the Department of Public Works.

“*Dwelling Unit*” shall mean a building or unit thereof that is occupied by one or more persons as a residence (with a single set of culinary facilities) intended for a single family.

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

“*Environmental Protection Agency or administrator or EPA administrator*” shall mean the United States Environmental Protection Agency or, where appropriate, the authorized representatives or employees of the EPA.

“*Facility*” shall mean a location, which contributes, causes or permits wastewater to be discharged into the POTW including, but not limited to, a place of business, endeavor, arts, trade or commerce, whether public or private, commercial or charitable.

“*Fats, Oils or Grease (FOG)*” shall mean any hydrocarbons, fatty acids, soaps, fats, waxes, oils, and any other nonvolatile material of animal, vegetable or mineral origin that’s extractable by solvent in accordance with standard methods.

“*Floatable Oil*” shall mean oil, fat, or grease in a physical state such that it will separate by gravity from wastewater by treatment in an approved pretreatment facility. A wastewater shall be considered free of floatable oil if it is properly pretreated and the wastewater does not interfere with the collection system.

“Flow proportional sample” shall mean a composite sample taken with regard to the flow rate of the wastestream.

“Foundation Drain Service Pipe” shall mean a conveyance pipe that receives only foundation drain groundwater seepage, exclusive of directly and intentionally introduced surface water runoff.

“Garbage” shall mean the animal and vegetable waste resulting from the handling, preparation, cooking, and serving of foods.

“Grab sample” shall mean an individual sample collected over a period of time not exceeding fifteen (15) minutes, which reasonably reflects the characteristics of the stream at the time of sampling.

“Grease” shall mean a group of substances, including fats, waxes, free fatty acids, calcium and magnesium soaps, mineral oils, and certain other nonfatty materials which are extractable by the laboratory procedures outlined in “Standard Methods for the Examination of Water and Wastewater.”

“Grease Interceptor” shall mean a device that shall receive the drainage from fixtures and equipment with grease-laden waste located in food preparation areas, such as in restaurants, hotel kitchens, hospitals, bars, cafeterias and the like, and also described as a device for separating and retaining waterborne greases and grease complexes prior to wastewater entering the sanitary sewer collection system

“Improvement” shall mean any structure constructed to enhance the value of the property, such as water main, sanitary sewer, storm sewer, curb, driveways, sidewalk, etc.

“Incompatible Pollutant” shall mean any pollutant that is not defined as a compatible pollutant, including non-biodegradable solids.

“Indirect discharge or discharge” shall mean the discharge or the introduction of pollutants into the POTW from any non-domestic source regulated under 33 U.S.C.§1317(b),(c)or(d).

“Industrial user” shall mean a person who contributes, causes or permits wastewater to be discharged into the POTW, including, but not limited to, a place of business, endeavor, arts, trade or commerce, whether public or private, commercial or charitable but excludes single family and multi-family residential dwellings with discharges consistent with domestic waste characteristics.

“Industrial Waste” shall mean any liquid, solid, or gaseous waste or form of energy or combination thereof resulting from any process of industry, manufacturing, business, trade or research, including the development, recovery or processing of natural resources.

“Infiltration” shall mean the water entering a sewer system, including building drains and sewers, from the ground through such means as, but not limited to, defective pipes, pipe joints, connections, or manhole walls. (Infiltration does not include, and is distinguished from, inflow.)

“Inflow” shall mean the water discharges into a sewer system, including building drains and sewers, from such source as, but not limited to, roof leaders, cellar, yard and area drains, foundation drains, unpolluted cooling water discharges, drains from springs and swampy areas, manhole covers, cross connections from storm sewers and combined sewers, catch basins, storm sewers, surface runoff, street washwaters or drainage. (Inflow does not include, and is distinguished from, infiltration.)

“Interference” shall mean a discharge which, alone or in conjunction with a discharge or discharges from other sources, both: (i) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and (ii) Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, as amended, being 33 U.S.C. § 1345, the Solid Waste Disposal Act (SWDA), as amended, (including the Resource Conservation and Recovery Act (RCRA), and State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

“Land Developer” (sometimes called *“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”

“Landscape Wall” shall mean a free-standing wall that may or may not be built to retain or support the lateral pressure of earth or water or other superimposed loads and may or may not provide a difference in grade level from one side of the wall to the other. However, if a grade change is present from one side of the wall to the other, the slope of the ground uphill or downhill from the wall for the height of the wall shall not be greater than 1 foot vertical on 6 feet horizontal. This wall shall not retain earth with any pavement or other superimposed loads on top of the wall for a distance from the top of the wall equal to its height.

“Lot” shall mean a measured portion of a parcel or tract of land which is described and whose location is established in a recorded plat.

“*Mains*” (sometimes called “*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.

“*Major Contributing Industry*” shall mean an industry that: (1) has a flow of 25,000 gallons or more per average work day; (2) has a flow of greater than five percent of the flow carried by the municipal system receiving the waste; (3) has in its waste a toxic pollutant in toxic amounts as defined in standards issued under Section 307(a) of PL92-500 of 1972; or (4) has a significant impact, whether singly or in combination with other contributing industries, or a treatment works or on the quality of effluent from that treatment works.

“*Master Thoroughfare Plan*” shall mean the Comprehensive Master Thoroughfare Development Plan which sets forth the location, alignment, and dimensions of existing and proposed street rights-of-way adopted by the Township.

“*May*” shall mean permissive.

“*Michigan Department of Community Health*” (sometimes abbreviated “*MDCH*”) shall mean the State agency, which regulates Water Supply Facilities in the State and certain Wastewater Disposal Facilities in the State.

“*National Categorical Pretreatment Standard*” shall mean any regulation containing pollutant discharge limits promulgated by the EPA in accordance with 33 U.S.C. § 1317 (b) and (c) which applies to a specific class or category of industrial users.

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

“*NPDES Permit*” shall mean a permit issued under the National Pollutant Discharge Elimination System for discharges of wastewaters to the navigable waters of the United States pursuant to Section 402 of PL92-500.

“*New source*” shall mean: (i) Any building, structure, facility or installation from which there is or may be a discharge of pollutants, the construction of which commenced after the publication of proposed pretreatment standards under 33 U.S.C. § 1317(c) which will be applicable to such source if such standards are thereafter promulgated in accordance with that section, provided, that: (a) the building, structure, facility or installation is constructed at a site where no other source is located; or (b) the building, structure, facility or installation totally replaces the process or production equipment that causes the discharge of pollutants at an existing source; or (c) the production or wastewater generating processes of the building, structure, facility or installation are substantially independent of an existing source at the same site. In determining whether these are substantially independent, factors such as the

extent to which the new facility is integrated with the existing plant, and the extent to which the new facility is engaged in the same general type of activity as the existing source should be considered; or (ii) Construction on a site where an existing source is located resulting in a modification rather than a new source if the construction does not create a new building, structure, facility or installation meeting the criteria of paragraphs (i)(b) or (i)(c) of this definition but otherwise alters, replaces, or adds to existing process or production equipment; or (iii) Construction of a new source has commenced where the owner or operator has: (a) begun, or caused to begin as part of a continuous on site construction program: (1) any placement, assembly, or installation of facilities or equipment; or (2) significant site preparation work including clearing, excavation, or removal of existing buildings, structures, or facilities that are necessary for the placement, assembly, or installation of new source facilities or equipment; or (b) entered into a binding contractual obligation for the purchase of facilities or equipment which are intended to be used in its operation within a reasonable time. Options to purchase or contracts which can be terminated or modified without substantial loss, and contracts for feasibility, engineering, and design studies do not constitute a contractual obligation under this section.

“Open Drain” shall mean a large open channel used to transport water, groundwater, surface water runoff, or drainagewater from any source.

“Parcel” shall mean a tract of land with or without existing building(s) thereon that is, or is intended to be served by the Wastewater Disposal system and/or water supply system.

“Parking Lot” shall mean a designated area used primarily for the 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.

“Pass Through” shall mean discharge which exits the POTW into waters of the United States in quantities or concentrations, which alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW’s NPDES permit including an increase in the magnitude or duration of a violation.

“Person” shall mean any individual, partnership, co-partnership, firm, company, association, society, corporation, governmental agency (including school district), joint stock company, trust, estate or other legal entity, or their representative, agent or assigns.

“pH” shall mean the intensity of the acid or base condition of a solution, calculated by taking the negative base-ten logarithm of the hydrogen-ion activity. Activity is deemed to be equal to concentration in moles per litre. Neutral water, for example, has a pH value of 7 and a hydrogen-ion concentration of 10 to the negative power of 7.

“*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 plan for a proposed building on a tract of land showing the proposed building footprint along with detailed survey marks for the grading (both existing and proposed elevations) and boundary information for that tract of land. The plot plan shall furnish the essential data for laying out the building on that tract of land, including dimensions; existing and proposed utilities, driveways, sidewalks, retaining walls, landscape walls, etc.

“*Pollutant*” shall mean any dredged spoil, solid waste, incinerator residue, sewage garbage, sewage sludge, munitions, chemical waste, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, or industrial, municipal and agricultural waste which is discharged into water.

“*Pollution*” shall mean the introduction of any pollutant that, alone or in combination with any other substance, can or does result in the degradation or impairment of the chemical, physical, biological or radiological integrity of water.

“*Preliminary Subdivision Plat*” 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.

“*Premises*” shall mean a tract of land with the building(s) thereon that is, or intended to be, owned and maintained by a single responsible person who is to be served as a single customer by a single Customer Wastewater Disposal Outlet and a single water supply meter. Each Mobile Home Park is considered separately as premises.

“*Pretreatment*” shall mean the reduction of the amount of pollutants, the removal of pollutants, or the alteration of the nature of pollutant properties in wastewater to a less harmful state prior to or in lieu of discharging or otherwise introducing such pollutants into the POTW. The reduction, removal or alteration may be attained by physical, chemical or biological processes, or process changes by other means, except as prohibited by federal, State or local law, rules and regulations.

“*Pretreatment Requirements*” shall mean any substantive or procedural requirements related to pretreatment, other than a national pretreatment standard imposed on an industrial user. [See 40 C.F.R. § 403.3(r).]

“*Pretreatment Standards*” shall mean all National Categorical Pretreatment Standards, the general prohibitions specified in 40 C.F.R. § 403.5(a), the specific prohibitions delineated

in 40 C.F.R. § 403.5(b), and the local or specific limits developed pursuant to 40 C.F.R. § 403.5(c), including the discharge prohibitions specified in section **[56-3-59.1 of this Code.]**

“Private Sewer” and *“Private Storm Sewer”* and *“Private Drain”* shall mean a storm sewer that serves more than one user or premises and is maintained privately by a single user or premises or by a subdivision association.

“Private Wastewater Disposal System” shall mean a Septic Tank with sub-surface 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.

“Private Water Supply System” shall mean any system by which potable groundwater is withdrawn and supplied to premises that is approvable by the Macomb County Health Department and/or the State of Michigan.

“Properly Shredded Garbage” shall mean the wastes from the preparation, cooking, and dispensing of food that have been shredded to such a degree that all particles will be carried freely under the flow conditions normally prevailing in public sewers, with no particle greater than one-half inch (1.27 centimeters) in any dimension.

“Public Sanitary Sewer” shall mean a sanitary sewer intended to be located in public easements or 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 Department of Natural Resources and Environment .

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

“Public Utility Company” (sometimes called *“Utility Company”*) shall mean a legally constituted firm, corporation, or agency – other than the Township or a county agency acting under contract with the Township – that operates under a franchise or agreement approved by the Township 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 Water and Sewerage 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 Department

of Natural Resources and Environment . The service pipe, extending from a public water main to a “Customer Water Supply Outlet,” shall be considered “Private”

“*Publicly Owned Treatment Works (POTW)*” shall mean a treatment works as defined by 33 U.S.C. § 1292(2)(A) which is owned by a state or municipality, as defined in 33 U.S.C. § 1362, including: Any devices and systems used in the storage, treatment, recycling, or reclamation of municipal sewage or industrial waste of a liquid nature; (ii) Sewers, pipes and other conveyances only if they convey wastewater to a POTW treatment plant; or (iii) The municipality, as defined in 33 U.S.C. § 1362, which has jurisdiction over the indirect discharges to and the discharges from such a treatment works.

“*POTW Treatment Plant*” shall mean that portion of the POTW designed to provide treatment to wastewater, including recycling and reclamation of wastewater.

“*Quantification Level*” shall mean the measurement of the concentration of a contaminant obtained by using a specified laboratory procedure calculated at a specified concentration above the detection level. It is considered the lowest concentration at which a particular contaminant can be quantitatively measured using a specified laboratory procedure for monitoring of the contaminant.

“*Replacement Costs*” shall mean expenditures for obtaining and installing equipment, accessories, or appurtenances that are necessary during the service life of the treatment works to maintain the capacity and performance for which such works were designed and constructed.

“*Representative Sample*” shall mean any sample of wastewater, which accurately and precisely represents the actual quality, character, and condition of one (1) or more pollutants in the wastestream being sampled. Representative samples shall be collected and analyzed in accordance with 40 C.F.R. Part 136.

“*Retaining Wall*” shall mean a free-standing wall built to retain or support the lateral pressure of earth or water or other superimposed loads that provides a difference in grade level from one side of the wall to the other that exceeds one foot.

“*Right-of-Way*” (sometimes abbreviated “*R.O.W.*”) shall mean land reserved, used, or to be used for a street, alley, walkway, or other public purposes.

“*Roof Leader*” or “*Downspout*” shall mean a drain or pipe that conducts stormwater from the roof of a structure downward and thence into a sewer for removal from the property or into the ground for runoff or seepage disposal.

“Sanitary Sewage or Wastewater” shall mean wastewater discharged from the sanitary conveniences of dwellings and other buildings and places which sanitary conveniences are used or installed.

“Sanitary Sewer” (sometimes called *“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 of ground, storm, and surface waters that are not admitted intentionally.

“Sewage Force Main” (sometimes called *“Force Main”* or *“Pressure Sewer”*) shall mean a wastewater conveyance pipe that carries wastewater under pressure.

“Sewer Main Benefit Fee” shall mean a fee, to be paid by an Applicant for Wastewater Disposal Service, that is intended to cover the Applicant’s fair share of the total project cost of construction for a minimum sized public sanitary sewer across the frontage of his property.

“Shall” shall mean mandatory.

“Significant Industrial User” shall mean any user of the POTW who: (i) Has an average discharge flow of 25,000 gallons per day or more of process wastewater excluding sanitary, boiler blowdown, and noncontact cooling water; or (ii) Has discharges subject to the national categorical pretreatment standards; or (iii) Requires pretreatment to comply with the specific pollutant limitations of this division; or (iv) Has in its discharge toxic pollutants as defined pursuant to 33 U.S.C. § 1317, or other applicable federal and State laws or regulations, that are in concentrations and volumes which are subject to regulation under this division as determined by the Department; or (v) Is required to obtain a permit for the treatment, storage or disposal of hazardous waste pursuant to regulations adopted by this State or adopted under the Federal Solid Waste Disposal Act, as amended by the Federal Resource Conservation and Recovery Act, as amended, and may or does contribute or allow waste or wastewater into the POTW including, but not limited to, leachate or runoff; or (vi) Is found by the City of Detroit or the Charter Township of Washington to have a reasonable potential for adverse effect, either singly or in combination with other contributing industries, on the POTW operation, the quality of sludge, the POTW's effluent quality, or air emissions generated by the POTW.

“Significant Noncompliance” shall mean any violation which meets one(1) or more of the following criteria: (i) Chronic violations of wastewater discharge limits, defined as those in which sixty-six(66) percent or more of all of the measurements taken during a six (6) month period exceed by any magnitude the daily maximum limit or the average limit for the same parameter; (ii) Technical review criteria (TRC) violations, defined as those in which thirty-three(33) percent or more of all of the measurements for each pollutant parameter taken during a six-month period equal or exceed the product of the daily maximum limit or

the average limit multiplied by the applicable TRC (TRC = 1.4 for BOD, TSS, Fats, Oil and Grease, and 1.2 for all other pollutants except pH); (iii) Any other violation of a pretreatment effluent limit (daily maximum or longer term average) that the Department determines has caused, alone or in combination with other discharges, interference or pass-through including endangering the health of POTW personnel or the general public; (iv) Any discharge of a pollutant that has caused imminent endangerment to human health or welfare, or to the environment, or has resulted in the POTW's exercise of its emergency authority; (v) Failure to meet a compliance schedule milestone contained in a local control mechanism, or enforcement order for starting construction, completing construction, or attaining final compliance within ninety (90) days after the scheduled date; (vi) Failure to provide required reports such as baseline monitoring reports, ninety-day compliance reports, periodic self-monitoring reports, and reports on compliance with compliance schedules within thirty (30) days after the due date; (vii) Failure to accurately report noncompliance; or (viii) Any other violation or group of violations which the Department determines will adversely affect the operation or implementation of the local pretreatment program.

“*Site Distance*” shall mean the unobstructed (straight-line) length of view from a driver’s eye height of four feet to an object height of six 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, including, but not limited to, site grading; retention basins, detention basins, drainagewater 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; and/or other appropriate appurtenant items.

“*Site Plan*” shall mean the plan required under the Township zoning ordinance for “Site Plan Review” for all projects other than a land subdivision plat.

“*Slug*” shall mean any discharge of water or wastewater, which in concentration of any given constituent, or in quantity of flow, exceeds for any period of duration longer than fifteen (15) minutes, more than five (5) times the average twenty-four (24) hour concentration of flows during normal operation, and adversely affects the collection system and/or performance of the wastewater treatment works.

“*Standard Industrial Classification (SIC)*” shall mean a classification pursuant to the Standard Industrial Classification Manual issued by the Executive Office of the President, Office of Management and Budget, 1987, as amended.

“*Standard Methods*” shall mean the laboratory procedures set forth in the latest edition at the time of analysis, of “Standard Methods for the Examination of Water and Wastewater”,

as prepared, approved and published jointly by the American Public Health Association, the American Water Works Association and the Water Pollution Control Federation, or methods acceptable to the United States Environmental Protection Agency.

“*State*” shall mean the State of Michigan.

“*Stop Valve*” (sometimes called “*Curb Stop*”) shall mean the valve placed on a building service water supply pipe that is located at a “Customer Water Supply Outlet”.

“*Storm Water*” shall mean any flow occurring during or following any form of natural precipitation and resulting therefrom.

“*Stormwater Drain*” (sometimes termed “*Storm Drain*” or “*Storm Sewer*”) shall mean a watercourse intended for the conveyance of water, groundwater, surface water runoff, drainagewater, 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 runoff into an underground storm sewer.

“*Street*” shall mean any street, avenue, boulevard, road, alley, 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 are deeded or dedicated to the Macomb County Road Commission.
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 Macomb County Road Commission for ownership, operation or maintenance.
3. “*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 right-of-way width of sixty feet.
4. “*Street, collector*” shall mean a street intended to carry traffic from local streets to major roads as designated on the Township Master Thoroughfare Plan. Collector streets shall have an 86 feet wide right-of-way.

“*Superintendent*” shall mean the person appointed by the Board to manage the Department of Public Works.

“*Surcharge*” shall mean a charge for BOD, suspended solids, or other measurements of wastewater strength when the strength thereof is in excess of the strength of normal domestic sewage.

“*Surface Water Run-off*” (sometimes called “*Stormwater*”) shall mean that part of rainfall or melting snowfall that reaches the stormwater drain as runoff from natural land surfaces, building roofs, or pavements.

“*Suspended Solids*” shall mean total suspended matter that either floats on the surface of, or is in suspension in water, wastewater, or other liquids, and that is removable by laboratory filtering as prescribed in “Standard Methods for the Examination of Water and Wastewater.”

“*Tabulation of Quantities*” shall mean a list of construction items together with the quantity of each item planned to be constructed.

“*Total Project Cost of Construction*” shall mean the entire cost of construction, including costs of engineering, layout, inspection, administration, legal services, bonding costs, contingencies and other related incidental costs.

“*Total PCB*” shall mean the sum of the individual analytical results for each of the PCB aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260 during any single sampling event with any aroclor result less than the quantification level being treated as zero.

“*Total Phenolic Compounds*” shall mean the sum of the individual analytical results for each of the phenolic compounds of 2-chlorophenol, 4-chlorophenol, 4-chloro-3-methylphenol, 2,4-dichlorophenol, 2,4-dinitrophenol, 4-methylphenol, 4-nitrophenol, and phenol during any single sampling event expressed in mg/l.

“*Township*” shall mean the Charter Township of Washington, County of Macomb, State of Michigan.

“*Township Engineer*” shall mean the staff registered professional engineer or the consulting engineer representing the Township in this position.

“*Toxic Pollutant*” shall mean any pollutant or combination of pollutants designated as toxic in regulations promulgated by the Administrator of the U.S. Environmental Protection Agency under the provisions of the Clean Water Act, being 33 U.S.C. § 1317, or included in the Critical Materials Register promulgated by the Michigan Department of Environmental Quality, or by other federal or State laws, rules or regulations.

“*Trade Secret*” shall mean the whole, or any portion or phase, of any proprietary manufacturing process or method, not patented, which is secret, is useful in compounding an article of trade having a commercial value, and whose secrecy the owner has taken reasonable measures to prevent from becoming available to persons other than those selected by the owner to have access for limited purposes but excludes any information regarding the quantum or character of waste products or their constituents discharged or sought to be

discharged into the Detroit wastewater treatment plant, or into the wastewater system tributary thereto.

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

“*Underdrain pipe*” shall mean a perforated or loose joint 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.

“*Unpolluted Water*” shall mean water of a quality equal to, or better than, the effluent criteria currently in effect, or water that would not cause violation of receiving water quality standards and would not be benefited by discharge to the Township sanitary sewers and wastewater disposal system provided.

“*Upset*” shall mean an exceptional incident in which there is unintentional and temporary noncompliance with limits imposed under this division or with national categorical pretreatment standards due to factors beyond the reasonable control of the industrial user but excludes noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

“*User*” shall mean the owner or occupants of any premises connected with and/or using any of the facilities operated by the department.

“*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.

“*Wastewater*” (sometimes called “*Sewage*”) shall mean the spent water of a community, including liquid and water- carried wastes from residences, commercial buildings, industrial plants, institutions, together with any groundwater, surfacewater, and stormwater that may be present. Normal Domestic Wastewater or Sewage as defined for the purposed of determining surcharge, shall mean wastewater or sewage having an average daily suspended solids concentration of not more than 300 mg/l, an average daily BOD of not more than 300 mg/l, an average daily phosphorus concentration of 13 mg/l and containing not more than 100 mg/l of hexane soluble matter (fats, oil and grease).

“*Wastewater Discharge Permit*” shall mean permits issued by the Detroit Water and Sewerage Department.

“*Wastewater Disposal Facility*” or “*Wastewater Facility*” shall mean any part, or all, of the property, structures, equipment, sewers, materials, and/or appurtenances used in conjunction with the act of collecting, and disposing of, wastewater.

“*Wastewater Disposal Service Charge*” shall mean a charge levied on users of the wastewater disposal system for the cost of operation and maintenance of such system pursuant to Section 204(b) of PL92-500 of 1972.

“*Wastewater Disposal System*” shall mean all of the Wastewater Disposal Facilities taken collectively that are operated and maintained by the Department of Public Works.

“*Wastewater System Benefit Fee*” shall mean a fee, to be paid by an Applicant for Wastewater Disposal Service for a specific type of building use, that is intended to cover the Applicant’s fair share portion of Wastewater Disposal System capital expenditures required to provide capacity or service for such specific type of building use; said capital expenditures are made for item such as (but not limited to) the following: land; buildings; structures; equipment; portions of the cost of sewers and appurtenances not charged against benefited frontage; pumping stations and force mains; Sewage Treatment Facilities; and Master Township Wastewater Disposal Meters. The fee is determined by the number of units of potential capacity demand (hereinafter called “Sewage Capacity Units”) that the specific type of building use imposes on the Wastewater Disposal System; a single sewage capacity unit is considered equal to the capacity demand imposed by an average dwelling unit.

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

“*Water Main Benefit Fee*” shall mean a fee, to be paid by an Applicant for Water Supply Service, that is intended to cover the Applicant’s fair share of the total project cost of construction for a minimum sized public water main across the frontage of his property.

“*Water Supply Facility*” shall mean any part, or all, of the property, structures, equipment, mains, pipes, materials, meters, and/or appurtenances used in conjunction with the act of supplying potable water to water supply service customers.

“*Water Supply System*” shall mean all of the Water Supply Facilities taken collectively that are operated and maintained by the Department of Public Works.

“*Water System Benefit Fee*” shall mean a fee, to be paid by an Applicant for Water Supply Service for a specific type of building use, that is intended to cover the Applicant’s fair share portion of Water Supply System capital expenditures required to provide capacity or service for such specific type of building use; said capital expenditures are made for items such as the following: land; buildings; structures; equipment; portions of the cost of water

mains and appurtenances not charged against benefited frontage; pumping stations; storage tanks or basins; and Master Township Water Supply Meters. The fee is determined by the number of units of potential capacity demand (hereinafter called "Water Capacity Units") that the specific type of building use imposes on the Water Supply System; a single water capacity unit is considered equal to the capacity demand imposed by an average dwelling unit.

"*Waters of the State*" shall mean groundwater, lakes, rivers, streams, all other watercourses and waters within the confines of this state as well as bordering this state in the form of the Great Lakes.

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

186.1000 SITE IMPROVEMENTS REQUIRED FOR DEVELOPMENT OF LAND.

186.1100 Site Grading and drainagewater collection and disposal systems.

Sec. 86.1100.

- A. Except for agricultural purposes, it shall be unlawful for any person to change the drainage pattern of any land by excavating, grading, or filling without first obtaining Site Plan approval (if required) and the appropriate approval(s) and/or permits from the Township. Each site shall receive such grading for the purpose of directing surface water runoff to appropriate drainagewater collection and disposal systems as is necessary, and same shall be done in a manner which will not cause drainagewater from the site to flow onto adjacent land nor obstruct the flow of existing drainage from adjacent properties. Drainagewater collection and disposal systems shall be provided to collect surface water runoff and/or building foundation drain groundwater seepage. The drainagewater collection system shall consist of enclosed storm sewers 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 having a basement. The collected drainagewater shall be conveyed to a point of disposal that shall be a stormwater drain.

- B. When it is determined by the Township and/or the Macomb County Drain Commissioner that inadequate drainagewater outlet capacity exists on a site proposed for development as a single family subdivision, the developer shall install an adequate retention/detention basin with controlled-outlet facilities to limit the rate of flow of drainagewater from his site, per Appendix A: Engineering Design Standards. Final approval of any plans which include a retention/detention basin shall be conditioned upon an operation and maintenance agreement with the Township which shall include as a minimum the following provisions:
 1. The developer shall grant an easement over the land occupied by the retention/detention basin and the access roadway to the retention basin, which

easements and the agreement required herein shall expire upon the cessation of use of the site as a retention/detention basin

2. For subdivisions and non-condominium project: the developer shall establish a Special Assessment District over the benefiting property prior to acceptance of the project for the maintenance of the detention/retention basin(s). All expenses for the establishment of the Special Assessment District shall be paid for by the developer.
3. Said agreement shall also include a workable method for the assessment and the collection of sums for the operation and maintenance of said retention basin from benefited property owners by a homeowners association established for said subdivision, and shall provide the Township with the power to assess and collect said assessments in the event the homeowners association is unable to do so. The assessment and collection of sums as herein required shall occur only when insufficient monies remain on deposit with the Township for continued operation and maintenance of said retention basin. Said Agreement shall be in the form of a covenant running with the land and shall be recorded coincidental with the recording of the final plat.

186.1200 Street and parking lot pavement and rights-of-way

Sec. 86.1200.

- A. All land developments served with roadways or parking areas shall be subject to the requirements of Appendix A: Engineering Design Standards.
 - B. 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 Township Board 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.
 - C. Where the Township Zoning Ordinance requires off-street parking, each parking space (or stall) shall be ten feet in width and twenty feet in length. Parking areas shall be paved unless it is demonstrated to the Township Board that dust and tracking will not be a problem off-site. In multiple family developments, all driving lanes (including those between parking stalls) shall be paved twenty-four feet wide. All paved areas shall have curbs or bumper blocks adjacent to sidewalks and at the site boundaries to prevent vehicles from crossing onto pedestrian walkways and adjacent sites. Moreover, parking lots shall be designed in accordance with standards contained in this Ordinance.
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- A. All water supply and water main distribution systems that are intended to be operated as public facilities shall be conveyed to the Township for operation and maintenance.

186.1300 WATER SUPPLY FACILITIES

186.1301 Potable water supply and distribution system.

Sec. 86.1301.

- A. All developments shall be serviced by potable water supply and distribution systems acceptable to the Township. A site plan or a preliminary subdivision plan submitted to the Township shall be accompanied by data describing the type of potable water supply and distribution system that is to be provided for the development and written approval for use of same from Macomb County Health Department and/or the Department of Natural Resources and Environment . The developer shall transmit said statement to the Township with his request for Township approval.
- B. All potable water supply and distribution systems shall comply with Appendix A: Engineering Design Standards.

186.1302 Private water supply.

Sec. 86.1302.

- A. Where a public water main is not available under the provisions of this Ordinance a building service water supply pipe may be connected to a private well system complying with the provisions of the Macomb County Health Department, and/or the State of Michigan, and this Ordinance.
- B. A building permit shall not become effective until the applicant has obtained a permit for a private well from the Macomb County Health Department and filed a copy with the Township.

186.1303 Public Water Supply.

Sec. 86.1303.

- A. It shall be unlawful for any person to tap any water main or pipe of the water supply system, or to insert therein any corporation stop or any other fixture or appliance, or to alter or disturb any supply pipe, corporation stop, stop valve (curb stop), gate valve, hydrant, water meter (including the removal of the water meter), or any other attachment being part of the water supply system without first obtaining a written permit from the Superintendent. Furthermore, no person shall install any building service water supply pipe or water main; or connect or disconnect any such building service water supply pipe with, or from, the mains or supply pipes of the water supply system; or with, or from, any other building service water supply pipe now, or hereafter, connected with the system; or make any repairs, additions to, or alterations of, any such building service water supply pipe, or any other fixture or attachment connected with any such pipe, without first obtaining a permit from the Superintendent.
- B. It shall be unlawful for any person to access water from any fire hydrant without a permit to do so, with the exception of the personnel of the Department of Public Works and the Washington Township Fire Department.

- C. All water supply and water main distribution systems that are intended to be operated as public facilities shall be conveyed to the Township for operation and maintenance.
- D. Any person desiring to do any of the above shall make application on a form furnished by the Township. There shall be two classes of permits: a Class 1 Permit – a Permit for Installation of Customer’s Water Service Pipe; and a Class 2 Permit – a Permit to Construct a Connection to, and/or an Extension of, Public Water Mains. Proposed construction of water supply pipe for a Mobile Home Park shall be applied for under the Class 2 Permit.

An application for any of the above Permits shall be supplemented with any plans, specifications, and/or any other information necessary for compliance with water and sewer connection guidelines.

An Applicant for a Class 1 Permit shall pay a Construction Inspection Deposit as set forth in the Utility Fees Schedule. Any application for a Class 2 Permit shall be made in accordance with Section 80.04, of this Ordinance.

- E. A separate and independent building service water supply pipe shall be provided for every building and premises; except, where one building stands at the rear of another on an interior lot and no water main is available or can be constructed to the rear building through an adjoining alley, court, yard, or driveway, the front building service water supply pipe may be extended to the rear building and the whole considered as one service; but the Township does not assume any obligation or responsibility for damage caused by, or resulting from, any such single connection aforementioned. In all cases where water service is intended to supply more than one customer in a building consisting of several customers, a separate building service water supply pipe with a stop valve shall be installed for each customer. Such stop valve shall be suitably protected and marked to be conspicuous. In no case shall one building service water supply pipe supply more than one lot, unless such lots are occupied by a single building that is used for a single industry or enterprise.
- F. The Superintendent, or his representatives, shall have power and authority at all reasonable hours to enter upon any premises where water is furnished from the Township water supply system, for the purpose of meter reading or the inspection and testing of all pipes and fixtures connected with, or proposed to be connected with, said water supply system. The Superintendent or his representative shall have authority to require any defective pipes or fixtures to be repaired, removed, or replaced, where the same are not in compliance with the provisions of the regulations pertaining to the water supply system. The refusal or neglect of any person to make repairs as required by this ordinance shall be deemed a violation thereof.

- G. The permit holder for the installation of water mains or building service water supply pipe shall notify the Superintendent or a designated agent, 48 hours prior to when such pipe is ready to be installed.
- H. The Department of Public Works shall install, or cause to be installed, a water meter with an outside removable water meter reading device for all premises. Such meter reading device and water meter shall be installed as part of the water meter charge set forth in the Utility Fees Schedule..
- I. Water meters shall be installed for every building or premises supplied with water by the Township. Any damage to said meter resulting from the failure of the owner, lessee, or occupant to properly protect same shall be assessed against such property owner. No person shall tamper with, or remove, the meter, or interfere with the reading thereof.
- J. The owner or occupant of any building or premises entitled to the use of water from the Township water supply system shall not supply water to any other person except upon written permission of the Superintendent.
- K. The Township Department of Public Works Superintendent may ban or restrict lawn sprinkling or other non-essential use of water whenever the Superintendent shall determine that such utilization of the water supply may endanger the public health, safety and welfare of the residents of the Township. Such ban or restriction may be posted at the Township offices and published in a newspaper of general circulation within the Township.
- L. The Customer shall provide a heated room for any water meter, or a meter pit constructed to Township Standards.
- M. Meters proposed to be located outside of buildings shall be approved by the Water and Sewer Superintendent or his designated representative.

186.1304 Water connection requirements.

Sec. 86.1304.

- A. *Meter location.* Meters shall be set in a heated room and an accessible location in a manner satisfactory to the Superintendent.
- B. *Access to meters.* The Superintendent shall have the right to shut off the supply of water to any premises where authorized employees are not able to obtain access to the meter. Any authorized Township employee shall at all reasonable hours, have the right to enter the premises where such meters are installed for the purpose of reading, testing, removing, or inspecting the meter or for the purpose of inspecting any pipe or fixture connected to the Township Water System, and no person shall hinder, obstruct, or interfere with such employee in the lawful discharge of his duties in relation thereto.
- C. *Responsibility for meter.* The owner of the premises upon which a meter is installed, is hereby made responsible for the same. If by any manner the meter is damaged or stolen such incident must be reported to the Superintendent at once. It shall be the duty of the Township to make all meter repairs and charge same to the property owner.

- D. *Meter failure.* If any meter shall fail to register properly, the Superintendent shall estimate the consumption based on the basis of former consumption and bill accordingly. If the meter fails to operate properly, the Department shall replace the meter at no cost to the property owner.
- E. *Meter testing.* A customer may require that the meter be tested upon payment of the service fee in advance to cover the cost of the test. If the meter is found defective it shall be repaired or an accurate meter installed and the service fee payment refunded.
- F. *Accuracy required.* A meter shall be considered accurate if when tested it registers not to exceed one and a half (1.5%) percent more or one and a half (1.5%) percent less than the actual quantity of water passing through it. If a meter registers in excess of one and a half (1.5%) percent more than the actual quantity of water passing through it, it shall be considered “fast” to that extent. If a meter registers in excess of one and a half (1.5%) percent less than the actual quantity of water passing through it, it shall be considered “slow” to that extent.
- G. *Bill adjustment.* If a meter has been tested at the request of a customer and shall have been determined to register “fast” the Township shall credit the customer with a sum equal to the percent “fast” multiplied by the amount of all bills incurred by said consumer within the three (3) months prior to the test, and if a meter so tested is determined to register “slow” the Township may collect from the customer a sum equal to the percent “slow” multiplies by the amount of all bills incurred by the customer for the prior three (3) months. When the Township on its own initiative makes a test of a water meter, it shall be done without cost to the customer, other than his or her paying the amount due to the Township for water used by him or her as above provided, if a meter is found to be “slow”.
- H. *Injury or obstruction of facilities.* No person shall break, damage, destroy, uncover, deface, obscure, obstruct, or tamper with any structure, appurtenance or equipment which is part of the Township water distribution system.

No person, firm or corporation shall place debris, landscaping, earth or other materials in a manner that will obstruct, obscure, or prevent normal access to or operation of any hydrant, valve, metering facility, Fire Department water connection or any other water system appurtenances. Any person violating this section shall be guilty of a misdemeanor and shall be punishable as provided by law. The Superintendent may order the removal of said materials. The expenses incurred in the removal shall be a debt to the Township from the responsible person, firm or corporation, and shall be collected as any other debt to the Township.

- I. *Backflow prevention.* Every service shall be valved between the premises and the main. Owner shall provide for backflow preventers, pressure reducing valves and other appurtenances as determined necessary by the Superintendent.

186.1305 Cross Connection Control Program.

Sec. 86.1305.

- A. That the Charter Township of Washington is subject to the Water Supply Cross Connection Rules of the Michigan Department of Natural Resources and Environment being R 325.11401 to R 325.11407 of the Michigan Administrative Code.
- B. The Charter Township of Washington's Department of Public Works is the agency responsible for administration and enforcement of this program to protect the Township's public water main system (supply) from cross connections.
- C. That it is the duty of the Charter Township of Washington to cause inspections to be made of the properties served by the public water supply where cross connections with the public water supply is deemed possible. The frequency of inspections and reinspections based on potential health hazards involved shall be established by the Charter Township of Washington and as approved by the Michigan Department of Natural Resources and Environment.
- D. That the representative of the Charter Township of Washington's Department of Public Works shall have the right to enter at any reasonable time any property served by a connection to the public water supply system of the Charter Township of Washington for the purpose of inspecting the piping system or systems thereof for cross connections. On request, the owner, lessees, or occupants of any property so served shall furnish to the inspection agency any pertinent information regarding the piping system or systems on such property. The refusal of such information or refusal of access, when requested, shall be deemed evidence of the presence of cross connection.
- E. That the Charter Township of Washington is hereby authorized and directed to discontinue water service after reasonable notice to any property wherein any connection in violation of this ordinance exists and to take such other precautionary measures deemed necessary to eliminate any danger of contamination of the public water supply system. Water service to such property shall not be restored until the cross connection(s) has been eliminated in compliance with the provisions of this ordinance.
- F. That all testable backflow prevention assemblies shall be tested at the time of installation or relocation and after any repair. Subsequent testing of devices shall be conducted at a time interval specified by the Charter Township of Washington and in accordance with the Michigan Department of Natural Resources and Environment's requirements.
- G. That the potable water supply made available on the properties served by the public water supply shall be protected from possible contamination as specified by this ordinance and by the Charter Township of Washington plumbing code. Any water outlet which could be used for potable or domestic purposes and which is not supplied by the potable system must be clearly labeled in a conspicuous manner: "WATER UNSAFE FOR DRINKING."

186.1400 WASTEWATER DISPOSAL FACILITIES

186.1401 Wastewater collection and disposal system.

Sec. 86.1401.

- A. All developments shall be serviced by a wastewater collection and disposal systems acceptable to the Township. A site plan or a preliminary subdivision plan submitted to the Township shall be accompanied by data describing the type of wastewater collection and disposal system that is to be provided for the development and written approval for the use of same from the Township and the Macomb County Health Department. The Developer shall transmit said statement to the Township with his request for Township Approval.
- B. For all other developments the Developer shall provide sanitary sewers to service each proposed building site and shall connect same to a public wastewater disposal system acceptable to the Township and the Macomb County Health Department. The sanitary sewer shall also be subject to approval from the Department of Natural Resources and Environment and the Detroit Water and Sewerage Department.
- C. All wastewater collection and disposal systems shall comply with Appendix A: Engineering Design Standards.

186.1402 Use of public sewers – When required.

Sec. 86.1402.

- A. No person shall place, deposit or cause to be deposited any human or animal excrement or garbage upon property within the Township, except in the pursuit of a normally accepted farming, gardening or sanitary landfill activity.
- B. It shall be unlawful to discharge to any natural outlet within the Township.
- C. All sanitary sewers and wastewater disposal systems that are intended to be operated as public facilities shall be conveyed to the Township for operation and maintenance.
- D. Except as hereinafter provided, it shall be unlawful to construct or maintain any privy, privy vault, septic tank, cesspool, or other facility intended or used for the disposal of wastewater.
- E. The Township Board may defer partial or total payment of the Wastewater System Benefit Fee and Sewer Main Benefit Fee established in the Utility Fees Schedule and any other charges imposed by said Township Board for the availability of a sewer line to serve the property and for the actual connection of the property owner to that line, including permit fees and inspection fees or may allow installment payment of such fees not to exceed five (5) years at seven (7) percent interest per annum, when it shall determine that a strict application of the provision of Act 288, Michigan Public Acts of 1972, as amended, and the preceding section of the within Ordinance requiring connection to the Township sanitary sewage system will result in a hardship on the owner of a structure

required to connect thereto. As a condition to the granting of such deferred, partial or installment payment the Township Board may require mortgage security on the real property of the applicant payable on or before death, or, in any event, on the sale or transfer of the property. All necessary costs incurred for title examination and recording fees shall be borne by the applicant.

- F. For purposes of this section, the Township Board may find that a “hardship” exists when it shall determine that the payment of the Wastewater System Benefit Fee, Sewer Main Benefit Fee or any other applicable fee as defined in subsection “D” above, by the owner of a structure required to comply with the provisions of the statute and preceding sections of this Ordinance will result in severe and extreme financial hardship upon the owner and/or the owner is unable to comply therewith due to financial reasons. Such determination shall be predicated upon financial information furnished by an applicant for hardship relief as to (a) the type, nature, amount and source of income for 12 months preceding the date of said application, (b) the type and nature of the Applicant’s employment, if any, and (c) the net financial worth of said applicant determined by a complete disclosure of all assets and liabilities. The Township Board shall prepare and approved an “Application for Mandatory Sewer Connection Hardship Relief,” which application shall require a complete disclosure of the foregoing information and shall be used by all applicants seeking relief pursuant to this section. Such application shall include an authorization for disclosure of financial information which may be utilized by a duly authorized representative of the Township to authenticate the financial information furnished.
- G. All applicants for hardship relief shall be submitted to the Township Assessing Officer. The Township Board may create, by resolution, a Hardship Review Board with power to review all applications for relief submitted pursuant to this section. Said power to review shall include the right to interview all applicants and to conduct such investigations as it deems necessary to authenticate the financial information disclosed. The Hardship Review Board, based upon its findings and study, shall make a recommendation to the Township Board concerning the disposition of each applicant. The Hardship Review Board shall consist of three (3) members, the first of which shall be the Township Assessing Officer and two of which shall be qualified electors and property owners of the Township. All such members of the Hardship Review Board, excepting the Township Assessing Officer, shall be appointed by the Township Supervisor with the approval of the Township Board and shall serve for a term of one (1) year. Members so appointed may be removed by the Township Supervisor for cause, after hearing, with the approval of the Township Board.
- H. It shall be unlawful for any applicant to knowingly submit false or misleading financial information in connection with an application for hardship relief under provisions of this section.

186.1403 Private wastewater disposal facilities.

Sec. 86.1403.

- A. Where a public sanitary sewer is not available under the provisions of this Ordinance, a building service sewer may be connected to a private wastewater disposal system (septic tank and field) complying with the provisions of this Ordinance.
- B. The applicant for any private wastewater disposal system shall be encouraged to locate his Building Service Sewer on the site of his building on which the public sewer (to which he will connect in the future) is likely to be located. In most instances, this will be on the street side of his building for the wastewater building service sewers.
- C. If the proposed development consists of a single family dwelling unit subdivision having lots 98 feet or more in width of a site proposed for only one building, the Developer may use a septic tank and tile field for each lot; provided that the system for each lot receives approval for same from the Macomb County Health Department. The use of septic tanks and tile fields will only be considered if public sanitary sewer is not available.
- D. Private on-site communal treatment facilities will be considered only if public sanitary sewers are not available and these facilities will be subject to approval from the Township, the Macomb County Health Department, and the Department of Natural Resources and Environment .
- E. A building permit shall not become effective until the applicant has obtained a permit for a private wastewater disposal system from the Macomb County Health Department and filed a copy with the Township Building Official. If a Building Sewer is to be installed, for future connection to a sanitary sewer, a permit shall be required in conformance to Section 80.3003
- F. When a public sanitary sewer is available for connection, properties serviced by a private wastewater disposal system shall be required to connect when one of the following occurs: (1) within 90 days after the date of mailing or posting of written notice that a health hazard exists due to the failure of an existing private sewage disposal system due to soil conditions or other reasons; (2) where new and/or additional tile fields are necessary in a septic system owing to construction of new structures or additions of existing structures to be determined by the Macomb County Health Department and/or the Water and Sewer Superintendent; (3) where an existing private system fails or needs to be repaired or expanded to the extent of 50 percent or more of its area; and/or (4) where any addition or alteration to an existing nonresidential structure is proposed, whether or not new and/or additional tile fields are necessary. A direct connection shall be made to the public sewer as hereinbefore set forth; and any septic tanks and similar private wastewater disposal facilities shall be cleaned of sludge and filled with suitable material. In the meantime the owner shall operate and maintain the private wastewater disposal facilities in a sanitary manner at all times, at no expense to the Township.
- G. The type, capacities, location, and layout of a private wastewater disposal system shall comply with all requirements of the Township, the Macomb County Health

Department, and/or the State of Michigan. No permit shall be issued for any private wastewater disposal system employing subsurface soil absorption facilities where the area of the lot is less than twelve thousand square feet (1115 square meters). No septic tank or cesspool outlet shall be permitted to discharge directly or indirectly to any natural outlet.

- H. Private community septic fields or private sewer systems, servicing more than one premise will only be considered where sanitary sewer is not available. All private community septic fields and/or private sewer systems will be subject to the approval of the Water and Sewer Superintendent and the Township Engineer.

186.1404 Building Service Sewers (wastewater); and connections to, and/or extensions of, sewer.

Sec. 86.1404.

- A. No person shall uncover, make any connections with or opening into, use, alter, or disturb any sewer or appurtenances thereof, without first obtaining a written permit from the Superintendent.
- B. There shall be three (3) classes of sewer construction permits: a Class 1 Permit – a Permit for a Residential and/or Commercial Building Service Sewer (wastewater and/or drainagewater); a Class 2 Permit – a Permit to Construct Sewers that serve establishments producing Industrial Wastes; and a Class 3 Permit – a Permit to Construct Connections to, and/or Extensions of Sewers. Any proposed construction of sanitary sewers for a Mobile Home Park shall be applied for under a Class 3 Permit.

An Application for any of the above Permits shall be supplemented by any plans, specifications, and/or other information considered pertinent by the Superintendent. All plans shall meet all requirements set forth in Appendix A: Engineering Design Standards.

An Applicant for a Class 1 Permit shall pay a construction inspection deposit as set forth in the Utility Fees Schedule.

An Applicant for a Class 2 Permit or a Class 3 Permit shall make such Application in accordance with Section 80.04, entitled “PROCEDURE FOR PROCUREMENT OF A PERMIT FOR CONSTRUCTION OF SITE IMPROVEMENTS AND/OR PUBLIC UTILITIES”, of this Ordinance.

The Contractor or Homeowner shall procure insurance and maintain it during construction (until final written approval), with the Township as co-insured, covering the items listed below.

- A. *Comprehensive General Liability Insurance.* The Applicant shall provide this insurance to protect from claims for damages because

[of] bodily injury, sickness or disease or death of any person other than the Applicant's employees, including claims insured by personal injury liability coverage and from claims for injury or destruction of tangible property, including loss of use resulting therefrom – any and all of which may arise out of or resulting from the Applicant's operations, whether such operations be by himself or by any subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be legally liable. Such insurance shall include coverage for:

- 1) Operation and Premises
- 2) Independent Contractor Protective Liability
- 3) Completed Operation—Products Liability
- 4) Contractual Liability
- 5) Explosion, Collapse or Underground Damage

The limits of liability for property damage shall be \$100,000.00 per occurrence and \$500,000.00 aggregate limit individually each for operations, Independent Contractor's Protective, and Contractual, and \$500,000.00 aggregate limit for completed Operation-Products property damage.

- B. *Owner's Protective Public Liability Insurance.* Applicant shall provide in the name of the Township to protect them against claims for damages because of bodily injury or death, for a property damage caused by the Applicant or his subcontractor, including coverage for cost of defense for any such claims. The limits of liability for property injury including death shall be \$1,000,000.00 per occurrence. The limits of liability for a property damage shall be \$250,000.00 per occurrence and \$500,000.00 aggregate limits.

The Owner's Protective Public Liability Insurance Policy shall include, as additional named insured, the Engineer and his consultants, agents and employees, and all public corporations in whose jurisdiction the work is located.

- C. *Comprehensive Motor Vehicle Liability Insurance* (Applicable to contractors only). The Contractor shall provide this insurance in an amount of not less than \$250,000.00 each person and \$500,000.00 per occurrence for bodily injury, including accidental death, and \$200,000.00 for property damage for each occurrence. The policy shall include coverage for owned, non-owned and hired motor vehicles.

D. *Workmens Compensation Insurance* (Applicable to Contractors Only).

E. A \$5,000.00 *Surety Bond*.

Construction.

A *Contractor.* Work shall be performed by one (1) of the following trades for which the Contractor has been licensed by the State of Michigan Department of Licensing and Regulation: 1) Master Plumber; 2) Drain Layer Contractor (Class A or B); 3) Residential Builder; 4) Maintenance and Alteration Contractor (Trade Code D or L).

In addition, the Contractor shall be registered with the Township.

B *Homeowners.*

- 1) Prior to the issuance of a Homeowner's Permit, the Homeowners should have the necessary general knowledge to construct the building service connection in accordance with the Township ordinances, codes and have a reasonable working knowledge to construct the building service connection.
- 2) The Homeowner shall pay all permit fees, inspection charges, furnish the necessary insurance documentation and shall furnish a \$5,000.00 security bond or shall post a \$500.00 cash deposit.
- 3) The Homeowner shall sign an affidavit indicating that they are performing the work to be performed under the Homeowner's Permit.
- 4) Homeowner shall obtain and abide by the Township installation requirements and standards.

C *Construction within road rights-of-way.* The Contractor or Homeowner shall obtain the necessary permits from the respective governmental agency when work is performed within road rights-of-way.

D *Soil Erosion and Sedimentation Control Permit.* The Contractor or Homeowner shall obtain the necessary Soil Erosion Permit from the Macomb County, when required.

- E *Cleaning and repairing.* If, as a result of construction, blockage or damages occur necessitating action, the Water and Sewer Superintendent may take whatever emergency action is required to protect the general health, safety, and welfare. All costs incurred by the Township shall be reimbursed by the Applicant. If payment is not made, it shall become a lien on the Applicant's property and shall be collected as taxes.

- C. A separate and independent building service sewer shall be provided for every building or premises; except, where one building stands at the rear of another on an interior lot and no sewer is available or can be constructed to the rear of the building through an adjoining alley, court, yard, or driveway, the front building service sewer may be extended to the rear building and the whole considered as one building sewer; but the Township does not assume any obligation or responsibility for damage caused by, or resulting from, any such single connection aforementioned. Sanitary sewage and industrial sewage shall not be combined in a single building service sewer, but shall require separate building service sewers.
- D. No person shall make connection of roof downspouts, foundation drains, areaway drains, or other sources of stormwater runoff or groundwater to a building sewer service sewer or building drain which in turn is connected directly or indirectly to a public sanitary sewer. Foundation drain groundwater shall be directed to a stormwater drain.
- E. The permit holder for Construction of Sewers (drainagewater and/or wastewater) shall notify the Superintendent or his designated representative 2 business days prior to when the sewers are ready to be installed.
- F. All sanitary sewer to be connected to the Township sewer system shall be made gastight and watertight. As acceptable evidence of this condition, an exfiltration test or an infiltration test shall be performed as described hereinafter.

If the infiltration or exfiltration under test conditions is less than 200 gallons per inch of diameter per mile of pipe for 24 hours, the sewer will be considered water tight. The Township shall have the right to isolate any section of sewer (down to 300 feet in length) to apply the above standard. The test conditions for exfiltration or infiltration are as follows:

1. *For exfiltration:*
 - a. Fill the section of sewer to be tested until the level of water in the manholes is a minimum of seven (7) feet above the ground water table outside of the pipe and maintain this level by the addition of water for an additional two-hour period.

- b. Begin the test period (a subsequent two-hour period); add water as necessary every half hour (4 times during the test period) and record (as the exfiltration) the total amount of water added that was necessary to maintain the water level in the test manhole.
2. *For infiltration* (to be used only if the existing water table is at least seven feet above the average centerline elevation of the pipe section to be tested):
- a. For overall projects, at all connections to an existing sewer or extensions thereto a watertight bulkhead with a capped 1 inch diameter pipe shall be provided for purposes of measuring infiltration. A temporary 12 inch sump shall also be provided in the first manhole above the connection and filled in after successful completion of the infiltration test.
 - b. Perform the test for a specific time period and record the total amount of water collected at the test manhole during the period and calculate the infiltration.

In addition to exfiltration or infiltration tests, all sanitary sewers 10 inches and larger in diameter shall be internally inspected after installation, by means of television cameras (as set forth in the Standard Construction Specification and Details Standards adopted by the Township Board) to determine if any defects exist. Air tests shall also be performed on individual runs between manholes, for all size sanitary sewers. If any defects are discovered by TV or air tests, they shall be repaired before the sewer is accepted for use and maintenance by the Township.

186.1405 Use of public sewers.

Sec. 86.1405.

- A. No person, firm or corporation shall discharge, or cause to be discharged, any unpolluted waters such as stormwater, groundwater, roof runoff, subsurface water, or cooling water into any sanitary sewer of the Township.
- B. Drainagewater and/or other unpolluted drainage shall be discharged to such sewers as are specifically designated as storm sewers or to a natural watercourse approved by the Township and other appropriate regulatory agencies. Unpolluted industrial cooling water or process waters may be discharged, on approval of the Township, to a storm sewer or natural watercourse.
- C. No person shall discharge, or cause to be discharged, any of the following described waters or wastes to any public sewers:
 - 1. Any gasoline, benzene, naphtha, fuel oil, or other flammable or explosive liquid, solid, or gas.
 - 2. Any waters containing toxic or poisonous solids, liquids, or gases in sufficient quantity, either singly or by interaction with other wastes, to

injure or interfere with any waste treatment process, constitutes a hazard to humans or animals, create a public nuisance, or create any hazard in the receiving waters of the wastewater treatment plant.

3. Any waters or wastes having a pH lower than 5.5, or higher than 8.5, or having any other corrosive property capable of causing damage or hazard to structures, equipment, and personnel of the Wastewater System.
4. Solid or viscous substances (such as, but not limited to, ashes, bones, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, un-ground garbage, whole blood, paunch manure, hair and fleshings, entrails and paper dishes, cups, milk containers, etc., either whole or ground garbage grinders) in quantities or of such size capable of causing obstruction to the flow in sewers, or other interference with the proper operation of the wastewater facilities.
5. Any wastewater which is in excess of the limitations imposed under the contract between the Township and the County of Macomb, which includes by reference the limitations imposed by the Detroit Water and Sewerage Department.

- D. The following described substances, materials, waters, or waste shall be limited in discharges to the public sanitary sewer to concentrations or quantities which will not harm either the sewers, wastewater treatment process or equipment, will not have an adverse effect on the receiving stream, or will not otherwise endanger lives, limb, public property, or constitutes a nuisance. The limitations or restrictions on materials or characteristics of waste or wastewaters discharges to the sanitary sewer are found in the Industrial Pretreatment Requirements of this Ordinance.

Any waste will be considered deleterious (and prohibited) that may cause damaging effects, as stated above, or does not conform to the limitations stated under specific chemical pollutants.

Compatible wastes which are discharged by industry in concentrations greatly in excess of domestic sewage will be sampled, analyzed, and treated at costs to be borne by the permittee. No costs shall be assessed unless the concentrations are greater than those found in the Industrial Pretreatment Requirements of this Ordinance.

- E. If any waters or wastes are discharged, or are proposed to be discharged, to the public sanitary sewers, which waters contain the substances or possess the characteristics enumerated hereinbefore and which in the judgment of the Township may have a deleterious effect upon the wastewater facilities, processes, equipment, or receiving waters, or which otherwise create a hazard to life or constitute a public nuisance, the Superintendent may:
1. Reject the wastes,
 2. Require pretreatment to an acceptable condition for discharge to the public sanitary sewers,

3. Require control over the quantities and rates of discharge, and/or
 4. Require an additional payment to cover the added cost (of handling and treating the wastes) not covered by existing wastewater disposal service charges. If the Superintendent permits pretreatment or equalization of waste flows, the design and installation of the plants and equipment shall be subject to the review and approval of the Township.
- F. Grease, oil, and sand interceptors shall be provided for all food preparation businesses, including restaurants, hotels, hospitals, catering businesses, banquet halls, fast food restaurants, or any other commercial business that prepares or serves food or, in the opinion of the Superintendent, they are necessary for the proper handling of liquid wastes containing floatable grease in excessive amounts, or any flammable wastes, sand, or other harmful ingredients; except that such interceptors shall not be required for private living quarters or dwelling units. All interceptors shall be of a type and capacity approved by the Superintendent and shall be located as to be readily and easily accessible for cleaning and inspection. In the maintaining of these interceptors, the owner shall be responsible for the proper removal and disposal, by appropriate means, of the captured material and shall maintain records (on the premises) of the dates and means of disposal, which are subject to review by the Superintendent. Any removal and hauling of the collected materials must be performed by currently licensed waste disposal firms.
- G. Where pretreatment or flow-equalizing facilities are provided or required for any waters or wastes, in accordance with Federal Pretreatment Standards 40 CFR 403, they shall be maintained continuously in satisfactory and effective operation by the Owner at his expense.
- H. When required by the Superintendent, the owner of any property serviced by a sewer carrying industrial wastes shall install a suitable structure together with such necessary meters and other appurtenances in the sewer to facilitate observations, sampling, and measurement of the wastes. Such structure, when required, shall be accessibly and safely located and shall be constructed in accordance with plans approved by the Township. The structure shall be installed by the owner at his expense and shall be maintained by him so as to be safe and accessible at all times.
- I. All measurements, tests, and analyses of the characteristics of waters and wastes to which reference is made in this ordinance shall be determined in accordance with the latest edition of "Standard Methods for the Examination of Water and Wastewater", published by the American Public Health Association. Sampling methods, location, times, durations, and frequencies are to be determined on an individual basis subject to approval by the Township.
- J. Damages to public sewers, appurtenances, pumping stations, the wastewater plant or treatment processes arising from harmful wastewaters shall be assessed to the permittee. Such assessments shall constitute a lien on the property. The Township Board reserves the right to discontinue service to any person, firm, or corporation for gross and repeated violations of this Ordinance, after written notice has been given and a public hearing has been called by the Board at which the person, firm, or corporation has been given an opportunity to show cause why his right to service should not be discontinued.

- K. Should any industrial user (as defined in this Ordinance and Federal Regulation 40 CFR 35.905) commence discharge to the treatment works during the 30 years industrial cost recovery period, then an Industrial Cost Recovery System shall be developed and implemented pursuant to this Ordinance and Federal Regulation 40 CFR 35.928.

186.1406 Access to premises.

Sec. 86.1406.

- A. The Superintendent or any of his agents bearing proper credentials and identification shall have the power and authority at all reasonable hours to enter upon any premises or easement for the purpose of inspection, observation, measurement, sampling and/or testing pertinent to the discharge to the sewer system in accordance with the provisions of this ordinance.
- B. While performing the necessary work on private properties the Superintendent, or the Superintendent's representative, shall observe all safety rules applicable to the premises and the owner shall be held harmless for injury, or death to the Superintendent or his representatives, and the Township shall indemnify the owner against loss or damage to his property by Township employees and against liability claims and demands for personal injury or property damage asserted against the owner and growing out of the gauging and sampling operation, except as such may be caused by negligence or failure of the owner to maintain safe conditions.

186.1500 INDUSTRIAL PRETREATMENT REQUIREMENTS

Sec. 86.1501.

The City of Detroit, through the Detroit Water and Sewerage Department, as the State approved Control Authority, is authorized to administer and enforce the provisions of 186.1500 of this Ordinance on behalf of the Charter Township of Washington. The Charter Township of Washington has executed and hereby ratifies its delegation agreement with the City of Detroit through the Detroit Water and Sewerage Department, which sets forth the terms and conditions of such delegated authority, consistent with this Ordinance, and shall allow the Detroit Water and Sewerage Department to perform the specific responsibilities of Control Authority pursuant to State and Federal law.

The purpose of this division is the protection of the environment, and of public health and safety by abating and preventing pollution through the regulation and control of the quantity and quality of wastes admitted to or discharged into the wastewater collection and treatment system under the jurisdiction of the Charter Township of Washington and enabling the Township to comply with all applicable state and federal laws required by the Federal Water Pollution Control Act, being 33 U.S.C. § 1251, et seq), and the General Pretreatment Regulations, being 40 C.F.R. part 403.

The objectives of this division are:

- A. To prevent the introduction of pollutants into the wastewater system which will interfere with the operation of the system or contaminate the resulting sludge, or will pose a hazard to the health or welfare of the People or of employees of the City of Detroit Water and Sewerage department;
- B. To prevent the introduction of pollutants into the wastewater system which will pass inadequately treated through the system into receiving waters, the atmosphere or the environment, or otherwise be incompatible with the system;
- C. To improve the opportunity to recycle or reclaim wastewater or sludge from the system in an economical and advantageous manner; and
- D. To provide for the recovery of the costs from users of the wastewater collection and treatment system sufficient to administer regulatory activities and meet the costs of the operation, maintenance, improvement or replacement of the system.
- E. This division provides for the regulation of contributors to the Detroit and the Charter Township of Washington wastewater collection and treatment system through the issuance of wastewater discharge permits to certain users and through the enforcement of general requirements for all users, authorizes monitoring and enforcement, and authorizes fees and penalties.

By virtue of the obligations and authority placed upon the Charter Township of Washington by the Federal Water Pollution Control Act, also known as the Clean Water Act, as amended, being (33 U.S.C. § 1251 et seq; the 1963 Constitution of the State of Michigan; Public Act 245 of 1929, as amended, being M.C.L. 323.1 et seq; M.S.A. 3.521 et seq; the 1997 Charter; the National Pollutant Discharge Elimination System (NPDES) permit for the City of Detroit Publicly Owned Treatment Works (POTW); the Consent Judgment in U.S. EPA v. City of Detroit et al, Federal District Court for the Eastern District of Michigan Case No.77-1100, as amended; and existing or future contracts between the Board of Water Commissioners and suburban communities or other governmental or private entities; or by virtue of common law usage of the system, this division shall apply to every user contributing or causing to be contributed, or discharging, pollutants or wastewater into the wastewater collection and treatment system of the City of Detroit POTW.

Definitions for 186.1500 Industrial Pretreatment Requirements of this Ordinance are found below, all other definitions are found in Section 186.0102 of this Ordinance:

“*Act or the act*” means the Federal Water Pollution Control Act, also known as the Clean Water Act, as amended, being 33 U.S.C. § 1251 et seq.

“*Board*” means the Board of Water Commissioners of the City of Detroit.

“*Department*” means the City of Detroit Water and Sewerage Department, and authorized employees of the Department.

“*Director*” means the Director of the Detroit Water and Sewerage Department, or the Director’s designee.

For purposes of this division, the following acronyms shall have the meanings designated by this section:

- (1) **BMR** - Baseline monitoring report
- (2) **BOD**- Biochemical Oxygen Demand
- (3) **C.F.R.** - Code of Federal Regulations
- (4) **EPA** - Environmental Protection Agency
- (5) **FOG** - Fats, Oil or Grease
- (6) **l** - liter
- (7) **MDEQ** – MI. Department of Environment Quality
- (8) **mg** - milligrams
- (9) **mg/l** - milligrams per liter
- (10) **NPDES** - National Pollutant Discharge Elimination System
- (11) **POTW** - Publicly Owned Treatment Works
- (12) **RCRA** -Resource Conservation and Recovery Act, being 42 U.S.C. § 6901 et seq
- (13) **SIC** - Standard Industrial Classification
- (14) **SWDA** - Solid Waste Disposal Act, being 42 U.S.C. § 6901 et seq.
- (15) **TSS** - Total Suspended Solids
- (16) **U.S.C.** - United States Code

186.1502. Discharge prohibitions.
Sec. 86.1502.

General pollutant prohibitions. No user shall discharge or cause to be discharged into the POTW, directly or indirectly, any pollutant or wastewater which will cause interference or pass through. These general discharge prohibitions shall apply to all users of the POTW whether or not the user is subject to national categorical pretreatment standards or to any other federal, State, or local pretreatment standards or requirements. In addition, it shall be unlawful for a user to discharge into the POTW:

- A. Any liquid, solid or gas, which by reason of its nature or quantity, is sufficient either alone or by interaction with other substances to create a fire or explosion hazard or to be injurious in any other way to persons, to the POTW, or to the operations of the POTW. Pollutants, which create a fire or explosion hazard in a POTW, include, but are not limited to, wastestreams with a closed cup flash point of less than 140°F or 60°C using the test methods specified in 40 C.F.R. § 261.21; or
- B. Any solid or viscous substance in concentrations or quantities, which are sufficient to cause obstruction to the flow in a sewer or other encumbrances to the operation of the POTW, including, but not limited to, grease, animal guts or tissues, bones, hair, hides or fleshing, entrails, whole blood, feathers, ashes, cinders, sand, cement, spent lime, stone or marble dust, metal, glass, straw, shavings, grass clippings, rags, strings, fibers, spent grains, spent hops, wastepaper, wood, plastic, tar, asphalt residues, residues from refining or processing of fuel or lubrication oil, mud or glass grinding or polishing wastes, or tumbling and deburring stones; or
- C. Any wastewater having a pH of less than 5.0 units or greater than 11.5 units; or
- D. Any wastewater containing petroleum oil, non-biodegradable cutting oil, products of mineral oil origin, or toxic pollutants in sufficient concentration or quantity either

- singly or by interaction with other pollutants to cause interference, or pass through, or constitute a hazard to humans or animals; or
- E. Any liquid, gas, solid or form of energy, which either singly or by interaction with other waste is sufficient to create toxic gas, vapor, or fume within the POTW in quantities that may cause acute worker health and safety problems, or may cause a public nuisance or hazard to life, or are sufficient to prevent entry into the sewers for their maintenance and repair; or
 - F. Any substance which is sufficient to cause the POTW's effluent or any other product of the POTW, such as residue, sludge, or scum to be unsuitable for reclamation processing where the POTW is pursuing a reuse and reclamation program. In no case shall a substance discharged to the POTW cause the POTW to be in noncompliance with sludge use or disposal criteria guidelines or regulations developed under 33 U.S.C. § 1345, with any criteria, guidelines, or developed and promulgated regulations affecting sludge use or disposal developed pursuant to the Solid Waste Disposal Act, the Federal Clean Air Act, the Federal Toxic Substances Control Act, or with State criteria applicable to the sludge management method being used; or
 - G. Any substance which will cause the POTW to violate either the Consent Judgment in U.S. EPA v. City of Detroit et al., Federal District Court for the Eastern District of Michigan Case No. 77-1100, or the City of Detroit's National Pollutant Discharge Elimination System permit; or
 - H. Any discharge having a color uncharacteristic of the wastewater being discharged; or
 - I. Any wastewater having a temperature which will inhibit biological activity in the POTW treatment plant resulting in interference, but in no case wastewater with a temperature at the introduction into a public sewer which exceeds 150°F or which will cause the influent at the wastewater treatment plant to rise above 104°F (40°C); or
 - J. Any pollutant discharge which constitutes a slug; or
 - K. Any wastewater containing any radioactive wastes or isotopes of such half-life or concentration as may exceed limits established in compliance with applicable federal or State regulations; or
 - L. Any floating fats, oil or grease which are sufficient to cause interference with or pass through the POTW; or
 - M. Any solid materials having a specific gravity greater than 1.2 or a cross section dimension of one-half (1/2) inch or greater which are sufficient to cause interference with the POTW.

186.1503. Specific pollutant prohibitions.

Sec. 86.1503.

No user shall discharge wastewater containing in excess of the following limitations:

- A. Compatible pollutants. See Section 86.1514
- B. Non-compatible pollutants. No user shall discharge wastewater containing in excess of (in mg/l):

Arsenic (As)	1.0
Cadmium (Cd).....	See Section 86.1514
Chromium (Cr).....	25.0

Copper (Cu)	2.5
Cyanide (CN) (Available).....	1.0
Iron (Fe).....	1000.0
Lead (Pb)	1.0
Nickel (Ni).....	5.0
Silver (Ag)	1.0
Zinc (Zn).....	7.3
Total Phenolic Compounds:.....	1.0

or See 86.1513.

All limitations are based on samples collected over an operating period representative of an industrial user's discharge, and in accordance with 40 C.F.R. part 136.

- C. The limitation for Total PCB is Non-detect. Total PCB shall not be discharged at detectable levels, based upon U.S. EPA Method 608, and the quantification level shall not exceed 0.2 ug/m³, unless a higher level is appropriate because of demonstrated sample matrix interference. Where one (1) or more samples indicate detectable levels of Total PCB, the user shall be required to demonstrate compliance. For purposes of this section, this demonstration may be made using analytical data showing that the Total PCB concentration is below the detection level, or submission of a BMP.
- D. The limitation of Mercury (Hg) is Non-detect. Mercury (Hg) shall not be discharged at detectable levels, based upon U.S. EPA Method 245.1, and the quantification level shall not exceed 0.2 ug/m³, unless a higher level is appropriate because of demonstrated sample matrix interference. Where one (1) or more samples indicate detectable levels of Mercury, the user shall be required to demonstrate compliance. For the purposes of this section, this demonstration may be made using analytical data showing that the mercury concentration is below the detection level, or submission of a BMP.

All limitations are based on samples collected over an operating period representative of an industrial user's discharge, and in accordance 40 CFR Part 136.

- A. Compliance Period. Within thirty (30) days of the effective date of this ordinance, the Department shall notify all industrial users operating under an effective wastewater discharge permit of the requirement to submit a compliance report within one hundred eighty (180) days after the effective date of this ordinance. The Compliance Report shall demonstrate the user's compliance or non-compliance with these limitations, and, in the event of non-compliance, include the submission of a plan and schedule for achieving compliance with the stated limitation. In no event shall a compliance schedule exceed (18) month from the effective date of this ordinance. An Industrial User who does not demonstrate compliance may petition the Department for a second extension as part of an Administrative Consent Order. The Department shall include appropriate monitoring, reporting, and penalties into an Administrative Consent Order that relates to a second extension, and shall enter into such an agreement only upon a good-faith showing by the industrial user of the actions taken to achieve compliance with this provision.

- B. National categorical pretreatment standards. All users shall comply with the applicable National Categorical Pretreatment Standards and requirements promulgated pursuant to the act as set forth in 40 C.F.R. Subchapter N, Effluent Guidelines and Standards, which are hereby incorporated by reference and with all other applicable standards and requirements, provided, that where a more stringent standard or requirement is applicable pursuant to State law or regulation, or to this division, then the more stringent standard or requirement shall be controlling. Affected dischargers shall comply with applicable reporting requirements under 40 C.F.R. part 403 and as established by the Department. The National Categorical Pretreatment Standards which have been promulgated as of the effective date of this section are delineated in Section 86.1512.

Intake water adjustment. Industrial users seeking adjustment of National Categorical Pretreatment Standards to reflect the presence of pollutants in their intake water must comply with the requirements of 40 C.F.R. § 403.15. Upon notification of approval by the Department, the adjustment shall be applied by modifying the permit accordingly. Intake water adjustments are not effective until incorporated into an industrial user's permit.

Modification of national categorical pretreatment standards. The Department may apply to the U.S. Environmental Protection Agency, or to the Michigan Department of Environmental Quality, whichever is appropriate, for authorization to grant removal credits in accordance with the requirements and procedures in 40 C.F.R. § 403.7. Such authorization may be granted only when the POTW treatment plant can achieve consistent removal for each pollutant for which a removal credit is being sought, provided, that any limitation of such pollutant(s) in the NPDES permit neither are being exceeded nor pose the prospect of being exceeded as a result of the removal credit being granted. Where such authorization is given to the Department, any industrial user desiring to obtain such credit shall make an application to the Department, consistent with the provisions of 40 C.F.R. § 403.7 and of this division. Any credits which may be granted under this section may be subject to modification or revocation as specified in 40 C.F.R. § 403.7, or as determined by the Department. A requisite to the granting of any removal credit may be that the industrial user pay a surcharge based upon the amounts of such pollutants removed by the POTW, such surcharge being based upon fees or rates which the Board may establish and, when appropriate, revise from time to time. Permits shall reflect, or be modified to reflect, any credit granted pursuant to this section.

New sources. Industrial users who meet the new sources criteria shall install, maintain in operating condition, and 'start-up' all pollution control equipment required to meet applicable pretreatment standards before beginning to discharge. Within the shortest feasible time and not to exceed ninety (90) days, new sources must meet all applicable pretreatment standards.

Concentration and mass limits. When limits in a categorical pretreatment standard are expressed only in terms of mass of pollutant per unit of production, the Department may convert the limits to equivalent limitations expressed either as mass of pollutant discharged per day or effluent concentration for purposes of calculating effluent limitations applicable to individual industrial users. Equivalent limitations shall be calculated in accordance with Sections 40 C.F.R. §

403.6(c)(3) and/or 40 C.F.R. § 403.6(c)(4) and shall be deemed pretreatment standards for the purposes of 33 U.S.C. §1317(d) and of this division. Industrial users will be required to comply with the equivalent limitations in lieu of the promulgated categorical standards from which the equivalent limitations were derived.

- A. Reporting requirements for industrial users upon effective date of categorical pretreatment standards-baseline report. Within one hundred eighty (180) days after the effective date of a categorical pretreatment standard, or one hundred eighty (180) days after the final administrative decision made upon a category determination submission under Section 40 C.F.R. § 403.6(a)(4), whichever is later, existing industrial users subject to such categorical pretreatment standards and currently discharging into or scheduled to discharge into the Detroit POTW shall submit to the Department a report containing the information listed in 40 C.F.R. § 403.12(b)(1-7). Where reports containing this information have already been submitted to the Director or regional administrator in compliance with the requirement of 40 C.F.R. § 128.140(b), the industrial user will not be required to resubmit this information. At least ninety (90) days before commencement of any discharge, each new source and any existing sources that become industrial users after the promulgation of an applicable categorical pretreatment standard shall submit to the Department a report which contains the information listed in 40 C.F.R. § 403.12(b)(1-5). In such report, new sources shall include information concerning the method of pretreatment the source intends to use to meet applicable pretreatment standards. New sources shall provide estimates of the information requested in 40 C.F.R. § 403.12(b)(4) and
- B. Dilution prohibited. Except where expressly authorized to do so by an applicable pretreatment standard or requirement, no user shall increase the use of process water, or in any way dilute or attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with the limitations contained in the national categorical pretreatment standards, or in any other pollutant specific limitation or requirement imposed by the Charter Township of Washington, the City of Detroit or by the State of Michigan.

Hauled in wastewater. Any waste material or wastewater which is hauled into or within the service region for discharge to the POTW is subject to the requirements of this division including, but not limited to, permits, inspection, monitoring and enforcement. Unloading liquid or solid waste from hauling vehicles, directly or indirectly, into the POTW, with or without the benefit of pretreatment, is prohibited unless the person proposing to unload such waste has applied for and received a permit from the department for unloading such waste in accordance with the Board's rules pertaining thereto. The discharger shall be subject to applicable terms and conditions, surcharges, fees or rates as established by the Board. Hauled in wastewater shall only be discharged at points designated by the POTW after authorization or approval issued pursuant to the general permit requirements specified in this Ordinance. The Department may establish specific limitations for sludge from municipally owned or operated POTW treatment plants which are different than the specific limitations in this division.

Centralized waste treatment. It is unlawful for a centralized waste treatment (CWT) facility to discharge any industrial waste or wastewater into the POTW without a wastewater discharge

permit from the Department. Any authorization granted, or permit issued, by the Department to a Centralized Waste Treatment (CWT) facility shall specify the type of wastewater for which treatment is provided, and discharge approval is sought, from the POTW. Unless such industrial waste or wastewater is determined by the Department to require further authorization, a centralized waste treatment (CWT) facility that has submitted an application to, and received previous approval from, the Department to discharge wastewater is not required to obtain further authorization from the Department before discharging such wastewater.

An industrial user, that provides centralized waste treatment services and files an application for the treatment and discharge of such types of wastewater to the POTW, shall provide the following minimum information in support thereof:

- A. The general nature, source and process(es) generating the type of wastewater. Any wastewater, which is generated from those processes and is subject to National Categorical Pretreatment Standards as delineated in Section 86.1512, shall be so designated;
- B. The identity of the toxic pollutants known or suspected to be present in the wastewater;
- C. At least one (1) sample report showing the results of an analysis for the EPA priority pollutants for each type of wastewater for which application is made in this section;
- D. A statement, that is certified by a professional engineer, which addresses the treatability and compatibility of the wastewater, received or collected by the facility's treatment process(es);
- E. The identity of the materials and/or pollutants whose transport or treatment are regulated by the EPA, by the State, or by any other governmental agency. Upon request, the Centralized Waste Treatment (CWT) facility shall provide a copy of its permit and/or license to the Department; and
- F. Other information requested by the Department including, but not limited to, information required by this Ordinance, or by rules adopted by the Board.

The discharge from a centralized waste treatment (CWT) facility will be deemed approved for those specific types of wastewater delineated in a permit and, upon issuance of such permit in accordance with the procedures contained in this Ordinance, will be deemed approved for discharge into the POTW. The Centralized Waste Treatment (CWT) facility shall comply with all applicable provisions contained in this Ordinance regarding permits. In furtherance of its obligations as control authority, the Department may include in the permit a requirement to report at selected intervals the information mandated in Subsections (1) through (6) of this section.

All users granted a permit under this section shall maintain records which, at a minimum, identify the source, volume, character, and constituents of the wastewater accepted for treatment and disposal. These records may be reviewed at any time by the Department.

- A. Groundwater discharges. Unless authorization has been granted by the Department, the discharge of any groundwater into the POTW is prohibited.

The Department may authorize the discharge of groundwater resulting from maintenance and related activities of gas, steam, or electrical utilities through the use of general permits. Subject to appropriate reporting requirements, the general permit shall authorize discharge in accordance with the terms of the permit. Utilities shall comply with this provision within one hundred eighty (180) days after its enactment.

If a person, who proposes to discharge groundwater resulting from purge, response activity, or UST projects, has applied for and received a permit from the Department, the Department may authorize the discharge of such wastewater. Permits shall be issued in accordance with the procedures contained in this Ordinance, or in accordance with any rules adopted by the Board.

The Charter Township of Washington *right of revision*. The City of Detroit and the Charter Township of Washington reserve the right to establish rules or regulations adopted by the Board, additional or more stringent limitations or requirements on discharges to the POTW. [These rules and regulations shall be adopted in accordance with the rule-making procedures Section 2-111 of the 1997 Detroit City Charter in the 1997, if any.] Ninety (90) days after adoption by the Board, industrial users shall comply with such rules and regulations.

A. Accidental discharges.

B. Each industrial user, which does not currently have an approved spill prevention plan or slug control plan, shall provide protection from accidental discharge of prohibited materials or other substances regulated by this division, and all significant industrial users shall submit to the Department detailed plans which show facilities and operating procedures to be implemented to provide protection against such accidental discharges. Facilities and measures to prevent and abate accidental discharges shall be implemented, provided, and maintained at the owner's or industrial user's cost or expense. Unless the significant industrial user has an approved spill prevention or slug control plan, all existing significant industrial users shall complete and submit such a plan within sixty (60) days of the effective date of this division [November 19, 1986]. New significant industrial users shall submit such a plan prior to the time they commence discharging.

For purposes of this section, the information provided shall include the approximate average and maximum quantities of such prohibited materials or substances kept on the premises in the form of raw materials, chemicals and/or waste therefrom and the containment capacity for each. Only substances that are in a form which could readily be carried into the POTW and constitute a concentration of five (5) percent or greater in the raw material, chemical solution or waste material, are required to be reported. Volumes of less than fifty-five (55) gallons, or the equivalent thereof, need not be reported unless lesser quantities could cause pass through or cause interference with the POTW.

The industrial user shall promptly notify the Department of any significant changes or modifications to the plan including, but not limited to, a change in the contact person, or substance inventory.

A. At least once every two (2) years, the Department shall evaluate whether a significant industrial user needs a plan to control slug discharges, as defined by 40 C.F.R. § 403.8(f)(2)(v). Unless otherwise provided, all significant users shall complete,

implement, and submit such a plan within thirty (30) days of notification by the Department.

Notification requirements. Unless a different notice is provided by this division or applicable law, within one (1) hour of becoming aware of a discharge into the POTW which exceeds or does not conform with Federal, State or the Charter Township of Washington laws, rules, regulations or permit requirements, or which could cause problems to the POTW, or which has the potential to cause the industrial user to implement its plan prepared in accordance with Subsection (1) of this section, the industrial user shall telephone the Department at its control center and notify the Department of the discharge. The notification shall include the name of the caller, the location and time of discharge, the type of wastewater, the estimated concentration of excessive or prohibited pollutants and estimated volume, and the measures taken, or being taken, to abate the discharge into the POTW. Within five (5) calendar days after the discharge, the industrial user shall submit a detailed written report describing the cause of the discharge and the measures to be taken by the user to prevent similar future occurrences and when required by the department, the industrial user's wastewater discharge permit may be modified to include additional measures to prevent such future occurrences. Such notification shall not relieve the industrial user of any expense, cost of treatment, loss, damages or other liability which may be incurred as a result of damage to the POTW, fish kills, or any other environmental impairment or any other damage to person or property.

Notice to employees. A notice shall be permanently posted on the industrial user's bulletin board, or other prominent place, advising employees whom to contact in the Department in the event of an actual or excessive or prohibited discharge.

Recovery of costs. Any user discharging in violation of any of the provisions of this division, which produces a deposit or obstruction, or causes damage to or impairs the Department's POTW, or causes the Department to violate its NPDES permit, shall be liable to the Department for any expense, loss, damage, penalty or fine incurred by the Department because of said violation or discharge. Prior to assessing such costs, the Department shall notify the user of its determination that the user's discharge was the proximate cause of such damage, obstruction, impairment, or violation of the Township's NPDES permit and the Department's intent to assess such costs to the user. Any such notice shall include written documentation which substantiates the determination of proximate cause and a breakdown of cost estimates. Failure to pay the assessed costs shall constitute a violation of this division. Such charge shall be in addition to, and not in lieu of, any penalties or remedies provided under this division, or this Ordinance, or other statutes and regulations, or at law or in equity.

Hazardous waste notification. All industrial users, who discharge into the Charter Township of Washington's Collection System, shall notify the Department in writing of any discharge of a substance which, if otherwise disposed of, would be a hazardous waste as set forth in 40 C.F.R. Part 261. Such notification must comply with the requirements of 40 C.F.R. § 403.12(p).

Authorized representative. The authorized representative, as defined in this Ordinance, may designate a duly authorized representative of the individual designated in this Ordinance where:

- i. The authorization is made in writing by the individual defined in this Ordinance;
- ii. The authorization specifies either an individual or a position having responsibility for the overall operation of the facility where the industrial discharge originates, such as the position of plant manager, operator of a well or well field superintendent, or a position of equivalent responsibility, or having overall responsibility for environmental matters for the company; and
- iii. The written authorization is submitted to the Department.

Pollution prevention. The Department shall encourage and support industrial users to develop and implement pollution prevention programs that are designed to eliminate or reduce pollutant contributions beyond the levels required by this division. The Department may require an industrial user to implement pollution prevention initiatives or BMP, as part of an enforcement response, or as necessary to comply with its NPDES permit.

186.1504 Fees.

Sec. 86.1504.

The purpose of this section is to provide for the recovery of costs from users of the POTW. The applicable charges or fees established by the Board shall be sufficient to meet the costs of the operation, maintenance, improvement or replacement of the system, or as provided by law or by Board action.

The Board shall adopt charges and fees which shall include, but not be limited to:

- A. Fees for reimbursement of costs of establishing, operating, maintaining, or improving the Department's industrial waste control and pretreatment programs; and
- B. User fees based upon volume of waste and concentration or quantity of specific pollutants in the discharge, and treatment costs including sludge handling and disposal; and
- C. Reasonable fees for reimbursement of costs for hearings including, but not limited to, expenses regarding hearings officers, court reporters, and transcriptions; and
- D. Other fees, which the Board may deem necessary, to carry out the requirements contained herein, or as may be required by law.

186.1505 Wastewater discharge permits.

Sec. 86.1505.

Required. It shall be unlawful for users to discharge into the POTW any wastewater which will cause interference or pass through, or otherwise not comply with the discharge prohibitions of this Ordinance. It shall be unlawful for a significant industrial user to

discharge into the POTW without a wastewater discharge permit from the Detroit Water and Sewerage Department. Unless otherwise expressly authorized by the Department through permit, order, rule or regulation, any discharge must be in accordance with the provisions of this division.

- A. All significant industrial users, which are in existence on the effective date of this division, shall apply for a wastewater discharge permit within thirty (30) days of the effective date of this division. Significant industrial users who are currently operating with a valid wastewater discharge permit are not subject to this provision. These applications are to include all information specified in this Ordinance and, where applicable, any additional information which may be needed to satisfy the federal baseline monitoring report requirements of 40 C.F.R. § 403.12(b).
- B. All new significant users shall apply for a wastewater discharge permit at least ninety (90) days prior to commencement of discharge. The application must include all information specified in this Ordinance and, where applicable, any additional information that may be needed to satisfy the federal BMR requirements of 40 C.F.R. § 403.12(b). Until a permit is issued and finalized by the Department, no discharge shall be made into the POTW.
- C. Any user, who proposes to discharge any wastewater other than sanitary or noncontact cooling water into the POTW, shall request approval from the Department for the discharge(s) at least thirty (30) days prior to the commencement of the discharge.

Permit application or reapplication. The Department may require any user to complete a questionnaire and/or a permit application and to submit the same to the Department for determining whether the industrial user is a significant user, or to determine changes in the wastewater discharges from a user's facility. Within thirty (30) days of being so notified, a user shall comply with the Department's request in the manner and form prescribed by the Department. Failure of the Department to so notify a user shall not relieve the user of the duty to obtain a permit as required by this division.

- A. A user, which becomes subject to a new or revised National Categorical Pretreatment Standard, shall apply for a wastewater discharge permit within ninety (90) days after the promulgation of the applicable National Categorical Pretreatment Standard, unless an earlier date is specified or required by 40 C.F.R. § 403.12(b). The existing user shall provide a permit application which includes all the information specified in this Ordinance.
- B. A separate permit application shall be required for each separate facility.
- C. Existing permittees shall apply for permit reissuance a minimum of ninety (90) days prior to the expiration of existing permits on a form prescribed by the Department.

Application or reapplication information. In support of an application or reapplication for a wastewater discharge permit, the industrial user shall submit, in units and terms appropriate for evaluation, the following information:

- A. Corporate or individual name, any assumed name(s), federal employer identification number, address, and location of the discharging facility;

- B. Name and title of the authorized representative of the industrial user who shall have the authority to bind the industrial user financially and legally;
- C. All SIC numbers of all processes at this location according to the Standard Industrial Classification manual, issued by the Executive Office of the President, Office of Management and Budget, 1987, as amended;
- D. Actual or proposed wastewater constituents and characteristics for each parameter listed in the permit application form. Such parameters shall include those applicable pollutants having numeric limitations as enumerated in this Ordinance, those pollutants limited by national categorical pretreatment standards regulations for applicable industries and any toxic pollutants known or suspected to be present in the discharge, regulated in the previous permit, or specifically requested by the Detroit Water and Sewerage Department. For each parameter, the expected or experienced maximum and average concentrations during a one (1) year period shall be provided. For industries subject to national categorical pretreatment standards or requirements, the data requested herein shall be separately shown for each categorical process wastestream. Combined wastestreams proposed to be regulated by the combined wastestream formula shall also be identified. Sampling and analysis shall be performed in accordance with procedures established by the EPA pursuant to 33 U.S.C. §1314(g) and contained in 40 C.F.R. Part 136, as amended. Where 40 C.F.R. Part 136 does not include sampling or analytical techniques for the pollutants in question, sampling and analysis shall be performed using validated analytical methods approved by the administrator.
- E. A listing and description of activities, facilities and plant processes on the premises. Those processes, which are subject to national categorical pretreatment standards or requirements, shall be so designated. Identify which pollutants are associated with each process;
- F. A listing of raw materials and chemicals which are either used in the manufacturing process. Any user claiming immunity from having to provide such information for reasons of national security shall furnish acceptable proof of such immunity;
- G. A description of typical daily and weekly operating cycles for each process in terms of starting and ending times for each of the seven (7) days of the week;
- H. Denote: (i) The average and maximum twenty-four (24) hour wastewater flow rates including, if any, daily, monthly and seasonal variations; (ii) each national categorical process wastestream flow rate and the cooling water, sanitary water and storm water flow rates separately for each connection to the POTW; and (iii) each combined wastestream;
- I. A drawing showing all sewer connections and sampling manholes by the size, location, elevation and points or places of discharges into the POTW; also a flow schematic showing which connections receive each national categorical process wastestream and which connections receive storm water, sanitary water or cooling water; also show which lines handle each combined

wastestream. This schematic shall be cross-referenced to the information furnished in this section;

- J. Each product produced by type, amount, process or processes and rate of production as pertains to processes subject to production based limits under the national categorical pretreatment standards or requirements only;
- K. A statement regarding whether or not the requirements of this division and of the national categorical pretreatment standards and requirements are being met on a consistent basis and, if not, what additional operation and maintenance work and/or additional construction is required for the industrial user to meet the applicable standards and requirements. This statement shall be reviewed and signed by the authorized representative and, as appropriate, certified by a qualified professional;
- L. Basic information on the program for the prevention of accidental discharges;
- M. Proposed or actual hours of operation of each pretreatment system for each production process;
- N. A schematic and description of each pretreatment facility which identifies whether each pretreatment facility is of the batch type or continuous process type;
- O. If other than Detroit Water and Sewerage Department potable water, the industrial user's source of intake water together with the types of usage and disposal method of each water source, and the estimated wastewater volumes from each source;
- P. If additional construction and/or operation and maintenance procedures will be required to meet the requirements of this division and the national categorical pretreatment standards, the shortest schedule by which the user will provide such additional construction and/or implement the required operation and maintenance procedures;
- Q. Identify whether the user has conducted a waste minimization assessment or audit of its operations in order to identify all feasible source reduction and recycling practices that may be employed to reduce or eliminate the generation of pollutants and other waste at the facility; and
- R. Any other information as may reasonably be required to prepare and process a wastewater discharge permit.

Permit issuance. Upon receipt of an application, the Department shall review the application, determine, and so notify the industrial user in writing regarding any of the following:

- A. The industrial user does not meet the definition of a significant industrial user and is not required to have a wastewater discharge permit;
- B. The industrial user does meet the definition of a significant industrial user but is found by the Department to have no reasonable potential for adversely affecting the POTW operation or for violating any pretreatment standard or requirement, and is not required to have a wastewater discharge permit. The

Department shall make such determination in accordance with the requirements of 40 C.F.R. § 403.8(f)(6);

- C. The application is incomplete or the information only partially satisfies the information and data required by 40 C.F.R. § 403.12 or by the Department, and that additional information and data are required which shall be promptly furnished. Where appropriate, the industrial user is notified regarding specific information that is missing, or that the application is unacceptable;
- D. The industrial user is required to have a wastewater discharge permit. The Department shall notify the industrial user of its determination and the basis of the determination.
- E. The Department may withhold issuance of a permit to a significant user, which has not submitted an adequate or timely report, or permit application, to the Department as the control authority in accordance with the reporting requirements of 40 C.F.R. § 403.12, or whose discharge is in violation of this division. If the Department determines that an industrial user is required to have a wastewater discharge permit and has evaluated and accepted the data furnished, the industrial user will be notified accordingly by certified mail. The notification shall contain a copy of the draft permit, so marked, for the industrial user's review. An industrial user has thirty (30) days from the date of mailing to file a response to the draft permit, twenty (20) days from the date of mailing to file an appeal regarding a permit issued as final. Upon disposition by the Department of any contested terms or conditions, a permit shall be issued as final. Only one (1) facility location shall be included in each permit.

Permit conditions. Wastewater discharge permits shall contain all requirements of 40 C.F.R. § 403.8(f)(1)(iii) and shall be deemed to incorporate all provisions of this division, other applicable laws, rules, regulations, and user charges and fees established by the City of Detroit or the Charter Township of Washington without repetition therein. In addition, permits may contain the following:

- A. Limits on the average and maximum wastewater constituents or characteristics which are equivalent, more restrictive than, or supplemental to the numeric limits enumerated in this Ordinance, or the applicable national categorical pretreatment standards;
- B. Limits on average, and maximum rate and time of discharge or requirements for flow regulation and equalization;
- C. Requirements for installation, operation, and maintenance of discharge sampling manholes and monitoring facilities by the industrial user;
- D. Restrictions on which of the user's discharge wastestreams are to be allowed to be discharged at each point of connection to the POTW;
- E. Specifications for industrial user monitoring programs which may include sampling locations, frequency and type of sampling, number, types and standards for tests and reporting schedules;
- F. Requirements for the prevention of accidental discharges and the containment of spills or slug discharges;
- G. Restrictions based on the information furnished in the application;

- H. Additional reporting requirements:
- a. All permittees shall submit a report on the form prescribed by the Department, or on an alternative form approved by the Department, indicating the status of compliance with all conditions enumerated or referred to in the wastewater discharge permit, or made applicable to the permit by this division. Unless required more frequently, the reports shall be submitted at six (6) month intervals on a schedule to be established by the Department. Analytical data generated by the Department may not be submitted in lieu of the facility's own monitoring data as required by the wastewater discharge permit.
 - b. Permittees not subject to national categorical pretreatment standards or requirements shall submit a report in accordance with the requirements of this Ordinance. The report shall show the concentration of each substance for which there is a specific limitation in the permit, or which may be identified by the Department in accordance with this Ordinance.
 - c. Permittees subject to national categorical pretreatment standards or requirements shall submit compliance reports at the times and intervals specified by federal regulations and by the Department. A compliance report shall be submitted to the Department no later than ninety (90) days following the final compliance date for a standard, or in the case of a new source, no later than ninety (90) days, following commencement of the introduction of wastewater into the POTW, and in accordance with 40 C.F.R. § 403.12(d). A report on continued compliance shall be submitted at six (6) month intervals thereafter on the schedule established by the Department and incorporated into the industrial users discharge permit and in accordance with this Ordinance. The reports shall be either on a form prescribed by the Department or on an alternate form approved by the Department, and shall indicate the nature and concentration of all pollutants in the discharge from each regulated process which are limited by national categorical pretreatment standards, or which there is a specific limitation in the permit, or which may be identified by the Department in accordance with this Ordinance. The report shall include a record of measured or estimated average and maximum daily flows for the reporting period for the discharges regulated by the permit. The combined wastestream formula may be used for reporting purposes after the initial information has been furnished to the Department, provided there have been no changes to the elements composing the combined wastestream.
 - d. Reports shall contain the results of representative sampling performed during the period covered by the report and of the discharge and analysis of pollutants contained therein, and, for significant industrial users subject to production based standards, shall be cross-referenced to the related flow or production and mass as required to determine compliance with the applicable pretreatment standards. The frequency of monitoring shall be as prescribed in the applicable general pretreatment regulations, being 40 C.F.R. § Part 403, or by the Department, but no less than is necessary to assess and assure compliance by the industrial user with the most stringent

applicable pretreatment standards and requirements. All sampling and analysis shall be performed in accordance with applicable regulations contained in 40 C.F.R. Part 136 and amendments thereto. Where 40 C.F.R. Part 136 does not include sampling or analytical techniques for the pollutants in question, sampling and analysis shall be performed using validated analytical methods approved by the administrator.

If an industrial user monitors any pollutant more frequently than required by the Department using the procedures as prescribed in this section, the results of this monitoring shall be included in such report. The report shall state whether the applicable pretreatment standards are being met on a consistent basis and, if not, what additional operation and maintenance practices and/or pretreatment system improvements or changes are necessary to bring the industrial user into compliance with the applicable pretreatment standards.

- e. This report, and those required under this Ordinance, shall include the following certification statement: "I certify under penalty of law that this document and all attachments were prepared under my direction, or supervision, in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and/or imprisonment for knowing violations. Said certification shall be signed by the facility's authorized representative, as defined in this Ordinance. If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, or overall responsibility for environmental matters for the company, a new authorization satisfying the requirements of the authorized representative definition must be submitted to the Department prior to, or together with, any reports to be signed by an authorized representative.
- f. If sampling performed by a permittee indicates a violation, the user shall notify the Department within twenty-four (24) hours of the time said user becomes, or should have become, aware of the violation. In addition, the user shall repeat the sampling and analysis, and submit the results of the repeat analysis to the Department within thirty (30) days after said user becomes, or should have become, aware of the violation.
- I. In the event the Director determines that an industrial user is discharging substances in quality, quantity or at locations which may cause problems to the POTW, or the receiving stream, the Department has the authority to develop and enforce effluent limits applicable to the user. To the extent the Department seeks to impose restrictions in a permit which are more restrictive than established in this division, the Department shall provide written

- documentation to explain the greater restriction for protection against pass through, interference, or violation of the NPDES permit;
- J. Requirement for pollution prevention initiatives; and
 - K. Other requirements reasonably necessary to ensure compliance with this division.
 - L. *Permit duration.* Permits shall be issued for a specified time period. Except as deemed necessary by the Department, or as otherwise provided for under this division, permits shall be issued for a specified period of not more than five (5) years nor less than one (1) year. The existing permit for significant industrial users, who timely submit an application for permit reissuance to the Department, shall be automatically extended until a permit is issued as final.
 - M. *Permit modification.* The terms and conditions of the permit may be subject to modification by the Department during the term of the permit as limitations or pretreatment standards and requirements identified this Ordinance are amended, or other just cause exists. Just cause for a permit modification includes, but shall not be limited to, the following:
 - a. Material or substantial changes to an industrial user's facility or operation, or changes in the characteristics of the industrial user's effluent. It shall be the industrial user's duty to request an application form and apply for a modification of the permit within thirty (30) calendar days of the change;
 - b. Change(s) in the Department's NPDES permit;
 - c. Embodiment of the provisions of a legal settlement or of a court order;
 - d. Any changes necessary to fulfill the Department's role as control authority;
 - e. An industrial user's noncompliance with portions of an existing permit;
 - f. A change of conditions within the POTW;
 - g. A finding of interference or pass through attributable to the industrial user;
 - h. Amendments to, or promulgation of, national categorical pretreatment standards or requirements including 40 C.F.R. Part 403 and those delineated in Section 86.1512 of this division. Permittees shall request an application form and apply to the Department for a modified permit within ninety (90) days after the promulgation of a new or revised national categorical pretreatment standard to which the industrial user shall be subject. Information submitted pursuant to this subsection shall be confined to that information related to the newly promulgated or amended national categorical pretreatment standard or requirement. However, information previously submitted need not be duplicated, insofar as the previously submitted information continues to be current and applicable. In addition, the Department may initiate this action;
 - i. Changes in the monitoring location.
 - j. Typographical errors or omissions in permits;
 - k. The Department may modify the permit on its own initiative based on its findings or reasonable belief of the above; or
 - l. The user may request a modification of the permit.
 - m. When initiated by the Department, the industrial user shall be informed of any proposed change in its permit. The Department will issue a draft

permit and an industrial user has thirty (30) days to file a response to the draft modified permit. Thereafter, the Department will issue a final permit and, unless appealed in accordance with the procedures contained in this Ordinance, the permit will become effective twenty (20) days after issuance.

- n. Permit custody and transfer. Wastewater discharge permits are issued to a specific person as defined herein for a specific discharge. A wastewater discharge permit shall not be reassigned or transferred or sold to a different person, new owner, new industrial user, different premises, or a new or changed operation without notice to and written approval of the Department, and providing a copy of the existing permit to the new owner or operator. It shall be the permit holder's duty to notify the Department of any such change at least thirty (30) days before the date of the change. Wastewater discharge permits, which do not receive the written approval of the Department prior to the change, shall be null and void regardless of reassignment, or transfer, or sale. If it has occurred, the Department may revoke a permit. If a change takes place, the Department may require the application for a new or modified permit. Any succeeding person shall comply with the terms and conditions of any existing permit which the Department allows to be retained.
- o. Permit notification requirements. All industrial users shall promptly notify the Department in advance of any substantial change in the volume or character of pollutants in their discharge, including the listed or characteristic hazardous waste for which initial notification under 40 C.F.R. § 403.12(p) has been made, request a permit application form, and apply for a modification of the permit at least thirty (30) calendar days prior to the change. Failure of the industrial user to so apply shall be considered a violation of this division.

186.1506 Monitoring facilities.

Sec. 86.1506.

- A. Significant industrial users shall provide, operate and maintain at their own expense a sampling manhole or special structure to facilitate monitoring, inspection, sampling, and flow measurement of their discharge by the Department and the industrial user, and to enable the Department to conduct such other monitoring and sampling as required for determining compliance with discharge requirements, limits and standards as provided for in this division. In the event the Department determines that the monitoring facility identified in the permit application is inadequate, a new monitoring facility must be identified, or provided, which shall allow for collection of a representative sample of the wastewater discharged from the facility. Unless otherwise determined at the discretion of the Department, said facility shall be provided within ninety (90) days of receipt of notification by the Department. The industrial user shall provide the Department with:

1. A drawing showing all sewer connections and sampling manholes by the size, location, elevation, and points or places of discharges into the POTW;
2. A flow schematic showing: (i) which connections receive each national categorical process wastestream, (ii) which connections receive storm water, sanitary water or cooling water, and (iii) which lines handle each combined wastestream. This report shall be certified by a professional engineer. If a significant industrial user fails to install the monitoring facilities within the prescribed time limits, then the Department may install such structure or device and the significant user shall reimburse the Department for any costs incurred therein.
3. The sampling manhole should be situated on the industrial user's premises in a location readily accessible to the Department. When such a location would be impractical or cause undue hardship to the industrial user, the Department may allow the facility to be constructed in the public street or sidewalk area when there is room and the location will not be obstructed by landscaping or parked vehicles. It shall be the responsibility of the industrial user to obtain any necessary approvals which may be required from other government agencies for the location and construction of monitoring facilities. There shall be ample room in or near such sampling or monitoring manhole or facility to allow accurate sampling and preparation of samples for analysis. The facility and any permanently installed sampling and measuring equipment shall be maintained at all times in a safe and proper operating condition at the expense of the industrial user. Whether constructed upon public or private property, the sampling and monitoring facilities shall be provided in accordance with the Department's requirements and all applicable local construction standards and specifications.

186.1507 Inspection, sampling and record-keeping.

Sec. 86.1507.

- A. For purposes of administering and enforcing this division, any other applicable provisions of this Ordinance or applicable State or Federal laws and regulations, the Department may inspect the establishment, facility or other premises of the industrial user. The Department's employees or authorized representative shall have access to the industrial user's premises for purposes of inspection, sampling, compliance monitoring and/or metering activities.
- B. Each such inspection or sampling activity shall be commenced and completed at reasonable times, and in a reasonable manner. Upon arrival at the industrial user's premises, the Department shall inform the industrial user, or the industrial user's employees, that sampling and/or inspection is commencing, and that the facility's authorized representative has the right to observe the inspection and/or sampling. The Department shall neither refrain from, nor be prevented or delayed from, carrying-out its inspection or sampling duties due

to the unavailability of the authorized representative of the facility to observe or participate in the inspection or sampling activity.

- C. While performing work on private property, employees or authorized representatives of the Department shall observe all reasonable safety, security and other reasonable rules applicable to the premises as established by the industrial user. Duly authorized employees or representatives of the Department shall bear proper credentials and identification, and at the industrial user's option may be accompanied by a duly authorized representative of the industrial user. Duly authorized Department representatives shall not be restricted from viewing any of the facility site. Department employees or representatives may take photographs of facilities subject to this division. Which shall be maintained by the Department as confidential in accordance with this Ordinance.
- D. Where an industrial user has security measures in force, the industrial user shall make prompt and necessary arrangements with the security personnel so that, upon presentation of appropriate credentials, personnel from the Department will be permitted to enter for the purposes of performing their specific responsibilities.
- E. Significant industrial users shall sample and analyze their discharge in accordance with the provisions of their permit. The Department may require such samples to be split with the Department for the Department's independent analysis.
- F. Industrial users shall maintain records of all information from monitoring activities required by this division, or by 40 C.F.R. § 403.12(n). Industrial users shall maintain the records for no less than three (3) years. This period of record retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the industrial user, or the operation of the City of Detroit's Industrial Waste Program, or when requested by the department, by the State, or by the EPA.
- G. Upon the request of the Department, industrial users shall furnish information and records relating to discharges into the POTW. Industrial users shall make such records readily accessible to the Department at all reasonable times, and allow the Department to copy such records.
- H. In the event the Department obtains samples, and analyses are made of such samples, a copy of the results of such analyses shall be promptly furnished upon written request by the industrial user's authorized representative. When requested by the industrial user, the Department employee or representative shall leave with the user, a portion of any sample of the user's discharge taken from any sampling point on or adjacent to the premises for the user's independent analysis. In cases of disputes arising over shared samples, the portion taken and analyzed by the Department shall be controlling unless proven invalid.
- I. In addition to any other violation caused by the discharge described herein, in the event a single grab sample of the industrial user's discharge is obtained by the Department, and then analyzed in accordance with 40 C.F.R. Part 136, and found to contain concentrations of pollutants which are two (2) or more times

greater than the numeric limitations as listed in this Ordinance, or as contained in the facility's wastewater discharge permit, the industrial user shall implement its slug control plan, and shall provide a written report to the Department within fourteen (14) days, which describes the cause of greater concentration and provides a description of the means by which future discharge concentrations will be held to values of less than two (2) times the limitation in the future.

186.1508 Confidential information.

Sec. 86.1508.

Information and data on an industrial user obtained from written reports, questionnaires, permit applications, permits and monitoring programs, and from inspections shall be available to the public or other governmental agencies without restriction unless the industrial user specifically requests and is able to demonstrate to the satisfaction of the Department that the release of such information would divulge information, processes or methods of production entitled to protection as trade secrets of the industrial user.

When submitted to the Department, all information claimed to be confidential must be clearly marked 'confidential'. When requested by the person furnishing the report, the portions of a report determined by the Department to disclose trade secrets or trade secret processes, and which are clearly labeled as confidential, shall not be made available for inspection by the public, but shall be made available upon request to governmental agencies for uses related to this division, to the National Pollutant Discharge Elimination System (NPDES) permit, and to the State Disposal System permit and/or the pretreatment programs, provided, however that information shall be treated as confidential by the governmental agency, until such time as the information has been determined to be non-confidential by the governmental agency. Confidential information on industrial users, which the Department releases pursuant to a request of another governmental agency, should be handled by the other governmental agency pursuant to its own confidentiality procedures. The Department cannot control how another governmental agency handles such confidential information, and assumes no responsibility for the disposition of the information released to the governmental agency. The Department will use sufficient care to inform the other governmental agency of the existence of the industrial user's confidentiality claim.

The Department shall determine whether the information requested to be treated as confidential, in fact, satisfies the requirements of confidential information as defined herein. The decision of the Department shall be made in writing.

Wastewater constituents and characteristics will not be recognized as confidential information.

Except as otherwise determined by the Department or provided for by applicable law, all information with respect to an industrial user on file with the City shall be made available upon request by such user or the user's authorized representative during normal business hours.

186.1509 Statutes, laws and regulations.

Sec. 86.1509.

The National Categorical Pretreatment Standards defined in 40 C.F.R. Chapter I, Subchapter N, Parts 405-471, shall be and are incorporated by reference herein and made a part hereof. Unless otherwise provided, any reference in this division to a code, standard, rule, regulation, or law enacted, adopted, established, or promulgated by any private organization, or by any element or organization of government other than the Charter Township of Washington shall be construed to apply to such code, standard, rule, regulation, or law in effect or as amended or promulgated, from the date of enactment of this division.

186.1510 Enforcement.

Sec. 86.1510.

Violations. It shall be a violation of this division for any user to:

- A. Fail to completely and/or accurately report the wastewater constituents and/or characteristics of the industrial user's discharge;
- B. Fail to report significant changes in the industrial user's operations or wastewater constituents and/or characteristics within the time frames provided in this Ordinance;
- C. Refuse reasonable access to the industrial user's premises, waste discharge, or sample location for the purpose of inspection or monitoring;
- D. Restrict, lockout or prevent, directly or indirectly, access to any monitoring facilities constructed on public or private property. The locking or securing of the monitoring facility shall not constitute a violation pursuant to this subsection, provided, that upon request reasonable access to the facility is promptly provided to the Department;
- E. Restrict, interfere, tamper with, or render inaccurate any of the Department's monitoring devices including, but not limited to, samplers;
- F. Fail to comply with any condition or requirement of the industrial user's wastewater discharge permit;
- G. Fail to comply with any limitation, prohibition, or requirement of this division including any rule, regulation, or order issued hereunder. Industrial users acting in full compliance with wastewater discharge permits issued prior to the effective date of this division shall be deemed to be in compliance with the requirements of this division, and such permits shall remain in effect and be enforceable under this division until a superseding permit is effective. Industrial users shall comply with applicable National Categorical Pretreatment standards and requirements on the date specified in the federal Regulations, regardless of compliance schedules.

Upsets. An upset shall constitute an affirmative defense to an action brought for noncompliance with National Categorical Pretreatment standards where the requirements of Subsection (1) of this section are met.

- A. An industrial user who wishes to establish the affirmative defense shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence, that:

- i. An upset occurred and the industrial user can identify the cause(s) of the upset;
 - ii. At the time, the facility was being operated in a prudent and workmanlike manner and in compliance with applicable operation and maintenance procedures;
 - iii. The industrial user has submitted the following information to the Department, orally or in writing, within twenty-four (24) hours of becoming aware of the upset and where this information is provided orally, a written submission must be provided within five (5) days:
 - 1. A description of the discharge and cause of noncompliance;
 - 2. The period of noncompliance including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue; and
 - 3. Steps being taken and/or planned to reduce, eliminate and prevent recurrence of the noncompliance.
- B. In any enforcement proceeding, the industrial user seeking to establish the occurrence of an upset shall have the burden of proof;
- C. The industrial user shall control production of all discharges to the extent necessary to maintain compliance with this division upon reduction, loss, or failure of its treatment facility until the facility is restored or an alternative method of treatment is provided. This requirement applies in the situation where, among other things, the primary source of power of the treatment facility is reduced, lost or fails.
- D. Bypass. Bypasses are prohibited unless the bypass does not cause a violation of pretreatment standards or requirements, but only if it is for essential maintenance to ensure efficient operation of the treatment system. These bypasses are not subject to the provisions of Subsections (i) and (ii) of this section.
 - i. Notice of anticipated bypass. Industrial users anticipating a bypass shall submit notice to the Department at least ten (10) days in advance.
 - ii. Notice of unanticipated bypass. An industrial user shall submit oral notice of an unanticipated bypass that exceeds applicable pretreatment standards within twenty-four (24) hours from the time the industrial user becomes or should have become aware of the bypass. A written submission shall be provided within five (5) days of the time the industrial user becomes or should have become aware of the bypass. The written submission shall contain a description of the bypass including exact dates and times, and if the bypass has not been corrected, the prevent reoccurrence of the bypass.
- E. Prohibition of bypass and enforcement. Bypass is prohibited, and the Department may take enforcement action against a user for a bypass, unless:

- i. The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - ii. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated waste, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and
 - iii. The industrial user properly notified the Department as described in this Ordinance.
 - iv. Bypass approval. Where it meets all conditions in this section, the Department may approve an anticipated bypass.
- F. Where one (1) or more of the measurements taken for any pollutant defined in this Ordinance during a six (6) month period exceed by any magnitude the daily maximum non-detect limit for the same parameter, the industrial user may develop and implement pollution prevention initiatives, or a BMP, as part of its response. The Department may, as part of an Administrative Order, also require development of a BMP as a part of the Department's enforcement response. Upon approval of the Department, these pollution prevention initiative, or BMPs shall be made an enforceable part of the wastewater discharge permit. Industrial users shall provide, at six (6) month intervals, analytical results and certifications in support of its implementation of an approved pollution prevention initiative or BMPs. Upon demonstration of compliance, the industrial user may request to be relieved of this implementation requirement.
- G. Emergency suspensions and orders. The Department may order suspension of the sewer or wastewater treatment service and/or a wastewater discharge permit where, in the opinion of the Department, such suspension is necessary to stop any actual or threatened discharge which presents or may present an imminent or significant hazard to the health or welfare of persons or to the environment, interferes or may interfere with the POTW, or causes or may cause the City of Detroit to violate any condition of its NPDES permit. Any person notified of a suspension of the sewer or wastewater treatment service and/or the wastewater discharge permit shall immediately stop or eliminate the contribution. In the event the Department provides informal notification under this section, written confirmation and an order shall be provided within twenty-four (24) hours. In the event of a failure of the person to comply voluntarily with any suspension or revocation order, the Department shall take such steps as deemed necessary, including immediate severance of the sewer connection or services, to prevent or minimize damage to the POTW system or danger to any individual or the environment. In the event such steps are taken, the Director shall notify the industrial user within twenty-four (24) hours in writing of such action

and order, and the specific recourse available. In any event, the Department shall provide the industrial user with an opportunity for a hearing before the Director, or his designated representative, within ten (10) days of such action. The industrial user shall submit a detailed written statement to the Department within fifteen (15) days of the occurrence describing the causes of the harmful contribution and the measures taken to prevent any future occurrence. Upon proof of elimination of the noncomplying discharge, the Department shall reinstate the wastewater discharge permit and/or the sewer or wastewater treatment service.

- H. Notice of violation. Except in the case of an actual or threatened discharge as specified in Subsection (e) of this section, whenever the Department has reason to believe that any industrial user has violated or is violating this division, the Department shall serve a written notice stating the nature of the violation upon such industrial user. Where applicable, the Department shall pursue appropriate escalating enforcement action as defined within its approved enforcement response plan. The failure of the Department to issue a notice of violation shall not preclude the Department from escalating its enforcement response.

Administrative actions. Whenever the Department has reasonable grounds to believe that a user is violating, or has violated, a provision of its wastewater discharge permit, or a pretreatment standard or requirement or any prohibition of this division, the Department, may initiate appropriate administrative enforcement action, except in the case of emergency or flagrant violation, in order to compel the industrial user to eliminate or to remedy such violation as soon as possible.

- A. *Conferences.* The Department may order any person, who violates this division, to attend a conference wherein the Department may endeavor to cause the user to eliminate or remedy the violation by establishing an enforceable compliance schedule. The notice of violation shall be served at least ten (10) days before the scheduled conference and shall set forth the date, time, and place thereof. The conference shall be conducted by a representative of the Department. The industrial user shall present a plan and schedule for achieving compliance with this division. Nothing contained herein shall require the Department to accept or agree to any proposed plan or schedule, or to prevent the Department from proceeding with a show cause hearing as set forth in Subsection (2) of this section. If the attendees agree upon a compliance schedule, the user and the Department's duly authorized representative may enter, by consent, into a compliance agreement or an administrative order setting forth the terms of such agreement. An industrial user must exhibit good faith and expeditious efforts to comply with this division and any procedures, requirements, and agreements hereunder.
- B. *Compliance schedules.* The user and the Department may agree upon a schedule which sets forth the terms and conditions, and time periods or schedules for completion of actions to remedy or to eliminate the causes of violation. These schedules may be developed as part of a compliance

agreement, administrative consent order. Schedules developed under this subsection shall adhere to the following conditions:

- a. The schedule shall contain increments of progress in the form of dates for the commencement and completion of major events leading to the construction and operation of upgraded or additional pretreatment facilities, or to the implementation of additional operation and maintenance procedures required for the industrial user to meet the applicable pretreatment requirements and standards including, but not limited to, hiring an engineer, completing preliminary plans, completing final plans, executing contracts for major components, commencing construction, and completing construction;
- b. No single increment referred to in Subsection (i) of this section shall exceed nine (9) months;
- c. Not later than fourteen (14) days following each date in the schedule and the final date for compliance, the industrial user shall submit a progress report to the Department including, at a minimum, whether it complied with the increment of progress to be met on such date and, if not, the date which it expects to comply with this increment of progress, the reason(s) for delay, and the steps being taken by the industrial user to return to the established schedule; and
- d. Any deviations from the compliance schedule may result in the industrial user being found in violation of this division.

Administrative orders. The Department may order any industrial user, who violates or continues to violate this division or a duly issued permit, to install and to properly operate devices, treatment facilities, or other related appurtenances. In addition, orders may contain such other requirements as might reasonably be necessary and appropriate to address the violation including the installation of pretreatment technology, additional self-monitoring and management practices, implementation of a waste minimization assessment to identify and implement feasible source reduction, and recycling practices to reduce the generation or release of pollutants at the facility. An order may be either an administrative consent order, which is the result of an agreement, or a unilateral administrative order.

Show cause hearing. The Department may order any industrial user, who violates this division or allows such violation to occur, to show cause before the Department why a proposed enforcement action should not be taken. A notice shall be served upon the industrial user specifying the time and place of a hearing before the Department regarding the violation, the reason(s) why the action is to be taken, the proposed enforcement action, and directing the industrial user to show cause before the Department why any proposed enforcement action should not be taken. The notice of the hearing shall be served personally, or by registered or certified mail with return receipt requested, at least ten (10) days before the hearing. Service may be made upon any agent or officer of a corporation, or its authorized representative.

- A. Hearing Proceeding. The hearing shall be conducted in accordance with the procedures adopted by the Board. A hearings officer shall conduct the show cause hearing and take the evidence, and may:
 - a. In the name of the Board, issue notices of hearing requesting the attendance and testimony of witnesses and the production of evidence relevant to any matter involved in such hearing;
 - b. Transmit a report of the evidence and hearing, including transcripts and other evidence, together with recommendations to the Director for action thereon.
- B. Transcript. At any show cause hearing held pursuant to this division, testimony shall be recorded by a court reporter.

Actions. After a show cause hearing has been conducted, the hearings officer shall issue an order to the industrial user directing any of the following actions:

- A. Immediate compliance with the industrial user's wastewater discharge permit or with any applicable limitation, condition, restriction or requirement of this division, or applicable local, State or Federal law or regulation;
- B. Pretreatment of waste by installation of adequate treatment equipment or proper operation and maintenance of existing treatment equipment be accomplished within a specified time period;
- C. Submission of compliance reports on effluent quality and quantity as determined by self- monitoring and analysis during a specified time period;
- D. Submission of periodic reports on effluent quality and quantity determined by self-monitoring analysis throughout the final period set by a compliance date;
- E. Control of discharge quantities;
- F. Payment of costs for reasonable and necessary inspection, monitoring, and administration of the industrial user's activities by the Department during compliance efforts; and/or
- G. Any such other orders as are appropriate including, but not limited to, immediate termination of sewer or wastewater treatment services, or revocation of a wastewater discharge permit, or orders directing that following a specified time period sewer or wastewater treatment service will be discontinued unless adequate treatment facilities, devices, or operation and maintenance practices have been employed.
- H. A finding the user has demonstrated by a preponderance of the evidence that a violation either of this division or of a duly issued permit did not occur.

Public notification of significant noncompliance. The Department shall publish in the largest daily newspaper published in the City of Detroit and the list of all industrial users which were in significant noncompliance with applicable pretreatment requirements at any time during the previous twelve (12) months. All industrial users identified in a proposed publication shall be provided with a copy of the proposed notice at least thirty (30) days before publication and allowed an opportunity to comment as to its accuracy.

Legal actions.

- A. Criminal action: Any user, who violates any provision of this division including the failure to pay any fees, fines, charges or surcharges imposed hereby, or any condition or limitation of a permit issued pursuant thereto, or who knowingly makes any false statements, representations or certification in any application, record, report, plan or other document filed or required to be maintained pursuant to this division or wastewater discharge permit, or who tampers with or knowingly renders inaccurate any monitoring device required under this division, is guilty of a misdemeanor and, upon conviction, shall be punished by a fine not to exceed five hundred dollars (\$500.00) for each violation per day, or by imprisonment for not more than ninety (90) days, or by both. The Department is hereby authorized, through its counsel, to seek prosecution of criminal charges against any person violating any provision of this division.
- B. Civil action: Whenever the Department has reasonable grounds to believe that a user is violating, or has violated, a provision of its wastewater discharge permit, a pretreatment standard or requirement or any requirement of this division, the Director may commence a civil action to compel compliance in a court of competent jurisdiction to enjoin the user from discharging, and/or to obtain appropriate relief to remedy the violations. The Department or Board may also seek additional legal and/or equitable relief. The commencement of suit neither constitutes an exclusive election of remedies nor prohibits the Department, Director, Board, or City of Detroit from commencing action in Federal Court for discharges believed to be in violation of this division, State and Federal requirements contained in the Clean Water Act, the City of Detroit's NPDES permit, or other applicable laws or requirements. In addition, the City of Detroit may recover the reasonable attorney fees, court costs, court reporters' fees, and other unusual expenses related to enforcement activities or litigation against the person found to have violated this division, or the orders, rules, regulations and permits issued hereunder.
- C. All fines, costs, and penalties which are imposed by any court of competent jurisdiction shall be payable to the City of Detroit Water and Sewerage Department.

186.1511. Reconsideration and appeal.

Sec. 86.1511.

Through the procedures of reconsideration and appeal, a user may contest actions, determinations, or decisions of the Department which result from its construction, application and enforcement of this division. The procedures contained within this section govern reconsideration and appeal with respect to construction, application, and enforcement of this division.

Selection of reconsideration or of appeal.

- A. Except for those actions, determinations, or decisions which are expressly identified as subject only to appeal, reconsideration may be requested by any permit applicant, permittee, authorized industrial wastewater discharger or other discharger, who is adversely affected by any action, determination, or decision that is made by, or on behalf of, the Department by the Director, or

an authorized representative, and that interprets, implements or enforces the provisions of this division.

- B. An appeal may be requested by any permit applicant, permittee, authorized industrial wastewater discharge or other discharger, who is adversely affected (i) by a permit issued as final by the Department, or (ii) by an administrative order entered after a show cause order and hearing, or after a hearing for reconsideration.
- C. Unless otherwise expressly provided for by this division, a request for reconsideration or appeal must be signed by an authorized representative, and received at the Department's General Offices within twenty (20) days from the date of the occurrence of the action, determination, or decision in dispute. A request for reconsideration shall contain the requester's name and address, a brief statement of the reason(s), and the factual basis underlying the request.
- D. A request for reconsideration shall be filed in triplicate either by hand delivery or by certified mail to the General Offices of the Department. Where a request for reconsideration or appeal either is not filed within the time period provided for in this subsection or is improperly made, the action, determination or decision of the Director, or the Department's authorized representative, is final and any right to reconsideration appeal may be deemed waived.

Reconsideration. Within fifteen (15) days after receipt of a timely and proper request for reconsideration, the Department shall notify the applicant of the time and place for a hearing.

- A. A hearing for reconsideration shall be conducted by a hearings officer who is designated by the Director and may be an employee of the Department. The decision of the hearings officer shall be in the form of a recommendation to the Director and embodied in an administrative order. Except for an administrative consent order that was negotiated and agreed to by both parties, an administrative order is appealable in accordance with Subsection (c) of this section.
- B. Where improperly or untimely submitted, the Department may reject a request for reconsideration. The Department shall notify the requester in writing that the request has been rejected.
- C. Unless the date is mutually extended by both parties, the hearing shall be conducted neither less than ten (10) days nor more than thirty (30) days after mailing of the notice. For cause and at the discretion of the hearings officer, the hearing may be continued for a reasonable time.
- D. The hearing for reconsideration shall be an informal consultation and conference where the requester in person, or by counsel, shall present their argument, evidence, data, and proof in connection with the issue(s) being reconsidered. The parties shall not be bound by the Michigan Rules of Evidence. The hearing shall be transcribed and the requester may obtain a copy of the hearing transcript, as appropriate, from the Department or from the court reporter.

- E. Within thirty (30) days after the close of the hearing, the hearings officer shall issue a final decision, which shall contain a recommendation to the Director. The hearings officer shall send such decision to the requester by certified mail.
- F. Unless such action is necessary to prevent pass-through, interference or other harm to the POTW, to the public or to the waters of this State, the filing of a request for reconsideration in accordance with this section shall stay the action by the Department that is the subject of the hearing for reconsideration.

Appeal. Within thirty (30) days after receipt of a timely and proper request for an appeal, the Department shall notify the applicant in writing regarding the time and place for a hearing. The hearing shall be conducted in accordance with procedures set by the Board until rules are promulgated pursuant to Section 2-111 of the 1997 Detroit City Charter. In addition:

- A. Any request for an appeal must be made within twenty (20) days of the Department's action, determination or decision regarding the request for reconsideration or any permit issued in accordance with this division.
- B. Where a request either is not filed within the time period contained in this subsection or is improperly made, the action, determination or decision of the Director, or the Department's authorized representative, is final and any right to appeal may be deemed waived. Where untimely or improperly submitted, the Department may reject the request for an appeal, and shall notify the requester in writing that such request has been rejected.
- C. The Department shall appoint a hearings officer. The hearings officer shall review the evidence, and within fifteen (15) days after the close of the hearing shall issue a written recommendation to uphold, modify or reverse the action, determination, or decision of the Department.
- D. The written recommendation of the hearings officer shall be submitted to the Board which shall render a final decision within thirty (30) days of its next regularly scheduled meeting.
- E. In accordance with applicable law, the user or the Department may appeal any final decision of the Board to a court of competent jurisdiction.
- F. Unless such action is necessary to prevent pass through, interference, or other harm to the POTW, to the public or to the waters of this State, the filing of a request for appeal in accordance with this section shall stay the action by the Department that is the subject of the appeal.

186.1512

Sec. 86.1512.

Aluminum Forming	40 C.F.R. Part 467
Asbestos Manufacturing	40 C.F.R. Part 427
Battery Manufacturing.....	40 C.F.R. Part 461
Builder's Paper and Board Mills.....	40 C.F.R. Part 431
Canned and Preserved Fruits/Vegetables.....	40 C.F.R. Part 407
Canned and Preserved Seafood Proc.....	40 C.F.R. Part 408
Carbon Black Manufacturing.....	40 C.F.R. Part 458

Cement Manufacturing.....	40 C.F.R. Part 411
Centralized Waste Treatment.....	40 C.F.R. Part 437
Coal Mining	40 C.F.R. Part 434
Coil Coating.....	40 C.F.R. Part 465
Copper Forming	40 C.F.R. Part 465
Dairy Products Processing.....	40 C.F.R. Part 405
Electrical and Electronic Components I & II.....	40 C.F.R. Part 469
Electroplating	40 C.F.R. Part 413
Explosives Manufacturing	40 C.F.R. Part 457
Feed Lots	40 C.F.R. Part 412
Ferroalloy Manufacturing	40 C.F.R. Part 424
Fertilizer Manufacturing.....	40 C.F.R. Part 418
Glass Manufacturing	40 C.F.R. Part 426
Grain Mills	40 C.F.R. Part 406
Gum and Wood Chemicals Mfg.....	40 C.F.R. Part 454
Hospital.....	40 C.F.R. Part 460
Ink Formulating	40 C.F.R. Part 447
Inorganic Chemicals Manufacture (I & III).....	40 C.F.R. Part 415
Iron and Steel	40 C.F.R. Part 420
Landfills.....	40 C.F.R. Part 445
Leather Tanning & Finishing	40 C.F.R. Part 425
Meat Products	40 C.F.R. Part 432
Metal Finishing	40 C.F.R. Part 433
Metal Molding and Casting	40 C.F.R. Part 464
Metal Products and Machinery	40 C.F.R. Part 438
Mineral Mining and Processing.....	40 C.F.R. Part 436
Nonferrous Metals Forming	40 C.F.R. Part 471
Nonferrous Metals Mfg. I.....	40 C.F.R. Part 421
Nonferrous Metals Mfg. II	40 C.F.R. Part 421
Ore Mining and Dressing.....	40 C.F.R. Part 440
Organic Chemicals, Plastics, and Synthetic Fibers.....	40 C.F.R. Part 414
Paint Formulating.....	40 C.F.R. Part 446
Paving and Roofing Material	40 C.F.R. Part 443
Pesticide Chemicals.....	40 C.F.R. Part 455
Petroleum Refining	40 C.F.R. Part 419
Pharmaceutical	40 C.F.R. Part 439
Phosphate Manufacturing	40 C.F.R. Part 422
Photographic.....	40 C.F.R. Part 459
Plastics Molding and Forming.....	40 C.F.R. Part 463
Porcelain Enameling	40 C.F.R. Part 466
Pulp, Paper, and Paperboard.....	40 C.F.R. Part 430 & 431
Rubber Manufacturing	40 C.F.R. Part 428
Soap and Detergent Mfg.....	40 C.F.R. Part 417

Steam Electric	40 C.F.R. Part 423
Sugar Processing	40 C.F.R. Part 409
Textile Mills	40 C.F.R. Part 410
Timber Products.....	40 C.F.R. Part 429
Transportation Equipment Cleaning.....	40 C.F.R. Part 442
Waste Combusters.....	40 C.F.R. Part 444

186.1513

Sec. 86.1513

An Industrial User may elect, in lieu of the Total Phenols Limitation, to substitute specific limitations for each of the eight (8) individual phenolic compounds identified under the Total Phenols Limitation. The following specific limitations, expressed in mg/l, shall be applied in lieu of the Total Phenols Limitation, upon election;

2-Chlorophenol.....	2.0 mg/l
4-Chlorophenol.....	2.0 mg/l
4-Chloro-3-methylphenol	1.0 mg/l
2,4-Dichlorophenol.....	5.5 mg/l
2,4-Dinitrophenol.....	2.0 mg/l
4-Methylphenol.....	5.0 mg/l
4-Nitrophenol.....	15.0 mg/l
Phenol	14.0 mg/l

Following election, the wastewater discharge permit shall be modified to incorporate these substituted parameters and an Industrial User shall be responsible for monitoring and reporting compliance with these parameters.

186.1514. Interim Discharge Limitations

Sec. 86.1514.

No user shall discharge wastewater containing any of the following pollutants in excess of the following interim pollutant discharge limitations:

- (1) Compatible Pollutants:
 - a. Any Fats, Oil or Grease (FOG) in concentrations greater than 1,500 mg/l based on an average of all samples collected within a twenty-four (24) hour period.
 - b. Any Total Suspended Solids (TSS) in concentrations greater than 7,500 mg/l.

c. Any Biochemical Oxygen Demand (BOD) in concentrations greater than 7,500 mg/l.

d. Any Phosphorus (P) in concentrations greater than 250 mg/l.

Unless otherwise stated, all limitations are based upon samples collected over an operating period representative of a User's discharge, and in accordance with 40 CFR Part 136.

(2) Non-Compatible Pollutants

Cadmium (Cd) 1.0 mg/l

186.1600 Pedestrian ways.

Sec. 86.1600.

- A. Provisions shall be made for pedestrian ways completely across the Developer's project where it abuts existing or proposed public streets and existing or proposed private streets. Said provision shall consist of permission from the Macomb County Road Commission for use of the road rights-of-way and/or the granting of easements on private property depending upon the appropriate location of the pedestrian ways as determined by the Township.
- B. The Township Board shall establish a fund for payments made as an alternative to construction of sidewalks and/or pathways. For all projects, the Developer shall either construct a pedestrian way completely across the project where it abuts existing or proposed public streets or existing or proposed private streets, or as an alternative to said construction, he shall deposit with the Township monies in the following amounts which are to be placed into said fund said amounts to be determined by the Township. These funds can be used by the Township to extend sidewalks and/or pathways anywhere in the Township.
1. Where a pedestrian improvement is planned for both sides of the street at the site location the deposit shall be equivalent to 100% of the estimated improvement cost on one side of the street determined by the Township.
 2. Where a pedestrian improvement is planned for only one side of the street at the site location, the deposit shall be equivalent to 100% of the estimated improvement cost as determined by the Township.
 3. In all cases, the Developer shall have the option of constructing the pedestrian way across the project site or depositing monies into the fund.

Monies from the pedestrian way fund are to be utilized from time to time by the Township for the orderly construction of the planned pedestrian ways within the Township.

- C. All sidewalks and driveway approaches between the lot line and the street curb, except crosswalks at intersections, shall be repaired and maintained by the abutting property owner and shall comply with all requirements set forth in this Ordinance.
- D. All sidewalks within the Township shall be kept and maintained in good repair by the owner of the land adjacent to and abutting upon it. If any owner shall neglect to keep and maintain the sidewalk along the front, rear or side of the land owned by him in good repair and safe for use of the public, the owner shall be liable to the Township for any damages recovered against the Township sustained by any person by reason of such sidewalk being unsafe and out of repair. If the owner fails to maintain the sidewalks along the front, rear or side of the land owned by him, the Township has the right to make all necessary repairs and assess the land owner.
- E. All pedestrian ways and sidewalks shall comply with Appendix A: Engineering Design Standards and the Township's Sidewalk Ordinance.

186.1700 Trees.

Sec. 86.1700. Please refer to the Zoning Ordinance and/or the Land Division Ordinance for size and spacing requirements of trees. The type and location of trees shall be approved by the Township.

186.1800 Distribution lines.

Sec. 86.1800. The Developer shall provide appropriate locations for all local distribution lines for telephone, electric, television, and/or 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 serve 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.

186.2000 PROCEDURE FOR PROCUREMENT OF A PERMIT FOR CONSTRUCTION OF SITE IMPROVEMENTS AND/OR PUBLIC UTILITIES

186.2101 General.

Sec. 86.2101. Except for agricultural purposes, or shall be unlawful for any person to begin the development of land or install Public Utilities within the Township without first obtaining a Permit for Construction.

186.2102 Procedure.

Sec. 86.2102. Any person desiring to proceed with the development of land or install Public Utilities shall apply for a Permit for Construction in accordance with the following procedure.

- A. *For projects where the construction contractor is engaged by the Township (or by the County Agent under contract with the Township).*
1. Where the construction contractor is engaged by the Township, or by the County Agency under contract with the Township, the contractor will not be required to acquire (or 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 at least as good as that existing at the time construction was begun.
- B. *For projects where the construction contractor is engaged by a public utility company other than the Township.*
1. The Public Utility Company shall prepare and present to the Township two copies of the plans and specifications for the proposed utility, whether it be an underground utility or an overhead utility (including a single pole relocation). The ‘Standard Utility Locations’ indicated in Appendix A: Engineering Design Standards should be utilized where possible. Furthermore, the Utility Company shall ascertain where the location (horizontally or vertically) may be in possible conflict with utilities proposed by the Township.
 2. The plan shall be reviewed by the Washington Township Department of Public Works to determine whether the proposal will conflict with present or future Township utilities.
 3. The Utility Company must submit any additional information deemed necessary and requested by the Township during the course of the plan review.
 4. Upon approval of the plans and specifications the Township will return one set of plans marked “approved” which shall be the Utility Company’s approval to commence construction so long as all other permits and licenses which may be required by other governmental agencies have been secured.
 5. The Township Water and Sewer Superintendent shall be notified of all times construction is taking place and the Township shall have the right to have an inspector present at all times that construction is taking place.
 6. The Utility Company is responsible for insuring that the Contractor restores all land and/or other physical features affected by the work to a condition at least as good as that existing at the time construction was begun.
 7. Within thirty days after completion of construction, the Utility Company shall provide one copy of as-built plans for the project to the Township. The as-built plans shall be signed and sealed by an Engineer, Registered in the State of Michigan.
- C. *For all other development projects.*
1. The Developer shall engage an Engineer, Registered in the State of Michigan, hereinafter called the Developer’s Engineer, who shall prepare plans and specifications for the proposed site improvements in

accordance with Appendix A: Engineering Design Standards adopted by the Township .

186.3000 VARIANCES

186.3101 Determination.

Sec. 86.3101. The Township Board may authorize a variance from the provisions of this Ordinance when it determines an undue hardship or practical difficulties may result from strict compliance with specific provisions or requirements of this Ordinance. In granting any variance, the Township Board may prescribe other conditions that it deems necessary or desirable for the public interest. No variance shall be granted unless the Township Board 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 Township;
- 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.

186.3102 Application.

Sec. 86.3102. 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.

180.4000 SCHEDULE OF FEES

Such fees shall be in accordance with a resolution of fees in effect at the time such plan review is requested, as approved from time to time by the Township Board.

186.4101 General.

Sec. 86.4101.

- A. Any person requesting a Water Supply Service Connection and/or a Wastewater Disposal Service Connection for any building, mobile home, dwelling unit, or premises to be served by such connection, shall first make application therefore. The application shall be accompanied by payment of all applicable fees and charges.
- B. The applicable fees for a Water Supply Service Connection include: (1) a Water Main Benefit Fee (subject to conditions covered under description below); (2) a Water System Benefit Fee; (3) a Water Service Installation Fee; (4) a Construction Inspection Charge; (5) a Water Meter Charge; (6) Construction

Water; (7) Water Turn On and Turn Off Charges and (8) all other applicable charges listed in the Utility Fees Schedule.

- C. The applicable fees and charges for a Wastewater Disposal Service Connection include: (1) a Sewer Main Benefit Fee (subject to conditions covered under description below); (2) a Wastewater System Benefit Fee; and (3) a Construction Inspection Charge.
- D. Application for connection shall be made for:
 - 1. New construction—prior to issuance of a building permit, or prior to issuance of a foundation/pad permit for a mobile home/
 - 2. Existing buildings or mobile homes—prior to connection to the Township System.
- E. In addition to the above requirements, it is intended that no water supply service or wastewater disposal service be furnished to any building unless a water meter is installed and operating. In the event a Township water supply connection is not available, payment for flow into the Township Wastewater Disposal System shall be based upon a minimum of 8,000 cubic feet of water consumption per year per capacity unit.
- F. Property owners outside of the Township may request to connect to the Township's Water and/or Sewer System(s) through an inter-governmental agreement. Property owners will also be required to pay the Water System Benefit Fee and/or the Sewer System Benefit Fee at the current rate. These properties will also be required to pay 2 times the water rate (usage and fees).

186.4102 Water Main Benefit Fee and/or Sewer Main Benefit Fee.

Sec. 86.4102.

- A. It is the policy of the Township that the Owner of any parcel of land, along or through which a Township Sanitary Sewer and /or Water Main has been installed, will be required to pay his fair share of the total project cost of said Utility, if: (1) One or more buildings, a mobile home park, or residential development is located (or is proposed to be located) on the parcel; (2) Said building(s), mobile home park, or residential development can connect to said Utility; and (3) A connection into said Utility is requested for said parcel.

Therefore, unless either (1) the parcel to be furnished a connection is included in a Special Assessment District under which said Utility was installed, or (2) the Utility was installed under written Agreement with the Township at the expense of the Owner of the parcel to be furnished, an applicant for a connection into a public water main shall pay a Water Main Benefit Fee and an applicant for a connection into a public sanitary sewer shall pay a Sewer Main Benefit Fee.

Notwithstanding anything to the contrary herein, each parcel abutting a previously installed water main or sanitary sewer financed by a special assessment against benefitted properties, and where said parcel was not included within the Special Assessment District, shall pay upon connection to the water and/or sewer system a Water Main Benefit Fee and/or Sewer Main Benefit Fee equal to the prorata assessment borne by properties included within the Special Assessment District.

Said Water Main Benefit Fee and/or Sewer Main Benefit Fee shall be increased by five (5%) percent on the third (3rd) annual anniversary of confirmation of the Special Assessment Roll and by an additional five (5%) percent on each and every annual anniversary thereafter.

- B. The total amount of the Water Main Benefit Fee and/or the total amount [of] the Sewer Main Benefit Fee shall each be computed as follows:
1. Determine the appropriate amount of parcel length benefited by the connection in linear feet and record such length (including an appropriate description of the parcel or building(s) connecting) on the Application. The appropriate length benefited shall be determined by one of the following methods:
 - a. If the parcel is occupied by or is proposed to be occupied by a mobile home park or residential development, or a nonresidential building or buildings;, the benefited length shall be calculated as the greater of:
 - i. The actual length of Utility traversing through the property,
 - ii. The sum of all parcel road frontage dimensions along which Utility connections have been requested,
 - iii. For irregularly shaped parcels, the typical parcel width measured parallel to the road frontage along which Utility connections have been requested.
 - b. If the parcel is occupied by or is proposed to be occupied by a single family residence, the benefited length shall be calculated as the lesser of:
 - i. The building's maximum plan dimension (out-to-out of the extremities of the building) plus 30 feet, not to exceed the actual width of the parcel measured at the face of the building paralleling the Utility,
 - ii. 120 feet.
 - iii. If a parcel pays a lateral benefit fee and then is split in the future any and all new parcels shall also be subject to a Water Main Benefit Fee and/or a Sewer Main Benefit Fee, subject to the above requirements.

In the event of a lot or parcel to be served is not rectangular, the maximum benefited frontage shall be determined by using the average width of the lot or parcel; but if the parcel depth is greater than 150 feet, use the average width as calculated between the front line and a line 50 feet behind the rear line of the building.

186.4103 Water System Benefit Fee and/or Wastewater System Benefit Fee.

Sec. 86.4103.

- A. Any building or premises, for which Township Water Supply Service and/or Township Wastewater Disposal Service is required, shall be charged a Water System Benefit Fee and/or a Wastewater System Benefit Fee respectively.
- B. The amount of either the Water System Benefit Fee or the Wastewater System Benefit Fee shall be based on a capacity unit factor system wherein a single family dwelling unit shall be considered one capacity unit. The total amount of either the Water System Benefit Fee or the Wastewater System Benefit Fee shall be computed as follows:
 - 1. Determine the total number of capacity units to be charged for a specific building by referring to the Table of Capacity Unit Factors in the Utility Fees Schedule. In no case shall the number of capacity units for any building be less than 1. The total number of capacity units assigned to a particular usage on any individual premises as computed from the table located in the Utility Fees Schedule shall be a whole number. Any fractional portion of a unit equal to 0.5 or more of one unit shall be considered as one additional unit.
 - 2. Multiply the above noted total number of capacity unit times the amount of the applicable system benefit fee charge rate (per capacity unit) as specified in the Utility Fees Schedule

186.4104 Water Service Installation Fee.

Sec. 86.4104.

- A. The Water Service Installation Fee is a fee to provide for the installation of the Water Supply Service Pipe from the main to the Curb Stop or Valve at the Customer's Water Supply Outlet. The amount of the fee shall be paid in accordance with the Water Service Installation Fee Schedule listed in the Utility Fees Schedule.

186.4105 Water Meter Charge.

Sec. 86.4105.

- A. The Water Meter Charge is a charge for the installation of a water meter. However, the water meter is, and shall remain, the property of the Township; and the Township shall maintain the meter in good operating condition at no expense to the customer; except that, if the meter is damaged as a result of failure by the customer to properly protect it, the cost of such damage shall be assessed against the customer.
- B. The Water Meter Charge shall be paid in accordance with the Water Meter Charge schedule listed in the Utility Fees Schedule.

186.4106 Construction Inspection charges.

Sec. 86.4106.

- A. For any construction of Customer's Water Service Pipe (including Private Water Supply Systems) and/or Customer's Service Sewers (including Private

Wastewater Disposal Systems), the Permit Applicant shall pay for the cost of Township Inspection of same.

- B. The amount of the Charges shall be paid in accordance with the requirements outlined in the Utility Fees Schedule.

186.4107 Water Supply Service Charges and/or Wastewater Disposal Service Charges.
Sec. 86.4107.

- A. Upon being furnished a water supply service connection and/or wastewater disposal service connection for any building, a Customer shall begin payment of service charges for same. The service charges are intended to pay for such items including (but not limited to) the customer's share of the following: meter reading; billing; collecting; accounting; water meter maintenance; a reserve fund to be used for payment for fire-fighting water; the Township's minimum water system and/or wastewater disposal system payment obligations; unaccounted for water use; unaccounted for sewage flow, including infiltration and/or inflow; and/or remaining operation, maintenance, and overhead expenses of the systems.
- B. The charges for Water Supply Service and/or Wastewater Disposal Service shall consist of a minimum monthly charge plus a charge based on water consumption. Except as otherwise provided herein, the volume of all water to be furnished from the Township Water Supply System to any person shall be measured by a water meter that is owned, operated, and controlled by the Department. For wastewater disposal service, the charges already recognize the fact that all water consumed does not necessarily reach the Wastewater Disposal System.
- C. The minimum monthly charge shall be applied to every customer connected to the Water Supply System and/or Wastewater Disposal System, whether the building being serviced is occupied or not occupied.
- D. The Department reserves the right to bill customers either monthly, bi-monthly or quarter-annually at its discretion.
- E. The Customer shall pay the Water Supply Service Charges and/or the Wastewater Disposal Service Charges in accordance with the Schedule(s) listed in the Utility Fees Schedule.

186.4108 Construction water usage charges.

Sec. 86.4108.

- A. Any water used for construction purposes, including water used to fill and/or test new water mains, shall be paid for by the user. No water shall be used without a Permit from the Superintendent; said Permit shall be granted only upon payment of minimum deposits and an agreement for payment for all water use.
- B. The Superintendent shall be responsible for establishing and publishing fair rates and deposit schedules needed to cover the cost of furnishing such construction water.

186.4109 Auditing Wastewater Disposal and Water Usage

Sec. 86.4109.

- A. The Department shall have the right to audit sewer and water usage and if the use of the building or premises increases, whether or not the owner changes, the Department shall have the right to re-calculate the Wastewater and Water System Benefit Fees and if the Capacity Units increase, shall charge the owner for the increase in fee. If the owner fails to pay the increase in charges, he will be assessed and the charges will be placed on his taxes.

186.5000 ORGANIZATION AND OPERATION OF DEPARTMENT OF PUBLIC WORKS

186.5101 One Department.

Sec. 86.5101. The Water Supply System and the Wastewater Disposal System, including all equipment, property, and employees in connection therewith, shall be known as the Washington Township Water and Sewer System and shall be operated under one department known as the Washington Township Department of Public Works. This Department shall be under the authority and control of the Township Board.

186.5102 Superintendent.

Sec. 86.5102. The Board shall appoint a Superintendent of the Department of Public Works to manage the Systems and the Department who, in turn, shall hire such other employees with the approval of the Board as may be necessary for the proper operation of the Department. The Superintendent shall have direct responsibility and authority to control the operation of the Department and the maintenance of the System and shall supervise the installation of connections, extensions, and improvements to the System, or as financed by someone other than the Township. The Superintendent is the enforcement officer of this ordinance.

186.5103 Treasurer.

Sec. 86.5103. The Township Treasurer shall be responsible for all money received for the operation of the System and shall keep an accurate separate account for the Department.

186.5104 Changes in system; special assessment districts.

Sec. 86.5104. Any connections to, extensions of, or changes in, the sewer and water system for which the Township participates in any degree in the cost thereof, shall be made only upon approval of the Board. Requests for determination of reasonable and logical special assessment districts for extensions of the sewer and/or water system shall be addressed to the Board which will thereupon consider same and advise the petitioners of its decision. If a special assessment district is to be initiated, the Board shall then stipulate the portion of the cost to be borne by the petitioners and the portion, if any, to be borne by the sewer and water system.

186.5105 Fees.

Sec. 86.5105. Fees for various benefits and services are established as indicated in the Utility Fees Schedule. The Utility Fees Schedule may be amended and/or modified separately from, and without changing the effectiveness of, the main body of this Ordinance. The Superintendent has the authority to make a determination when such fees may or may not be applicable.

186.5106 Discontinuing water service.

Sec. 86.5106. The Township shall have the right to shut off and discontinue the supply of water to any premises; or disconnect such premises from the water supply system, the drainagewater disposal system, or the wastewater disposal system of the Township upon: violation by the user of the system of any provision of this Ordinance; and in the event of non-payment, when due, of water supply and/or wastewater disposal charges, or to protect the health, safety, and welfare of the public. Whenever the water is turned off from any premises because of such violation, it shall not be turned on again until the owner or occupant has corrected such violation or health and safety issue and has paid a "turn-on charge" as stipulated in the Utility Fees Schedule, to cover the expense caused by such disruption and return of water supply service.

186.5107 Township liability.

Sec. 86.5107. The Township shall not be held liable for any failure or deficiency in the supply of water to consumers, whether occasioned by shutting off the water to make necessary repairs or connections, or for any other cause.

186.5108 Charges, lien.

Sec. 86.5108. Charges for water supply and/or wastewater disposal service and/or outstanding invoices shall constitute a lien on the property served, and if not paid within six months after the due date, the amount of the deficiency shall be certified by the Township Treasurer on or before March 1st of each year, which amount shall be placed on the next general tax roll to be collected as part of the general Township taxes as provided by Section 21 of Act 94, P.A. of 1933 as amended.

186.5109 No free service.

Sec. 86.5109. No free service shall be furnished by the Department to any person, nor to any public or governmental agency. The Township shall pay to the Department of Public Works account for all water supply and/or wastewater disposal services provided to it or any of its department (except for the Department of Public Works for the maintenance and operation of the water and sewer systems) at the established current rates for such services.

186.5110 Revenues; funds, transfer.

Sec. 86.5110. All revenues of the sewer and water systems shall be set aside, as collected, and deposited in a separate depository account in a bank duly qualified to do business in Michigan; said account shall be designated "Sewer and Water System Receiving Fund" (hereinafter referred to as the "Receiving Fund"). For budgeting and

rate-setting purposes, accounting records that identify sewer system revenues separately from water system revenues shall be kept. Said Receiving Fund Revenues shall be periodically transferred from the Receiving Fund in the manner, and at the times, as follows:

A. Out of the revenues of the Receiving Fund there shall first be set aside, quarterly, into a separate account designated the "Operation and Maintenance Fund" (hereinafter referred to as the "O & M Fund") a sum sufficient to provide for payment of the next quarter's anticipated expenses of the sewer and water systems as are considered necessary to preserve the same in good repair and working order; such expenses include: operation, maintenance and administration of each system plus payments made for wastewater disposal and water supply purchase. For budgeting and rate-setting purposes, accounting records that identify sewer system expenses separately from water system expenses shall be kept. The Township shall set rates and charges to the effect that: (a) water supply system rates and charges are sufficient to cover the portion of O & M costs caused by the water supply system customers; and (b) wastewater disposal system rates and charges are sufficient to cover the portion of O & M costs caused by the wastewater disposal system customers.

B. To this end, the Superintendent shall annually analyze the past year's costs for each system and recommend a separate budget for each system for the ensuing year to the Board.

186.5111 Sufficiency of user charges and rates.

Sec. 86.5111. The Township Board shall periodically review the schedule of charges set forth in the Utility Fees Schedule and shall amend them as necessary to obtain revenues fully sufficient to provide for the expenses of the System. The Board shall cause to be performed an annual audit or other financial surveillance of the schedule of charges set forth in the Utility Fees Schedule to facilitate periodical adjustment of the user charges and user rates to maintain proportionality in the system.

186.5112 Construction Standards.

Sec. 86.5112. The size, location, and/or materials of construction to be used for the Water Supply Facilities (including Building Service Water Supply Pipe) and the Drainagewater and Wastewater Disposal Facilities (including Building Service Sewers) shall be indicated in Appendix A: Engineering Design Standards, attached to and made part of this Ordinance. Appendix A: Engineering Design Standards may be periodically amended and/or modified separately from, and without changing the effectiveness of, the main body of this Ordinance, the Township Board shall periodically review the contents of Appendix A: Engineering Design Standards and may amend them as necessary to stay abreast of good municipal sewer and/or water supply system construction standards.

186.5113 Inspection.

Sec. 86.5113. All water supply pipe and wastewater sewers, located outside of buildings, that are expected to be connected with the Township Sewer and Water System

as well as any drainagewater sewers and drains shall be installed under the detailed inspection of the Superintendent or a designated representative.

186.5114 Operating Year.

Sec. 86.5114. The Department of Public Works shall be operated on the basis of an operating year commencing on April 1st and ending on March 31st.

186.5115 New sanitary sewer connections.

Sec. 86.5115. No new sanitary sewer connections will be permitted when the agreed upon maximum rate of flow is reached.

186.5116 Delinquent Account Service Charges.

Sec. 86.5116.

- A. Whenever any payments are due the Township (for any deferred charged rendered under this Ordinance), the Township shall tender a dated invoice (or bill) for same. If the bill remains unpaid for a thirty day period beginning from the date of such bill, there shall be added to this Customer's Account, as of the last day of this thirty day period, a Delinquent Account Service Charge.
- B. The Delinquent Account Service Charge shall be equal to ten (10%) percent of the current billing and shall be added at the time of the assessment of such charges.

186.6000 VARIANCES

186.6101 Conditions for granting.

Sec. 86.6101. The Township Board 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 Board may prescribe other conditions that it deems necessary or desirable for the public interest. No variance shall be granted unless the Township Board 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 Township.
- 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.

186.6102 Application.

Sec. 86.6102. 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.

186.7000 ENFORCEMENT AND PENALTIES FOR FAILURE TO COMPLY WITH THIS ORDINANCE

186.7101 Penalty.

Sec. 86.7101. Any person who violates the provisions in this Ordinance shall be guilty of a misdemeanor and, upon conviction thereof, shall be subject to a fine not exceeding five hundred dollars or ninety (90) days in the Macomb County Jail, or both.

186.8000 SEVERABILITY

186.8101 Severability

Sec. 86.8101. If any section, paragraph, clause, or provision of this Ordinance is for any reason held to be invalid, or unconstitutional, the invalidity or unconstitutionality of such section, paragraph, clause, or provision shall not affect any of the remaining provisions of this Ordinance.

186.9000 EFFECTUATION

186.9101 Repeal.

Sec. 86.9101. All resolutions, ordinance, or parts thereof, in conflict with the provisions of this Ordinance are, to the extent of such conflict, hereby repealed.

186.9102 Publications; effective date.

Sec. 86.9102. A true copy of this Ordinance shall be posted in the Office of the Township Clerk and on the Township's website. A notice of the posting describing the purpose or nature of the Ordinance posted and the location of the places where the Ordinance is posted shall be published at least once in a newspaper of general circulation in the Charter Township of Washington within seven (7) days of the posting.

**APPENDIX A: ENGINEERING DESIGN STANDARDS
CHARTER TOWNSHIP OF WASHINGTON**

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**CHARTER TOWNSHIP OF WASHINGTON
ENGINEERING DESIGN STANDARDS**

SECTION 1.0 – PROJECT PROCESS OVERVIEW

These Engineering Design Standards are intended to provide a reasonable and proper basis for the design and construction of subdivision and other project site improvements, including sanitary sewer, water main, storm water management, paving, etc..

The Charter Township of Washington Standard Details and Specifications shall be considered a part of the Design Standards.

All improvements to vacant land, expansions and/or modifications to existing developed parcels, and improvements or extensions to water main systems, sanitary sewers, storm water management systems, mass grading, landscape and retaining walls and paving require the review and approval of detailed engineering design plans prior to the issuance of permits and start of construction.

This standard establishes the basic submittal, review and permit processing procedures in the Township.

1.1 SITE PLAN REVIEW

Please refer to the Township’s Zoning Ordinance for Site Plan review process and the Land Division Ordinance for the Plat review process.

If the Developer receives approval from the Planning Commission and/or Township Board, the Developer shall then submit plans for review of Engineering/Construction Plans and Specifications under 2.3 of the Engineering Design Standards.

1.2 CONSTRUCTION/ENGINEERING PLAN REVIEW

1. Upon completion and approval of the Site plan, the Developer/Applicant shall make an application for a Plan Review on a form furnished by the Township. All applicable materials shall be submitted to the Township Department of Public Works as part of this Application, the Developer shall submit the following to the Department of Public Works:
 - a. Five (5) sets of signed and sealed Engineering Design Plans with applicable Township Standard Detail Sheets and project specific details. 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.

- b. Five copies of the Sanitary Sewer Basis of Design (gravity or low pressure sewer).
 - c. The calculations for volume, outlet restrictor size, sediment loading, percolation rates, etc. for detention/ retention/infiltration storm water management systems.
 - d. Drainage district maps showing the various areas contributing to the points of inlet and total area drained (including off-site contributions).
 - e. Soil boring logs and geotechnical report.
 - f. Detailed storm sewer/open drain calculations.
 - g. All wetlands are to be delineated by a qualified wetland specialist. The Township will verify all of the wetland delineations. If there is a question or a discrepancy between the Township and the applicant on the status of a wetland, a determination will be required to be made by the Michigan Department of Natural Resources and Environment.
 - h. Delineation of floodplain boundaries unless determined unnecessary by Township and application for Flood Plan Development permit, if necessary.
 - i. A construction cost estimate shall be supplied in sufficient detail to enable the Township to review the construction estimate for all proposed work as outlined in the construction application permit.
 - j. A cash payment, computed according to the schedule indicated in the Utility Fees Schedule, to cover the cost of the Plan Review and Administrative Fee.
 - k. Application for tree removal and soil removal permits, if necessary.
 - l. Other information/calculations pertinent to the project and all information required under these Engineering Standards.
2. Upon engineering plan approval, the applicant is responsible for obtaining all necessary permits; please refer to the permits section of these Engineering Standards. Applicant is responsible to submit the changes requested by any state or county agency back to the Township for approval.

3. In granting approval of the plans, it shall be understood that the approval of such plans be in effect for only one year and the approval may be renewed, subject to the amendment of such plans by the addition of current construction detail sheets, standards, and/or construction specifications as applicable.
4. Required easements shall be submitted and reviewed to the Department of Public Works for review and approval by the Township's Engineer and Attorney.
5. Prior to the start of construction, the applicant shall submit the following to the Department of Public Works:
 - a. eight (8) sets of approved engineering plans.
 - b. inspection fees based on percent of construction costs.
 - c. required insurance for the underground contractor; please refer to insurance requirements in these standards.
 - d. all necessary bonds; please refer to the bond requirements in these standards.
 - e. required as-built/record drawing deposit.
 - f. pays for Water and Sewer frontage fees, if applicable.
 - g. sewer cleaning deposit, if applicable.
6. Upon receipt of all required items listed in paragraph 4 above, a pre-construction meeting shall be held. The required attendees shall be determined by the Township's Department of Public Works.
7. The applicant may apply for building permits upon receiving all required permits, off-site easements, attending a pre-construction meeting, and receiving a Permit for Construction from the Department of Public Works.

1.3 FINAL ACCEPTANCE

The following items shall be conditions of final project acceptance:

1. The applicant completed the site improvements as approved by the Township with required inspection.

The applicant submits as-builts/record drawings and final easements to the Department of Public Works for review. As-built/record drawing shall meet the requirements in these standards.

3. Upon approval of the as-builts/record drawings and easements, the Water and Sewer Superintendent or his designated representative shall give the applicant approval to proceed.
4. The applicant shall submit Master Deed for review to the Department of Public Works, if applicable.
5. The applicant shall address any outstanding construction issues required by the Department of Public Works.
6. The applicant shall deposit acceptable Maintenance and Guarantee bonds; please refer to bonding requirements in these standards.
7. The applicant shall submit recorded easements documents to the Department of Public Works.
8. Applicant applies for all necessary building permits from the Building Department.
9. Site review by the Developments Committee.
10. All off-site areas disturbed during construction shall be restored to original condition.
11. Certificate of Occupancy by the Building Department.

SECTION 2.0 – PLAN REQUIREMENTS

2.1 SITE PLAN REVIEW REQUIREMENTS

1. For site plan review requirements, please refer to Article 3 of the Washington Township Zoning Ordinance.

Complete improvement plans shall be submitted prior to review and approval of any portion thereof.

3. Plans submitted shall be on 24"x 36" white prints having blue or black lines and shall be neatly and accurately prepared. Good engineering judgment should be exercised in the design, layout and presentation of proposed improvements.

4. Street names, lot or property lines, and property identification numbers shall be shown on all plans.
5. Depending on the scope of work, the following engineering related items are to be incorporated in the plans or submitted as applicable to the project:
 - a. Preliminary calculations for volume, outlet restrictor size, sediment loading, percolation rates, etc. for detention/ retention/infiltration storm water management systems.
 - b. Preliminary drainage district maps showing the various areas contributing to the points of inlet and total area drained (including off-site contributions).
 - c. All existing utilities shall be shown on the plans.
 - d. Other information/calculations pertinent to the project or requested by the Township.
6. The Township Engineer shall check the plans and related material for conformity to the standards set forth herein and to the overall utility plans of the Township after which he/she will return one (1) set with the appropriate comments to the applicant and retain one (1) set for records.
7. The applicant, after making any revisions recommended on the set returned to him/her, shall submit two (2) sets of revised plans and related material to the Planning Department for transmission to the Township Engineer for final review and/or approval.

2.2 CONSTRUCTION/ENGINEERING REVIEW REQUIREMENTS

GENERAL

This standard establishes the minimum requirements for engineering plans for submittal to the Township.

Prior to starting any design, the design engineer is encouraged to make use of maps and information available at the Township and County offices. It shall be the responsibility of the design engineer to verify utility locations provided by the Township, Macomb County or other agencies.

PLANS AND SPECIFICATIONS

The plans and specifications shall be prepared under the supervision of a Civil Engineer registered in the State of Michigan and the plans shall have imprinted thereon the seal of that engineer.

Plans shall consist of a title sheet, plan and profile, project specific notes and details, and standard detail sheets. Sheet size shall be 24" x 36", minimum scale of 1" = 50' horizontal and 1" = 5' vertical for plan and profile sheets (an overall development and/or utility layout plan may be at 1" = 100'). Details specific to the project shall be drawn at scale.

Engineering plans shall be in compliance with these Engineering Standards.

A copy of the site boundary survey with computed control lines indicated, or a copy of the computed plat, if applicable, shall be submitted with the engineering plans. Boundary surveys shall comply with Act 132 requirements.

1. TITLE SHEET

A title sheet, or the first sheet of a set of plans, shall show the following:

- a. Project Title.
- b. Name, address and phone number of proprietor.
- c. Name, address and phone number of designing engineer.
- d. The seal and signature of engineer responsible for the project.
- e. Location map drawn to an appropriate graphic scale, generally not greater than 1" = 100' nor smaller than 1" = 2000', with North indicator, showing location of project area with respect to the surrounding area.
- f. Reference bench marks, established at intervals not greater than 1,200 feet and on NAVD88 Datum, convenient to the proposed construction. Each benchmark shall be noted with number, location, description and established elevation. A minimum two bench marks shall be provided.
- g. Name of the Township.
- h. Legal description of the property.
- i. Address of the property, if available
- j. Legend.

- k. Plan completion date.
- l. Dates of submittals and revisions.
- m. Sheet Index.
- n. Quantity List of Public Improvements.

GENERAL ITEMS

- a. All elevations shall be on NAVD88 datum.
- b. As a minimum, plan sheets shall include:
 - i. North arrow.
 - ii. All easement
 - iii. Existing topography and proposed ground contours. Superimposed on a general plan of the site shall be contour lines of the project area, including the area at least one hundred (100) feet outside of the project area. Contour lines shall be shown at intervals as follows:
 - 1. Where the general slope of the land is one (1) percent or less, the interval shall be one (1) foot.
 - 2. Where the general slope of the land is more than one (1) percent, but less than five (5) percent, the interval shall be two (2) feet.
 - 3. Where the general slope of the land is five (5) percent or greater, the interval shall be five (5) feet.
 - iii. Plans shall have all lettering a minimum height of eight-hundredths of an inch and be of such quality as to provide for clear and legible plans.

3. SOIL EROSION AND SEDIMENTATION CONTROL PLANS

Can be incorporated with Drainage Area plan sheet or other appropriate construction plan.

- a. As a minimum, sheets shall include:

- i. Location, types and details of perimeter and on-site sediment and erosion control methods.
- ii. An erosion control and construction sequence schedule.
- iii. Location and details of mud mats.
- iv. Location, dimensions, surface material and thickness, method of containment, and restoration of construction staging and equipment and material storage areas.
- v. Construction sediment basins (when indicated on the plans or required due to site conditions):
 - 1. Location of basin.
 - 2. Calculations for the size of the basin and amount of sediment loading.
 - 3. Method and/or location of conveying site runoff to the basin and erosion control measures along drainage route.
 - 4. Location, cross-section, and details of access route to basin for periodic dredging and maintenance.
 - 5. Maintenance schedule for removing accumulated sediment. Note indicating method and location of disposal of sediment basin soils.
 - 6. Location and detail of basin outlet filter.
 - 7. Location and elevation of emergency spillway.
 - 8. Location and detail of temporary security fencing.
 - 9. Plan or description for the removal of the temporary basin and restoration of the affected area once permanent control devices and stabilization are in place.
- b. The following Erosion Control Standard Notes” shall be placed on the soil erosion and sediment control plans:
 - i. All erosion and sedimentation control work shall conform to the current standards and specifications of the Macomb County Drain Commissioner and the Charter Township of Washington.

- ii. Daily inspections shall be made by the Contractor for effectiveness of erosion and sedimentation control measures. Any necessary repairs shall be performed without delay.
- iii. Erosion and any sedimentation from work on this site shall be contained within the work area and not allowed to collect on any off-site areas or in waterways. Waterways include both natural and man-made open ditches, streams, storm drains, lakes, ponds and wetlands.
- iv. The Contractor shall apply temporary erosion and sedimentation control measures as directed on these plans and where otherwise required by the work. The Contractor shall remove temporary measures as soon as permanent stabilization of slopes, ditches, and other changes have been accomplished.
- v. Soil erosion control practices will be established in early stages of construction by the Contractor. Sediment Control Practices will be applied as a perimeter defense against any transporting of dirt off the work area.
- vi. The Contractor shall preserve off-site natural vegetation as much as possible.
- vii. Protect all existing trees, including their branches and roots, from damage due to this work unless specifically identified for removal.
- viii. Stabilization of all disturbed areas shall be established using the appropriate vegetation within 5 days of completion of final grading.
- ix. The Contractor shall sweep the existing streets surrounding the project site as needed.
- x. The Contractor shall be responsible for dust control and shall provide all equipment and material to keep dust in check at all times. The Contractor shall respond immediately to any and all complaints.
- xi. The Contractor shall be responsible for obtaining the NPDES permit and ensuring compliance with all applicable permit regulations, including but not limited to, inspection, restoration and record keeping requirements. Reports from the Certified Storm Water Operator shall be made available to the Township.

4. GRADING PLANS

- a. As a minimum, plan sheets shall include:
 - i. Centerline of street stationing with centerline or top-of-curb elevations at 50-foot intervals.
 - ii. Existing and proposed ground elevations shall be provided at all lot corners along the boundaries of the development and 50 foot intervals along all site boundary lines.
 - iii. Street names, street widths, subdivision names, lot numbers, and permanent parcel numbers for all unplatted parcels for the site and adjacent properties.
 - iv. Floodplain contour line, where applicable.
 - v. Wetland limits, where applicable and the name of the consultant that flagged the wetland limits.
 - vi. All proposed and existing storm drainage facilities, storm sewers, manholes, catch basins and inlets including rim and end section finish grades, and all existing and proposed utility structures (i.e., sanitary manholes, hydrants, etc.) with rim or finished grade elevations and invert elevations to one hundredths of a foot.
 - vii. Proposed top of curb or shoulder elevation opposite each front lot corner to hundredths of a foot.
 - viii. Finish grades are to be placed in rectangular boxes drawn to dimensions comparable to a typical house to be built in the development. A box shall be placed on each proposed lot according to the front yard setback. Indicate walkouts (w/o) on rectangle box.
 - ix. Proposed ground elevation at each lot corner (front and rear), and side lot elevations between houses to tenths of a foot.
 - x. Provide sidewalk elevations at all lot corners to one hundredths of a foot. The slope across walk shall be noted as 2%.
 - xi. Provide elevations for pavement, sidewalks, parking islands and other locations as required by the Township Engineer.
 - xii. When swales for lot drainage are called for on the plan, swale elevations at the high point adjacent to the house, the back of the house, and the front of the house shall be provided. General flow direction of swales shall be shown with arrows.

- xiii. Drainage flow arrows shall be provided to indicate the direction of surface water drainage over the development.
- xiv. In residential developments each grading plan sheet shall contain a note indicating the location of footing drain/sump pump discharge.
- xv. Indicate rear yard catch basins where required. The proposed rim shall be shown to the nearest hundredths of a foot. Catch basins are required to be placed at a lot corner and the catch basin elevation shall be the only proposed elevation shown at that corner.

5. PAVING PLANS

- a. The plan portion of the sheet shall include, at a minimum:
 - i. Street names, street and easement widths, subdivision names, lot numbers and frontage dimensions, for all unplatted parcels.
 - ii. Location of existing and proposed utilities crossing or within proposed right-of-way.
 - iii. Existing adjacent streets.
 - iv. Type of paving.
 - v. Radii of all curves.
 - vi. Construction notes.
 - vii. A tabulated list of quantities appearing on that sheet.
 - viii. Sidewalks and approaches.
 - ix. Proposed public street approaches with alignment and dimensions.
- b. The profile portion of the sheet, when applicable, shall appear below the companion plan portion, generally projected vertically, and shall show at least the following:
 - i. Existing and proposed centerline.
 - ii. Proposed top of curb.
 - iii. Proposed storm sewer and or ditch.

- iv. Existing storm sewer facilities.
 - v. Stationing were applicable.
 - c. Cross-sections shall be provided with the following information:
 - i. Paving type, thickness and specification.
 - ii. Base type, thickness and specification.
 - iii. Pavement width, crown and cross-slope.
 - iv. Curb section (where applicable).
 - v. Subgrade treatment.
6. PLAN AND PROFILE SHEETS (SANITARY, WATER MAIN & STORM)
- a. Each plan and profile sheet shall include a tabulated list of quantities appearing on that sheet.
 - b. Structures shall be identified by numbers assigned consecutively and increasing in direction opposite to direction of flow in each sewer.
 - c. The plan portion of sheet shall include, at minimum:
 - i. All existing or planned surface or underground improvements in streets or easements in which sewer construction is proposed, and in adjacent areas if pertinent to design and construction.
 - ii. Street names, street and easement widths, subdivision names, lot numbers, lot dimensions, and parcel numbers and frontage dimensions for all unplatted parcels.
 - iii. Location, length, size, slope and direction of flow of each section of proposed sewer between manholes.
 - iv. Natural or man-made features such as drainage courses, county drains, lakes, wetlands and floodplains.
 - v. Locations of all manholes, air release valves, intermediate flushing connections, branch flushing connections, terminal flushing connections and other sewer appurtenances and special structure.
 - vi. Existing pipe inverts involved in the project.

- vii. House leads, wye branches or tee inlets, to be constructed with the proposed sewer, with locations at easement and/or property lines.
 - viii. Limits of special backfill requirements.
 - ix. A note stating that the Contractor shall adjust existing manhole covers, as required.
- d. The profile portion of sheet shall appear below companion plan portion, generally projected vertically, and shall show at least the following:
- i. Size, length, slope, type and class of pipe, and bedding for each section of proposed sewer between structures.
 - ii. Limits of special backfill requirements.
 - iii. Profile, over centerline of proposed sewer, of existing and proposed finished ground and pavement surfaces.
 - iv. Location of existing and proposed utilities crossing the line of the sewer or otherwise affecting sewer construction, with a note of caution.
 - v. Location of all proposed structures, with structure number, invert elevation/direction of all connecting pipes, top of casting elevation, and structure type.
 - vi. Location of all house leads and wye branches to be constructed with the proposed sewer.
 - vii. Length of risers.
 - viii. Invert elevation at property line or easement line for house leads to be included with sewer construction.
 - ix. A note stating that the Contractor shall verify the location and elevation of existing utilities prior to construction.

6. **STORM WATER MANAGEMENT BASINS AND PRETREATMENT SYSTEMS**

- a. Storm water management basins and/or pretreatment systems can be placed on the storm drainage plan and profile sheets or on a separate plan sheet.

- b. Design calculations for detention/retention basin volumes required and provided, sediment loading calculations, basin outlet restriction, and a plan of the drainage area tributary to the basin shall accompany construction plans submitted for review.
- c. For all open detention/retention basins, indicate the top-of-bank, high water and bottom of pond elevations, and side slopes. Provide location, elevation and details of basin outlet restriction and emergency overflow spillway or manhole for detention basins.
- d. For enclosed detention basins, provide high water and bottom of system elevations, cross-section or profile of system; location, elevation and details of outlet restrictor, and method of providing for emergency overflows.
- e. For infiltration (recharge) systems, provide soil boring logs and soils analysis, volume requirements, percolation rate, infiltration/exfiltration design calculations, cross-section or profile of system, and method for handling emergency overflows caused by rainfall in excess of the design storm event or failure of the infiltration/exfiltration medium. Soil boring for retention basins also to show ground water level, and soil types.
- f. For open basin pretreatment systems, provide storage volume calculations, top of bank, high water and basin bottom elevations, side slopes, location of emergency overflow, details of outlet control, and maintenance schedule.
- g. Cross-section of basin side slopes, top of bank/basin bottom elevations, inlet/outlet elevations, and water surface elevation/depth of storage.

7. DETAIL SHEETS

- a. The Sanitary Sewer, Water Main, Soil Erosion, and Storm Sewer Standard Detail sheets as adopted by Washington Township shall be considered as a part of these design standards and shall be included as part of the construction plans. A reproducible copy of these details may be obtained from the Township..
- b. Detail sheets shall include complete details for all sewer appurtenances and structures to be included with the sewer construction.

- c. Scales for special details shall be selected to clearly portray intended construction and component or equipment arrangement. Scales used shall be clearly identified.

SECTION 3.0 –STANDARD UTILITY LOCATIONS

The Schedule of “Standard Utility Locations” are as follows:

Subject utility	Existing and new streets Location of utilities from centerline (1)				
	60' ROW (28' pvmt with curbs) (2)	86' ROW (36' pvmt with curbs) (2)	86' ROW (44' pvmt with curbs) (2)	120' ROW (58' pvmt with curbs) (2)	
Sanitary Sewer (3)	29 L	35 L	37 L	44 L	
Storm Sewer	19 L	25 L	27 L	34 L	
Gas	18 R	27 R	31 R	34 R	
Hydrants	20 R	24 R	28 R	36 R	
Water Main	22 R	22 R	26 R	42 R	
Second Sanitary Sewer (3)	--	35 R	36 R	66 R	
Second Water Main (or storm drain)	--	--	--	54 L	
DE—MBT (underground)	--	--	--	52 R	
DE—MBT (overhead)	31 R	44 R	44 R	61 L/R	
Curb radius at intersections	20'	25'	25'	30'	

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 Superintendent with the concurrence of the Road Commission when appropriate. Where, in the opinion of the Superintendent, 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 may be installed in twenty feet wide easements adjacent to street rights-of-way in lieu of these locations if approved by the Superintendent—in this event the storm sewer location for 60' R.O.W. (28' Pavement) may be moved to 19'L.

- 4) R.O.W. shall be right-of-way for all public streets and easements for all private streets.
- 5) The Water and Sewer Superintendent may allow variations from the above referenced table on a case-by-case basis, only if, it is not possible to construct utilities in said location.

SECTION 4.0 – WATER MAIN

4.0 GENERAL

This standard establishes the minimum requirements for the design of water main in the Township.

4.1 DESIGN CONSIDERATIONS

1. GENERAL

- a. Water mains shall be looped whenever possible or at the discretion of the Water and Sewer Superintendent or his designated representative.
- b. Water mains in new developments shall be installed from boundary to boundary in abutting roads and interior streets, and at other locations as may be deemed necessary by the Township for future extensions.
- c. All water mains shall be installed with a minimum cover of 5-1/2 feet below finish grade. Whenever water mains must dip to pass under a sewer or other obstruction, the sections that are deeper, shall be kept to a minimum length by the use of vertical 11-1/4 degree bends properly anchored.
- d. A 5-1/2 foot minimum horizontal clearance at all open drain crossings is required between the bottom of the drain and the top of the water main.
- e. The minimum separation (barrel to barrel) of water main to sewers shall be ten (10) feet horizontal and eighteen (18) inches vertical.
- f. Where water main is constructed in pavement areas or within a one-on-one influence of pavement, compaction of backfill to 95% maximum density is required and shall be tested by an independent laboratory.
- g. Where the water main crosses another utility, provide Class II backfill material in twelve (12) inch compacted lifts to the top of the higher utility.

- h. All water mains shall be designed for 150 p.s.i. minimum working pressure.
- i. Concrete thrust blocks or other approved restraint systems shall be provided at all bends, tees, hydrant shoes, at plugs and caps and at any crosses where necessary to prevent lateral movement of the pipe. Thrust blocks shall bear against undisturbed earth and shall have sufficient bearing area to develop the full resultant axial thrust of the pipe at test pressure.
- j. No house or hydrant leads shall be made to a transmission main 16" or larger without approval of the Department of Public Works.
- k. All water main shall be shown on the plan view. All sewers and those water mains having a diameter of twelve (12) inches or greater shall be indicated in profiles. There shall be a separate 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.
- l. In the profile view, all crossings of utilities must be shown. When a water main crosses a sewer, the top of pipe elevation of the water main shall be indicated. Minimum vertical clearance between utilities shall be 18 inches. Compacted sand backfill is required between utilities. Exceptions may be considered if there is no alternative at the discretion of the Water and Sewer Superintendent or designated representative.
- m. The current Washington Township Standard Details must be included with the plan set.
- n. The plan shall indicate the proposed finished grade elevations of all hydrants, gate wells, stop boxes and/or other structures and, where a public main or hydrant is not located in a public street, shall show an easement for the mains and hydrants.
- o. The type, capacities, location, and layout of a building service water supply pipe shall comply with all requirements of the Township, the Macomb County Health Department, and the State of Michigan.
- p. The type of pipe and joints indicated on the plans shall be in accordance with the currently adopted Township Standards.

DESIGN FLOWS

The Design Engineer shall arrange a meeting with the Township Engineer Superintendent, and the Fire Chief to discuss specific fire protection needs.

- a. Single Family Residential- Water mains shall have the ability to provide a fire demand of at least 1,200 gallons per minute at 20 p.s.i. residual for a period of 1 hour. Design calculations shall be furnished upon request to the Township.
- b. Multiple Family and Institutional- Water mains shall have the ability to provide a fire demand of at least 2,000 gallons per minute at 20 p.s.i. residual for a period of 1 hour in multiple family, institutional, and school areas. Design calculations shall be furnished upon request to the Township.
- c. Commercial & Industrial- Water mains shall have the ability to provide a fire demand of at least 3,000 gallons per minute at 20 p.s.i. residual for a period of 1 hour in commercial, industrial, office and shopping center developments. Design calculations shall be furnished upon request to the Township.

3. MINIMUM SIZE

- a. Single Family Residential-Water mains within new single family residential developments shall be eight (8) inches in diameter minimum or larger as design dictates.
- b. Major Roads- Water mains within major roads shall be minimum 12 inches in diameter. Larger mains will be required as indicated on the Township's Water main Master Plan.
- c. Commercial & Industrial- Within commercial, office, industrial and multiple family residential developments, 12 inches in diameter water main is considered to be the minimum, except in a looped system of 1,500' or less where 8 inches in diameter mains may be permitted.

4. PIPE MATERIALS

- a. The following are the required pipe materials for public water main in the Township. Any proposed pipe material alternatives shall be approved by the Water and Sewer Superintendent or his designated representative.

i. Private water services: material is subject to the approval of the Washington Township Department of Public Works Superintendent or his designated representative.

ii. Public water main 8" – 12" shall be:

Ductile Iron, Class 54 with rubber gasket push on type joints;
ANSI A21.51; AWWA C151

iii. Public water Main 12" & 16" shall be:

Ductile Iron, Class 54 with rubber gasket push on type joints;
ANSI A21.51; AWWA C151 or

Prestressed Concrete lined cylinder pipe, AWWA 301 with
rubber gasket and steel joint ring.

iv. Public water main 24" and larger shall be:

Ductile Iron, Class 54 with rubber gasket push on type joints;
ANSI A21.51; AWWA C151 or

Prestressed Concrete embedded cylinder pipe, AWWA C301
with rubber gasket and steel joint ring.

v. Building Service Water Supply Pipe may be any of the following materials:

1. Service pipe 2" diameter and smaller:

a. On the supply side of a water meter: Copper type "K" pipe.

b. On a customer side of a water meter: Poly Vinyl Chloride (P.V.C.) pipe, rubber gasket push on type joints or copper type "K" pipes.

2. Service Pipe over 2" diameter: Ductile Iron Pipe with rubber gasket push on type joints (Note: Next size above 2" must be 4", no intermediate sizes are allowed)

5. VALVES AND GATE WELLS

a. General

i. When connecting to an existing water main, a tapping sleeve, gate valve and well will be required unless connection to the existing

water main can be made without interrupting service. Only mechanical joint tapping sleeves shall be used.

- ii. All valves 8" and greater shall be installed in a gate well.

b. Location

- i. In single family residential areas, valves shall be arranged so that no single water main failure will require more than 1,000 feet of water main, not more than 26 homes and not more than two (2) hydrants to be out of service.
- ii. In multiple housing, commercial and industrial areas, valves shall be so arranged that no single water main failure will require more than 800 feet of water main or more than one (1) hydrant to be out of service.
- iii. Valves shall be so arranged that any section can be isolated by closing not more than four (4) valves.
- iv. Valves shall generally be located at street intersections, and such that the gate well structure cover will clear sidewalks, five (5) feet from the intersecting street right-of-way line.

6. HYDRANTS

a. General

- i. Spacing of hydrants around multiple family, institutional, commercial and industrial areas shall be considered as individual cases and the design engineer is encouraged to arrange a meeting with the Township Engineer, the Superintendent of the Department of Public Works and the Fire Chief to review specific fire protection requirements. The Fire Chief shall have final approval for number and arrangement of hydrants.
- ii. Hydrant valve shall face the road.
- iii. Hydrant leads shall be six (6) inch diameter minimum with a maximum length of 35 feet. Hydrant leads longer than 35 feet must be eight (8) diameter and have an eight (8) inch gate valve and well installed at the tee.
- iv. Hydrants shall be plumb and set to grade before final acceptance.
- v. No service leads are allowed to extend from a 6" hydrant lead.

b. Location

- i. In single family residential areas, hydrants shall be generally located ten (10) feet off the street right-of-way line, and spaced along the water main so that all dwelling units are within 300 feet of a hydrant.
- ii. In multiple family, institutional, commercial, and industrial areas, hydrants shall be arranged so that all exterior parts of a building are within 250 feet of a hydrant.
- iii. In single family residential areas, hydrants shall be located at the center of the lot or at lot lines.
- iv. When near a street intersection, hydrants shall be located 15 feet from the intersecting street right-of way.
- v. Hydrants shall be located at least 25 feet from any exterior wall of a masonry building and at least 50 feet from any exterior wall of frame or equivalent construction including brick and stone veneer.
- vi. Hydrants located in parking areas shall be protected with a six (6) inches (minimum) concrete curb or standard guard posts.
- vii. All dead end water mains shall end with a hydrant blow-off, gate valve and minimum ten (10) feet of stub and plug for future extensions. A temporary blow-off in lieu of a hydrant will be considered based on hydrant spacing and future extension of the water main.
- viii. Hydrants shall be installed along the water main at least every five hundred (500) feet.

7. PRESSURE REDUCING VALVES

- a. In systems where two or more pressure districts are to be interconnected, the plans shall include a pressure reducing valve near the point of connection to the higher pressure district to balance pressures across the new water system. The PRV shall conform to the Township's Standards for such facilities.
- b. A line gate valve shall be installed both upstream and downstream of each pressure reducing valve to permit isolation of the pressure reducing valve for maintenance and repair. A bypass line that is

equivalent in pipe size to the water main and an additional bypass gate valve and well shall be provided.

4.2 FINAL ACCEPTANCE

1. Water mains shall be flushed and cleaned, and followed by chlorination and bacteria testing. Water main sterilization shall be in accordance with all local, state and federal regulations.

For every water main project all water mains shall be tested at 150 p.s.i. for two consecutive hours. The leakage exfiltration or infiltration shall not exceed 100 gallons per inch of pipe diameter per mile per day.

3. A set of approved Record Drawings, an approved dedication of improvements, and a copy of any recorded easement that was required for construction, shall be submitted to the Township prior to final acceptance of the water main. Please refer to these sections for specific requirements.

SECTION 5.0- SANITARY SEWER

5.0 GENERAL

This standard establishes the minimum requirements for the design of sanitary sewer systems in the Township.

Sanitary sewers are also subject to the Charter Township of Washington Land Development and Utility Ordinance.

Prior to starting any sanitary sewer design, the design engineer is encouraged to make use of maps and information available at the Township offices. It shall be the responsibility of the design engineer to verify utility locations provided by the Township.

5.1 DESIGN CONSIDERATIONS

1. GENERAL
 - a. No connection receiving storm water, surface water, or ground water shall be made to sanitary sewers.
 - b. Sanitary sewers shall be located so as to provide unrestricted access for maintenance and inspection purposes.

- c. Sewer pipe and appurtenances shall conform to the current standards of the Charter Township of Washington and the Detroit Water and Sewage Department.
- d. A grease interceptor will be required for all food service operations. No connections for domestic waste will be allowed to the interceptor.
- e. The current Washington Township Standard Details must be included with the plan set.
- f. All Public sanitary sewers, gravity and pressure sewers, shall be profiled.
- g. In the profile view, all crossings of utilities must be shown. When a water main crosses a sewer, the bottom elevation of the water main and the top of pipe of the sewer shall be indicated. Minimum vertical clearance between utilities shall be 18 inches. Compacted sand backfill is required between utilities. Exceptions may be considered if there is no alternative at the discretion of the Water and Sewer Superintendent or designated representative.
- h. A minimum horizontal separation of 10 feet shall be provided between the sanitary sewer and any water main or storm sewer.
- i. For every gravity sewer project, there shall be indicated on the profile view (near the downstream end of the sewer) a manhole with a 12" deep manhole sump to be used for testing for infiltration. No gravity sewer section having an infiltration rate or an exfiltration rate of more than 250 gallons per inch of pipe diameter per mile of pipe per 24 hour period shall be approved for connection to the Township Sanitary Sewer System.
- j. For gravity sewer projects, all sewers shall be tested according to the current edition of the "Recommended Standards for Wastewater Facilities," commonly known as the Ten States Standards.
- k. For every pressure sewer projects, all force main or pressure sewers under 8" inside diameter shall be tested at 200 p.s.i. for two consecutive hours, pipe's 8" and larger shall be tested at 100 p.s.i. The leakage exfiltration or infiltration shall not exceed 100 gallons per inch of pipe diameter per mile per day.
- l. Types of piping:

Any proposed pipe material alternatives shall be approved by the Water and Sewer Superintendent or his designated representative.

i. Public Sewer Pipe:

Gravity Sewer Pipe

1. 8" through 15" in diameter: Reinforced Concrete pipe in minimum lengths of five feet with Modified Groove Tongue and rubber gasket joints; Acrylonitrile-Budadiene-Styrene Composite Sewer Pipe (ABS Truss Pipe – ASTM Specification S2680) with chemical welded joints; Polyvinyl Chloride (PVC Truss Pipe – ASTM D2680) with chemical welded joints; Polyvinyl Chloride (PVC) Sewer Pipe (ASTM Specification D3034, SDR 35) with push-on rubber gasket joints; Concrete-lined Ductile Iron Pipe Class 50;
2. 16" though 22" in diameter: Reinforced Concrete pipe in minimum lengths of five feet with Modified Grooved Tongue and rubber gasket joints; Concrete-lined Ductile Iron Pipe Class 50;
3. 24" and larger in diameter: Reinforced Concrete pipe with Modified Grooved Tongue and rubber gasket joints or Concrete-lined Ductile Iron Pipe Class 50.

Pressure Sewer

1. High-density Polyethylene (HDPE) SDR 11 and Concrete-lined Ductile Iron Pipe Class 54 with rubber gasket push on type joints; or Polyvinyl Chloride (PVC) Pressure Pipe

ii. Building Service Sewers

1. Building Service Sewers 4" and 6": Poly Vinyl Chloride (PVC) (SDR 23.5 Sewer Pipe); Schedule 40 PVC; or ABS/PVC Truss Pipe.
2. Building Service Sewers 8" through 12": Reinforced Concrete Pipe, Acrylonitrile-Butadiene-Styrene Composite Sewer Pipe (ABS) Truss Pipe, or Polyvinyl Chloride (PVC) Truss Pipe.
3. Building Service Sewer Pipe Joints for the aforementioned pipe materials shall be premium type joints as required by the Standard Details and Specifications adopted by the Township Board.
4. A 6" diameter building service sewer (minimum capacity: 0.5 cubic feet per second) may be used for a building containing one to twelve capacity units or containing another use having

equivalent capacity needs. An 8" or over diameter building service sewer (minimum capacity: 0.75 cubic feet per second) shall be furnished for any building containing from 13 to 100 capacity units or containing another use having equivalent capacity needs.

LOCATION OF GRAVITY, FORCE MAIN AND LOW PRESSURE SANITARY SEWERS

- a. In Easements: All sanitary sewers shall be located within a minimum 20 foot wide easement, centered upon the sewer. Such easement shall be dedicated to the Township, with restrictions against use or occupation of easements, by the property owners and/or by other utilities, in any manner that would restrict sewer maintenance or repair operations.

A written description and drawing of the easement shall be prepared by the Design Engineer and be presented to the Township for examination before recording.

- i. Easements for possible extensions shall be provided to the property lines at locations designated by the Township.
- ii. Sewers shall preferably be constructed outside of paved parking areas, streets, drives and rear-yard areas.
- iii. Within unplatted projects, sewers shall be installed parallel to the property lines, or building lines, with clearance distances to accommodate the full width of the proposed easement or the distance necessary to accommodate a slope of one horizontal to one vertical from invert of sewer to ground surface, whichever is greater.

3. SEWER CAPACITY

a. Tributary Area

Sanitary sewers shall be designed to serve all natural tributary areas with due consideration given to topography, the Township Sanitary Sewer Master Plan, established zoning, and the adopted Township Master Land Use Plan. Sanitary sewers serving a tributary area beyond the project limits shall extend to the boundary of the project site to provide for future extension.

b. Population

For design purposes, population shall be based on a minimum of 2.59 persons per detached single-family home site. Population figures for all other dwelling units and buildings shall be based upon the current "Schedule of Unit Assignment Factors" as defined in the Land Division and Utility Ordinance and as accepted by the Water and Sewer Superintendent. The adopted unit factors shall be used to convert the different occupancy types to equivalent single-family units.

Submission for review shall include a tabulation of occupancy (usage) types and the conversion of these into terms of equivalent single-family units. The tributary area, in acres, may be used to calculate dwelling units based on density allowed in the Zoning Ordinance.

c. Sewage Quantities for Pipe Design

For service areas with design populations of 500 or less, sewer design capacity shall be based on a peak flow of 400 gallons per capita per day.

For service areas with design populations greater than 500 but less than 28,400, peak sewer design capacity per capita shall be based on the following formula:

$$Q = 100 \{ [18 + \text{SQRT} (P)] / [4 + \text{SQRT} (P)] \}$$

Q = Design capacity in gallons per capita per day

P = Design population expressed in thousands

For service areas with design populations exceeding 28,400, peak sewer design capacity shall be 250 gallons per capita per day.

4. MINIMUM PIPE SIZE

Minimum pipe size for gravity sanitary sewers shall be eight (8) inches in diameter. Minimum pipe size for building sewer services shall be six (6) inches in diameter. However, a minimum of one six (6) inch building service sewer shall be provided for a building containing from one to twelve dwelling units (or equivalent); a minimum of one eight (8) inch building service sewer shall be provided for a building containing thirteen to one hundred dwelling units (or equivalent)

Minimum pipe size for low pressure sanitary sewers shall be 2 inches in diameter.

5. HYDRAULICS

a. Calculations

For gravity sanitary sewer, Manning's Formula, with $n = 0.013$, shall be used for hydraulic calculations.

For low pressure sanitary sewer, the Hazen-Williams formula with $C = 120$, shall be used for hydraulic calculations.

On force main trunk sewers, the Hazen-Williams formula with $C = 120$ shall be used for hydraulic calculations.

b. Minimum and Maximum Velocities

Minimum design velocity for gravity and low pressure sanitary sewers shall be two (2) feet per second, and maximum design velocity shall be twelve (12) feet per second, with pipe flowing full. The slope of the sewer between the last two manholes at the upper end of any gravity lateral shall be increased above the minimum permissible pipe slope, wherever possible, to obtain cleansing velocity.

c. Allowable Pipe Slopes For Gravity Sewers

<u>PIPE DIAMETER (INCHES)</u>	<u>MINIMUM SLOPE (FEET PER 100 FEET)</u>
8	0.40
10	0.28
12	0.22
14	0.17
15	0.15
16	0.14
18	0.12
21	0.10
24	0.080
27	0.067
30	0.058
36	0.046

d. Allowances for Changes in Pipe Size in Gravity Sewers

Maximum flow velocity for pipe flowing full shall be maintained by matching the 0.80 of the diameter depth above invert for pipe size increases.

e. Allowances for Direction Change in Gravity Sewers

Provide a drop of 0.10 feet in the downstream sewer invert for a direction change of 30 degrees or greater to compensate for velocity head loss of the incoming flow.

6. BASIS OF DESIGN-LOW PRESSURE SANITARY SEWER

Areas of Use

Low pressure sanitary sewer systems consisting of individual grinder pump stations at each building site, connecting to a common pressurized sewer to convey domestic waste to an acceptable outlet will be considered for use in the Township.

The use of a low pressure sanitary sewer system in any development within the Township will require preliminary approval by the Township. A request for approval shall be submitted to the Township, together with a preliminary plan of the proposed development which delineates the extent of the proposed pressure sewer system, including future extension. The preliminary plan shall include existing ground contours at two feet intervals, proposed grades over the site, and the outlet for the pressure sewer system.

Upon securing the Township's preliminary approval for use of a low pressure sanitary sewer system and prior to commencing with final construction plans and specifications for the system, the project's Design Engineer shall submit for review and approval a basis of design for the low pressure sewer system. The basis of design shall include as a minimum but not necessarily limited to the following:

Layout of development and pressure sewer system, including future extension, indicating:

1. Proposed grades over the site.
Sewer pipe sizes and lengths.
3. Sewer line numbering system for each branch of sewer by pipe size.
4. Elevation along centerline of sewer approximately 100 foot intervals, and with maximum centerline of pipe denoted.
5. Elevation at each individual grinder pump station.

6. Location and elevation at connection of pressure sewer to source of outlet.

Tabular system analysis which is similar to and provides the system data as required "Low pressure Sewer System Pipe Schedule and Branch Analysis".

Submissions for review shall include a tabulation of occupancy (usage) types and the conversion of these into terms of equivalent single-family units. The tributary area, in acres, may be used to calculate dwelling units based on density allowed in the Zoning Ordinance. The adopted "Utility Fees Schedule" shall be used to convert the different occupancy types to equivalent single-family units.

7. DEPTH OF SEWERS

In general, gravity sanitary sewers shall have a minimum depth of nine (9) feet from top of curb (or centerline if uncurbed) to the top of the sewer. The sewer shall have sufficient depth to serve a standard depth basement by gravity.

Pressure sewers and/or force mains shall have a minimum depth of 5.5 feet to the top of pipe.

8. SPECIAL BACKFILL REQUIREMENTS

Granular material meeting the requirements for MDOT Granular Material, Class II, shall be required for full depth backfill of trenches, above a horizontal line one (1) foot above the pipe, under existing or planned road surfaces, pavements, curbs, driveways, parking areas and sidewalks, and where the trench edge is within three feet of the edge of existing or planned pavements. Backfill shall be compacted to a minimum of 90% maximum dry density from above the pipe to 18 inches below grade. Compaction shall be 95% of maximum dry density for top 18 inches of trench. The Compaction results will be determined by a Modified Proctor Test, ASTM Designation D-1557. House lead trenches shall have compacted granular backfill within the entire street right-of-way where sidewalks are required. Compacted granular backfill shall be provided between all utility crossings.

9. HOUSE LEADS

- a. Unless otherwise approved, construction of house leads from a gravity sanitary sewer to the easement and/or property line, for each fronting parcel in which the sewer is designed to serve, shall be included with the construction of the sanitary sewer.

- b. Where construction of house leads to the property line is not required concurrently with gravity sanitary sewer construction, a wye branch with riser, and water-tight stopper or plug, shall be installed for every lot or building site which the sewer is designed to serve.
- c. Minimum size for house leads shall be six (6) inches in diameter.
- d. Minimum slope for house leads shall be 1/8 inches per foot (1.00%).

10. MANHOLES - GRAVITY SEWER

a. Location

Manholes shall be constructed at every change in sewer grade, alignment and pipe size, and at the end of each sewer line. Generally maximum distance between manholes shall be as follows:

<u>Diameter of Sewer</u>	<u>Maximum Manhole Spacing</u>
8" - 21"	350'
24" and larger	400'

- b. Monitoring manholes are required for all non-residential connections to the sanitary sewer system.
- c. Drop Connections

Internal drop connections are required at new manholes where the outlet pipe is 18 inches or more below the inlet pipe. Inverts shall be matched at the flow line whenever possible if 18 inches or less. All manholes with an internal drop connection shall be a minimum of 5' in diameter.

Generally, drop connections are discouraged and will be considered only if other alternatives are not acceptable.

11. AIR RELEASE VALVES (ARV), INTERMEDIATE FLUSHING CONNECTIONS (IFC), BRANCHED FLUSHING CONNECTIONS (BFC) AND TERMINAL FLUSHING CONNECTIONS (TFC)- LOW PRESSURE AND FORCEMAIN SEWER

- a. Air Release Valves shall be located at all high points in low pressure and force main sewers.

- b. Intermediate Flushing Connections in low pressure and force main sewers shall be located so as not to allow more than 600 feet between structures. Intermediate flushing connections may also be required at significant low points.
- c. Branched Flushing Connections shall be located at places where the low pressure sewer branches off.
- d. Terminal Flushing Connections shall be located at the ends of the low pressure and force main sewer systems.

12. STUBS

Where future connections to a manhole are anticipated, stubs or blind drop connections, with watertight bulkheads, shall be provided. Stubs shall be 10 feet minimum in length.

13. GRINDER PUMPS

Grinder pumps are prohibited within five feet of any permanent structure, including buildings, decks, sheds, etc. Grinder pumps shall be located in the side yard of new residential and new non-residential buildings, except for walk-out residential buildings. Grinder pumps for new residential and new non-residential properties shall have a maximum of one four foot extension.

5.2 FINAL ACCEPTANCE

- 1. A set of approved Record Drawings, an approved Bill of Sale, and a copy of any recorded easement that was required for construction, shall be submitted to the Township prior to final acceptance of the sanitary sewer.

SECTION 6.0 – STORM WATER MANAGEMENT

6.0 GENERAL

The management of increased storm water which results from the development of vacant land or expansions to existing facilities will be considered as a critical component of all development plans which are submitted to Washington Township for approval. The intent of this standard is to provide guidelines for the sound management of increased storm water run-off and to provide sufficient flexibility for design professionals to develop innovative solutions that protect the resources of Washington Township while meeting the objectives of water quality preservation and flood control.

The use of natural drainage features, shallow swales and landscape areas shall be incorporated into the drainage planning for a site whenever possible. The objective is to achieve a functional and aesthetically pleasing development that minimizes the use of extensive enclosed storm drains and large obtrusive storm water detention or retention basins while providing for the proper management of storm water runoff.

Development plans must present a unified design that, as a minimum, provides the following protections:

1. The design must show that the development will not cause any impact to downstream properties or upstream properties. Both the rate of storm discharge, and the volume of storm water discharge must be considered.

The development plan shall be fitted to the topography and soil to create the least erosion potential and to effectively accommodate the increased runoff caused by changed soil and surface conditions during and after development.

3. The design must demonstrate the use of “Best Management Practices” for minimizing erosion and controlling sedimentation and other pollutants through all phases of construction.
4. The design must demonstrate that proposed buildings or other permanent structures on, and adjacent to, a proposed development are and will remain safe from flooding.
5. All sets of plans which include plans for storm sewers shall include the current Township Storm Sewer Detail Sheets which shall be considered an inseparable part of the plans when said plans are approved.
6. A Site Grading and Drainagewater Collection and Disposal Plan is required for all Developments. 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 drainage into the system.

6.1 SOIL EROSION AND SEDIMENTATION CONTROL

Under the Natural Resources & Environmental Protection Act (Act 451), Part 91, the developer/applicant shall submit an erosion control plan to the Macomb County Drain Commission - Soil Erosion Control Division. The Soil Erosion and

Sedimentation Control Permit must be issued by the prior to any earth moving operations. The methods used for soil erosion control must be in accordance with the Macomb County Drain Commission erosion Control Manual.

An approved National Pollution Discharge Elimination System (NPDES) permit where applicable, will be required prior to the commencement of any earthmoving operations.

1. DESIGN CONSIDERATIONS

To provide effective erosion and sedimentation control, practical combinations of the following technical principles shall be applied to the erosion control aspects of the plan:

- a. Please refer to the Permits section of these standards for necessary permits relating to storm water.
- b. The applicant/permittee shall be responsible for maintaining temporary erosion control devices during all phases of construction.
- c. The smallest practical area of land shall be exposed at one time during development.
- d. When land is exposed during development, the exposure shall be kept to the shortest possible period of time.
- e. Temporary vegetation and/or mulching shall be used to protect critical areas exposed during development.
- f. Temporary sedimentation basins (debris basins or silt traps) shall be installed and maintained to remove sediment from runoff waters from land undergoing development.
 - i. Sediment basins for construction purposes shall be separated from permanent storm water detention or retention basins.
 - ii. Basins shall be designed in accordance with the Macomb County Public Works standards for sedimentation basin design.
 - iii. Construction runoff shall be directed to the basin in a controlled manner through mass grading techniques, diversion berms/swales, enclosed storm sewers or any combination thereof that would limit runoff velocities and provide for the least potential for erosion of the site.

- g. Mud mats shall be installed at construction access points to provide a buffer area where vehicles can deposit mud and sediment prior to leaving the site, to control erosion from surface runoff and to help control dust.
- h. Areas set aside on the site for equipment storage, laydown, fuel, lubricants, chemical compounds and material stockpiles shall be contained in such a manner as to prevent any leakage or spillage from contaminating the surrounding soils and groundwater, and from entering any storm water management system or existing surface waters.
- i. Filters shall be provided at catch basins and culvert inlet points to prevent sedimentation of storm sewers for both new and existing systems.
- j. Adequate dust control shall be maintained at all times. Surface streets adjacent to the site will be cleaned of any deposits on a daily basis.
- k. The permanent vegetation and structures shall be installed as soon as practical in the development.
- l. Whenever feasible, natural vegetation shall be retained and protected.
- m. Riprap shall be required at all pipe entrances to detention or retention basins. The minimum width of the riprap shall be twice the outside diameter of the pipe. The riprap shall extend from the bottom of the basin to the top of the pipe. Two types of materials may be use:
 - i. fieldstone or broken concrete of a minimum of eight (8) inches;
 - ii. gabions installed per the manufacturer's specifications.

6.2 STORM WATER MANAGEMENT BASINS AND PRETREATMENT SYSTEMS

On-site storm water detention or retention is necessary for all developments in the Township (including private roads) whenever runoff is increased. Waiver of this requirement may be considered by the Planning Commission upon submittal of a request for waiver, and report stating the reasons why detention or retention should not be necessary. Such report shall include maps, charts, and calculations prepared by a Professional Engineer registered in the State of Michigan. The report and the request shall be subject to review and recommendation by the Township Engineer.

Generally speaking, detention basins temporarily store storm runoff for a period of time in which the runoff is released through a positive outlet, at a controlled rate. Retention basins do not have a positive outlet, so that the stored runoff will either percolate or evaporate.

Infiltration (recharge) systems that store and release run-off through permeable soils to the groundwater may be allowed under specific circumstances and with the review and approval of the Township.

In cases where the requirements for detention/retention basins have been waived, storm water pretreatment (in the form of permanent debris and sedimentation control systems) will be required.

1. DESIGN CONSIDERATIONS

a. Detention Basins

- i. Detention basins may only be used when the design shows that there is an adequate outlet for the storm water, and where the increased volume of storm water will not damage downstream property owners. Construction drawings must include sufficient off-site information to demonstrate the existence of an adequate outlet. Downstream easements and maintenance agreements may be required.
- ii. Water originating from off-site is not required to be detained in the detention basin. Storm water originating from off-site should be diverted around the detention basin whenever practical, and where the diversion will not increase the erosion of soils. Storm water originating from off-site may pass through the detention basin without storage.
- iii. 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 hours.
- iv. The storage capacity (volume) of such detention basins shall be rated in acre feet and shall contain a capacity equivalent to a minimum of 0.2 feet of water over the area of the development that drains into the detention basin.
- v. The maximum water level shall be controlled by gravity outlets. Pumping of storm water will only be considered if there are no other options at the discretion of the Water and Sewer Superintendent or his designated representative.

- vi. Detention basin volumes shall not include volumes below the invert of outlet pipe(s). Provide storage for a 2-year, 24-hour event below the outlet pipe (must be a minimum of 2' of depth below the outlet pipe) per the Township's NPDES Permit.
- vii. Detention basins shall be provided with an overflow spillway or manhole set at 6" above the high water levels capable of passing a 100-year frequency storm. The overflow spillway shall be located so not to cause potential damage to adjacent properties. All overflow spillways shall be protected from erosion by surfacing with concrete or rip-rap. The edges of the surface shall have headers of the same or similar materials to prevent undercutting by the storm water overflow.
- viii. One foot of freeboard shall be provided above the high water elevation.
- ix. Side slopes for detention basins shall not be steeper than one (1) vertical to five (5) horizontal.
- x. Detention basins will not be permitted within a floodplain.
- xi. Storm water detention in paved parking lots will be considered under the following conditions:
 - 1. The area contributing to any detention area within a paved area shall not exceed eight thousand (8,000) square feet.
 - 2. Storm water run-off on sites with tributary areas greater than eight thousand (8,000) square feet may be detained within paved areas provided the area contributing to any individual paved detention area, shall not exceed eight thousand (8,000) square feet and individual paved detention areas shall be separated by landscaped greenbelts a minimum of ten (10') feet in width broken only by a circulation drive.
 - 3. Storm water detained in paved areas shall not exceed six (6) inches depth. A positive overflow to an acceptable outlet shall be provided to control the six (6) inches maximum depth for each detention area.
 - 4. Restricted catch basin covers shall be used to provide storage in paved areas. Manhole covers with two (2) vent holes often meet discharge requirements. The covers are designed to let the allowable discharge of water into the storm system. Flow calculations shall be submitted for the restricted covers

specified. The flow shall be calculated for the maximum storage head.

5. Show limits of detention on plans.

xiii. Underground Detention will be considered on a case-by-case basis with the following conditions:

1. Provisions must be made in the design for the collection and removal of sediment and debris accumulated in the system. All applicable health and safety requirements shall also be incorporated in the design of systems that require access by inspection or maintenance personnel.
2. Detailed shop drawings are required for underground detention systems, including pertinent engineering calculations and soils information.

xiv. Concrete rip-rap shall be provided at all pipe entrances to the basin. All pipes entering or leaving the basin shall have either a headwall or flared-end-section at the end of the pipe.

xv. An overflow system shall be provided. The overflow system shall consist of either a pipe having an invert at the design storage level elevation or a concrete spill-way with an invert 0.5 feet above the design storage elevation. The concrete spill-way shall extend from inside the bank slope to the outlet drain.

xvi. Detention in wetland areas will be considered with the following conditions:

1. If in a regulated wetland, an MDEQ permit is required.
2. A permanent pretreatment system for the removal of sediment is required prior to outletting to the wetland.
3. Calculations indicating what the water elevation will rise to during the design storm event will be required. The design must show that properties adjacent to the wetland area will not be negatively impacted by the increase in storm water runoff. Consideration must be given to future developments in the immediate area that could also use the wetland for storm water management purposes.

b. Retention Basins

- i. If a gravity outlet cannot be provided, then the storm water holding facility shall be designed as a retention basin with a storage capacity (volume) of such retention basin shall be rated in acre feet and shall contain a capacity equivalent to a minimum of 0.4 feet of water over the entire watershed area that drains into the retention basin.
- ii. Off-site tributary areas: Retention basins must be sized for storm water that originates off-site and which cannot be bypassed around the proposed retention basin to a site where the storm water originally flowed to. In such cases, the retention basin must be sized using the following design parameters:

Tributary acres: On-site area plus the off-site area

- iv. Retention basin volumes shall not include volumes below the existing groundwater table, permanent water elevation or invert of outlet pipe(s).
- v. One foot of freeboard shall be provided above the high water elevation.
- vi. Side slopes for retention basins shall not be steeper than one (1) vertical to five (5) horizontal.
- vii. Retention basins will not be permitted within a floodplain.
- viii. Retention of storm water in parking lots is strictly prohibited.
- ix. The retention basin design shall demonstrate that the soils are capable of providing necessary infiltration. A soils report will be required to show that the underlying soils are well-drained (hydrologic groups A or B) and the ground water is suitable for percolation.
- x. The entire retention basin area must be seeded or sodded and the turf shall be fully established before the Township will give final approval.
- xi. Concrete rip-rap shall be provided at all pipe entrances to the basin. All pipe entering the basin shall have either a headwall or flared-end-section at the end of the pipe.

c. Infiltration (Recharge) Systems

- i. An infiltration system will be considered if the design engineer can demonstrate that all of the following conditions exist:
 - 1. An adequate positive outlet is not available or it is not possible to construct an off-site drainage system to convey basin discharge to the nearest outlet, and the installation of a retention basin is not feasible or practical.
 - 2. The natural underlying soils are well-drained (hydrologic groups A or B) and the ground water is suitable for percolation.
 - 3. The underlying soils and ground water table have the ability to move water away from the site for the area and volume being drained.
- ii. Permanent pretreatment system upstream of inlet point to prevent any material from potentially clogging the infiltration medium (both surface and subsurface).
- iii. An overflow for a 100 year storm must be provided.
- iv. Infiltration system can be easily accessed for maintenance and replacement if necessary. The use of perforated storm pipe under pavements is discouraged.
- v. There must be a method for determining a failure in the infiltration system. The system cannot be designed such that a failure in the infiltration system results in short circuit to the emergency overflow without on-site ponding.
- vi. The following information shall be supplied and/or incorporated in the design of infiltration systems:
 - 1. Soil boring logs/sieve analysis/geotechnical report indicating type and properties of both surface and subsurface soils, suitability of surface soils for infiltration, capability of subsurface soils to conduct seepage to the underlying groundwater table, and flow from the system under mounding conditions at the maximum infiltration rate. Conditions of <6 inches per day. percolation rate will not be allowed.
 - 2. Computed percolation rate and infiltration/exfiltration calculations.
 - 3. Drainage area map, including any off-site contributing areas and emergency overflow route in the event of system failure.

4. Construction methods to prevent compacting the surface soils which may reduce the infiltration capacity of the soils.

d. Permanent Pretreatment Systems

- i. Permanent pretreatment systems when called for on the plans, shall be sized for a “first flush” depth of 0.5 inches of runoff from the entire drainage basin area of the project. Permanent systems are required when discharging to an existing lake, stream, waterway or wetland.
- ii. Pretreatment can be in the form of open basins or engineered treatment systems.
 1. Open basins shall be designed with minimum side slopes of one (1) vertical to five (5) horizontal, one (1) foot of freeboard above design storm water elevation, emergency overflow, and outlet control devices.
 2. Design calculations, plans and shop drawings for engineered treatment systems shall be certified by a Professional Engineer licensed in the State of Michigan.
 3. Horizontal velocities through the system shall be minimized to prevent turbid flows and allow particles to settle in the pretreatment system.
- iii. Permanent pretreatment facilities will not be allowed within a floodplain.

2. MAINTENANCE OF STORM WATER MANAGEMENT BASINS AND PRETREATMENT FACILITIES

- a. Commercial, Industrial, Residential and Office Sites: The proprietor shall maintain the storm water management basins and permanent pretreatment facilities in proper working order at all times. All maintenance and inspections shall meet the Township’s Long-Term Operation and Maintenance Program and the Township’s NPDES MS4 Permit.

6.3 GRADING AND SURFACE DRAINAGE

For all new building sites, subdivisions, site plans, private roads, and other development proposals within the Township, a grading plan shall be submitted for review and approval.

This standard establishes the minimum requirements for the design of grading and surface drainage in the Township.

1. DESIGN CONSIDERATIONS

- a. 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 adversely affected by runoff from the property under design consideration. Before a Certificate of Occupancy for any building is issued, the Superintendent shall approve the final site grading and drainage for each building, which shall be sealed and signed by a Professional Engineer or Land Surveyor, Registered in the State of Michigan. The Development may require that a survey, drawing, and certificate—done by a Professional Engineer or Land Surveyor, Registered in the State of Michigan—be furnished by the Developer indicating that the work has been done in conformity to the approved site grading and drainage plan. It shall be unlawful for any person to interfere with, modify, or obstruct the flow of drainagewater across any property in any manner different from the approved plan.
- b. The grading plan shall be designed to insure that if a failure occurs in any storm drainage system, storm waters will drain to an approved outlet in overland swales without flooding buildings or adjacent properties.
- c. Positive drainage of all yard areas is required for all residential Developments. In special cases involving extreme vertical relief and wooded areas, isolated undrained potholes will be considered. These undrained areas must be provided with an easement for surface drainage and retention which will encompass the storm water storage level for two 100 year frequency storms plus one (1) foot of freeboard.
- d. Generally, residential lot drainage shall be split at the building; drainage from the front of the building shall drain to the road and drainage from the rear of the building shall drain to the rear lot line. Rear to front surface drainage shall be avoided and will only be permitted under extreme topographic conditions. If rear to front drainage is permitted, only the drainage from the rear of the specific lot is allowed.

- e. Side yard swales shall be a minimum of 0.5 feet below the building brick ledge grade of the building and located a minimum of ten (10) feet away from the building.
- f. Rear to front lot drainage shall have protective drainage swales around the building. The high point of the swale shall generally be located a minimum distance of 15 feet off the rear of the building and generally one (1) foot (0.5 foot minimum) below the building brick ledge grade.
- g. Rear-yards shall be drained with swales and shallow ditches unless topographic features prevent surface drainage.
- h. Meet existing ground at the property boundaries. Construct an intercepting swale to prevent drainage onto adjacent property or lots.
- i. All buildings having foundation drains shall direct the flow of drainagewater from such foundation drains into a storm sewer or storm drains by means of an underground enclosed conveyance pipe. No building permit for any building having a basement shall be issued unless the plans for such building indicate a building service sewer (drainagewater) with drainage to a storm sewer or storm drain. If a storm sewer is not available, the Superintendent shall approve the discharge location of the outlet of the building service sewer (drainage water).
- j. In residential development with poor draining soils or high groundwater table, an enclosed drainage system for footing drains/sump pumps discharge is required. (See Underdrain/Sump Pump Collection systems).
- k. No rear yard drainage system shall be constructed until rear yard grading is completed and approved.
- l. 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 drainagewater collection swale at a minimum slope of one foot in one hundred feet (one percent).
- m. Drainage water run-off from building roofs shall be piped to a point five (5) feet away from the outside walls of any building.
- n. Where required by the Township, a four inch diameter open joint drainage pipe shall be provided for drainage with said pipe trench being backfilled entirely with pea gravel up to within four inches of the grade line of the swale.

SLOPE REQUIREMENTS

- a. Protective perimeter slope: A minimum slope of 5% is required for areas within 10 feet of building perimeter, except at doors, patios and porches.
- b. Minimum ground slope for any portion of the site shall be two (2) %. A one (1) % minimum will be considered for occasional use.
- c. Drainage swales along side and rear property lines, and the protective swale around buildings shall generally have a two (2) % slope. A one (1)% minimum will be considered for occasional use. Rear yard swales shorter than 300 feet may have a minimum slope of 0.8%. The maximum distance drainage water shall travel in a drainage swale without an intercepting yard catch basin shall be 350 feet. Not more than 100 feet of drainagewater travel shall be upstream of an angle point (deflection angle 45 degrees or greater) in the drainage swale. Planned final grade elevations shall be indicated on the plans at a maximum spacing of 50 feet.
- d. Maximum ground slope for any graded portion of the site shall be 25% (one (1) vertical to four (4) horizontal). A maximum slope of 33% (one (1) vertical to three (3) horizontal) will be considered for occasional use and for side slopes of landscape berms.

3. PLOT PLAN REQUIREMENTS

- a. Prior to issuance of a building permit the permit holder shall submit a plot plan drawing to the Building Department for review and approval. All grades shown on the plot plan shall be in accordance with the approved subdivision grading plans. All plot plans shall be in accordance with an accurate boundary line survey and include the following information:
 - i. Date of plan or revision, north arrow, drawing scale, property address, sidwell number, and legal description of property.
 - ii. Provide site benchmark on USGS datum.
 - iii. All existing and proposed water courses, swales and ditches.
 - iv. Elevations at each lot corner, along property lines, along top of curb, along top and bottom of retaining walls, high points, low points and grade change points. Provide proposed spot grades on an approximate 50-foot grid pattern throughout the site and to 100-feet onto adjacent sites. Proposed grade contours can be provided

to supplement the spot grades. Proposed grades along property lines shall meet the approved master grading plan.

- v. Finish grade and finish floor elevations for first floor, garage and basement. Provide 0.5 feet of fall within first 25 feet from building finish grade to side, front or rear yard high points. Provide finish grade elevations of adjacent houses. Please indicate if the adjacent lot is vacant.
- vi. All overland drainage routes must be maintained. The lowest house grades are to be a minimum of one foot higher the highest overland flow route elevation.
- vii. Location of all the new construction on the site and distances from lot lines.
- viii. Ensure architectural plan elevations and footprint match plot plan.
- ix. Slopes from building to side yard shall not exceed 1:3 slopes. Stability computations must be provided for any grade change over 2 feet that is steeper than one vertical or two horizontal, example: retaining wall.
- x. Minimum land and swale slopes to be 1%.
- xi. All proposed and existing utility structures, with as-built rim elevations and finish grade elevations for hydrants.
- xii. Sidewalks and driveways (with elevations). Please indicate driveway slopes, they shall be less than 10%, preferred slopes for driveways are 2-8%. All sidewalks and driveways shall be ADA compliant. Driveway locations shall match the approved plans. Show 5-foot wide concrete sidewalk along right-of-way with proposed grading as appropriate for development.
- xiii. All setback and easement locations.
- xiv. Wetland boundaries, water surface and floodplain locations and elevations.
- xv. Show and label all easements.
- xvi. Provide sanitary sewer lead location shall be shown at the as-built location with invert elevation. Provide proposed grade of the sanitary lead.

- xvii. Provide sump lead location. Sump leads shall have a minimum cover of 2 feet at the building and a minimum of 3 feet of cover in all other locations. The sump lead must connect above all trunk line pipes at structures.

- b. Prior to backfill inspection as-built brick grade elevations and foundation locations tied to property lines must be submitted for review and approval by the Water and Sewer Superintendent.

- c. Prior to issuance of a Certificate of Occupancy a Final Grade Certificate must be submitted and approved by the Superintendent indicating that all lot grading has been done and accomplished in accordance with the approved plot plan (within an allowable tolerance of plus or minus 0.25 feet. During periods of the year when weather conditions make site grading work unfeasible, a temporary Certificate of Occupancy may be issued at the discretion of the Superintendent, subject to the furnishing of a satisfactory bond, letter of credit, or cash deposit guaranteeing the completion of the work when weather conditions permit.

6.4 STORM SEWERS AND OPEN DRAINS

The following details and specifications shall be required for developments utilizing storm sewers and/or open drains to convey runoff from the site. All such storm drainage systems must outlet to either a detention basin, retention basin, infiltration system, or pretreatment facility as outlined in Section 3.2 of this Standard prior to discharging to any natural or man-made water course, wetland, drain or other body of water.

In general, trunk storm sewers or any sewer that carries street drainagewater shall be located within a public street right-of-way. Such sewers shall not be located along rear lot line easements. Where public storm sewers are located outside of public streets, they shall be placed in a recorded public utility easement that provides for unlimited access to the storm sewer for repairs, connections, and maintenance. The minimum acceptable width of easements for storm sewers shall be 12 feet for sewers 12 inches through 48 inches in diameter; and 30 feet wide for sewers over 48 inches in diameter. The sewer shall be placed in the center of the above designated easement width.

This standard establishes the minimum requirements for the design of storm drainage systems in the Township.

1. DESIGN CONSIDERATIONS

a. Storm Sewer Capacity

- i. Sufficient capacity shall be provided in the storm sewer system to allow existing runoff from upstream drainage to "pass through" the proposed storm sewer system.
- ii. When a storm sewer is designed to provide capacity for upstream areas, the hydraulic gradient shall remain in the pipe. For storm sewer designed to take on-site drainage only, the hydraulic gradient must be no higher than one (1) foot below storm structure rim elevations. For storm sewers considered to be trunk sewers, the hydraulic gradient shall be maintained within the pipe.
- iii. When the hydraulic gradient is above the top of the sewer pipe the design elevation of the hydraulic gradient shall be indicated on the profile at each manhole.
- iv. If the heights of the hydraulic gradient exceed two (2) feet above the top of pipe, rubber joints shall be used.

b. Hydraulics and Hydrology

- i. Storm drainage systems shall be designed for a minimum of a ten-year storm. To determine the storm water runoff, the rational method shall be used ($Q=CIA$)

where Q = peak rate of runoff in cubic feet per second

A = area in acres

C = runoff coefficient for drainage area

I = average rainfall intensity in inches per hour for a given time of concentration

- ii. The formula for rainfall intensity (I) shall be determined by using the formula $I = 175/(T+25)$, where T is the time of concentration in minutes. For residential areas, T shall usually be 20 minutes; for commercial and office areas, T shall be 15 minutes or less.
- iii. Run-off coefficients shall be determined for each individual drainage area. Drainage area coefficient determination shall generally be based on the following:

<u>SURFACE</u>	<u>C</u>
Agricultural/Grass	0.15
Pavement/Buildings	0.90
Residential	0.35

Multiple Housing	0.55
Commercial	0.90
Industrial	0.90

The above run-off coefficients are minimum. Actual site design may require an increase in run-off coefficient. A weighted run-off coefficient can be used (provide calculations). Coefficients proposed for a project are subject to approval by the Township.

- iv. An overland flood route for a 100 year storm frequency shall be provided and shown on the plans. A minimum freeboard of six inches shall be provided from any building's exterior finished grade (brick ledge) to the 100 year flood elevation.
- v. In Manning's formula, $n = 0.013$ for reinforced concrete pipe and $n=0.025$ for corrugated metal pipe, if corrugated metal pipe is allowed, shall be used for hydraulic calculations.
- vi. Minimum design velocity shall be 2.5 feet per second and maximum design velocity shall be 10 feet per second, with the pipe flowing full.
- vii. Allowable minimum pipe slopes:

<u>Pipe Diameter (in)</u>	<u>Minimum Slope (ft/100 ft)</u>
12	0.32
15	0.24
18	0.18
21	0.14
24	0.12
27	0.10
30	0.09
36	0.07
42	0.06
48	0.05
54	0.04
60	0.04

- viii. For changes in pipe size, the maximum flow velocity for full pipe flow shall be maintained by continuity of the 0.80 diameter depth above invert.
- ix. For changes in direction, a drop of 0.10 feet in the downstream sewer invert shall be provided for direction changes of 30 degrees

or greater to compensate for velocity head loss of the incoming flow.

- x. All catch basin and inlet leads shall be laid on a minimum slope of 1%.
- xi. Wherever differences in manhole pipe invert elevations exceed two (2) feet, a two (2) foot sump shall be provided to prevent channel erosion.

c. Sewer Pipe

Any proposed pipe material alternatives shall be approved by the Water and Sewer Superintendent or his designated representative.

i. Size and Material Requirements:

Public Sewers or Private Sewers that service one or more properties:

1. Pavement Underdrain Pipe shall be a minimum of 6" in diameter and shall be Galvanized Perforated Corrugated Metal Pipe or ABS Truss Pipe, PVC SDR 35, high-density polyethylene N12 sewer pipe.
2. Storm Sewer for surface water runoff:
 - a. For Pipe within the right-of-way shall be a minimum of 12" in diameter and shall be Reinforced Concrete Pipe.
 - b. For Pipe outside of the right-of-way shall be a minimum of 12" in diameter and shall be Reinforced Concrete Pipe.
 - c. The minimum pipe size for storm sewers, catch basin leads and inlet leads shall be 12 inches in diameter.
3. Foundation drain service sewer (more than one building outlet) shall be a minimum of 8" in diameter and shall be ABS Truss Pipe, PVC Truss, Nonreinforced Concrete Pipe C14SM, Reinforced Concrete Pipe, or PVC pipe.
4. Rear yard underdrain system with no inlets shall be a minimum of 8" in diameter and shall be perforated plastic pipe (please see foundation drain service pipe paragraphs for material requirements).
5. 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 8”.

Building Service sewers for drainagewater:

1. Foundation drain service pipe (single building outlet) shall be a minimum of 3” in diameter and shall be Polyvinyl Chloride (PVC) schedule 40 pipe.
2. Foundation drain service pipe (more than one building outlet) shall be a minimum of 8” in diameter and shall be ABS Truss, PVC Truss, Nonreinforced Concrete C14XM, PVC Schedule 40, Reinforced Concrete Pipe or Polyvinyl Chloride (PVC) Sewer Pipe.
3. Underdrain pipe shall be a minimum of 6” in diameter and shall be Galvanized Perforated Corrugated Metal Pipe or High-Density Polyethylene N-12 with loose center joint.
4. Storm sewer for surface water runoff shall be a minimum of 12” in diameter and shall be Reinforced Concrete Pipe or Galvanized Corrugated Metal Pipe.

ii. Location

1. Storm sewer shall have a minimum of three (3) feet of cover from the top of the finish road or earth grade to the top of any storm sewer, unless an alternative is approved by the Township.
2. Storm sewers shall generally be located on the opposite sides of streets from water mains.
3. A minimum ten feet horizontal separation is required between storm sewer and water mains (barrel to barrel).
4. Special Backfill Requirements:
 - a. Granular material meeting the requirements for MDOT Granular Material, Class II, compacted to 95% maximum density, shall be required for full depth backfill of trenches under existing or proposed road surfaces, pavements, curbs, driveways, parking areas, and sidewalks, and where the storm sewer is within a one-on-one influence of the edge of existing or proposed pavements. Compaction testing shall be performed by an independent laboratory.

- b. Storm sewer leads shall have compacted granular backfill within the entire street right-of-way where sidewalks are required. Compacted granular backfill shall be provided between all utility crossings.

d. Manholes

i. Location

1. Manholes shall be located at:

- Points where the sewer changes direction
- Points where the size of the sewer changes
- Points where the slope of the sewer changes
- The junction of sewer lines
- Street intersections or other points where catch basins or inlets are to be connected
- The end of the sewer line
- Per spacing below

2. Maximum distance between manholes shall be as follows:

<u>Diameter of Sewer</u>	<u>Maximum Manhole Spacing</u>
8" - 30"	350'
36" - 42"	400'
48" - 60"	500'
66" & larger	600'

Note: Height of elliptical and arch pipes shall be used as the criteria for manhole spacing

e. Catch Basins, Inlets and End-Sections

i. Size

1. Inlets and rear-yard catch basins up to four (4) feet deep from invert to top of casting may be (two) 2 feet in diameter.
2. Inlets and rear-yard catch basins more than four (4) feet deep from the inlet to top of casting and all other catch basins shall be four (4) feet in diameter.
3. Catch basin leads may tap directly into sewers 42 inches and larger, except that taps shall not be made into precast manholes tee pipe section.

ii. Location

1. Catch Basins shall be located at:

- a. the radius return of street intersections. A maximum distance of 150 feet is allowed when drainage is required to go around a corner between a high point and a corner catch basin.
- b. maximum intervals of 500 feet along a continuous slope.
- c. all low points in streets, swales and ditches, where applicable.
- d. intermediate points along the street such that there is a maximum pavement drainage area per structure as follows:
 - i. Intercepting catch basins – 7,500 S.F./C.B.
 - ii. Low point catch basins – 10,000 S.F./C.B.
- e. Standard rear yard basins shall be provided at all low points in the drainage swales, in easements. All catch basins shall be located within four (4) feet of lot corners. 12-foot side yard easements to the street shall be included at all rear yard basins. Provide intercepting yard type catch basins such that not more than 350 feet of swale drainage runs into any one catch basin other than a low point catch basin where 600 feet of drainage is allowed.
- f. All catch basins and inlets located at low points in poor draining soils shall have a minimum of two ten (10)-foot runs of six (6) inches perforated pipe with pea gravel bedding and backfill. Other trench collecting underdrains may be required, as required by the Township.
- g. End-sections or headwalls shall be placed at all culverts and pipe inlets or outlets.
- h. A prefabricated bar screen shall be used on all storm sewer openings 18 inches in diameter and larger. The bar screens shall be constructed according to an approved separate enlarged detail in the drawings and shall be designed to be sturdy, permanent easily maintained, non-clogging and shall

have clear openings of no more than six (6) inches. Bar screens shall not be required on driveway culverts.

- i. Manholes and catch basins may be combined and utilized as a stormwater inlet structure.

f. Underdrain/Sump Pump Systems

- i. Where the proposed ground surface slope is less than 2% (two percent), supplementary drainage shall be provided by an underdrainage system.
- ii. Locate the underdrain/sump pump systems in a six (6) foot drainage easement along the rear or side lot lines at three (3) feet from the property line. Where abutting off-site property, it shall be located six (6) feet from the property line in a twelve- foot easement.
- iii. Trench for underdrain shall have adequate depth to provide gravity flow of sump pump and softener discharge lines to underdrain, and shall have a minimum depth of three (3) feet from the property line.
- iv. Install two (2) foot diameter inlets at 400 foot maximum intervals along the underdrain and located three (3) feet from side lot lines.
- v. Install a two (2) inch P.V.C. capped tee at each lot for the sump pump.
- vi. Show the underdrain system with sump pump on the storm sewer plan, with a dimension to the nearest lot line for each sump pump tee.
- vii. The sump pump collector system may be combined with the underdrain system, as noted above.
- viii. Minimum pipe material shall be eight (8) inch PVC constructed with a minimum of 3.0 feet of cover and 0.50 percent slope.
- ix. Eight (8) inch lines must not be used for the collection of surface runoff and therefore structures on these size lines must have solid covers.

g. Open Drain Requirements

- i. Open drains shall have slope protection (rip-rap) at bends with radius of 500 feet or less and other points as designated by the Township.
- ii. The drain bottom and slopes, to the hydraulic gradient line, shall be sodded. The remainder of the drain shall be seeded. The Township will not approve the work until all turf is established.
- iii. Specific drain cross-section and velocity control measures will be approved by the Township on an individual basis.
- iv. Where open drains are proposed for drainagewater disposal, the Manning's formula shall be used for determination of flow depth and capacity. However, if the Township and/or the Michigan Department of Natural Resources and Environment deems it advisable, the Developer's Engineer may be required to furnish computations and plans showing the backwater curve for the open drain under fifty-year fully-developed-upstream-watershed conditions.
- v. Improved open drains may be permitted under special circumstances provided the Township has determined that the enclosure of such open drains would require a storm sewer 60 inches or larger in diameter. When open drains are used, the easement width shall be sufficient to accommodate a thirty feet wide maintenance plateau (with a maximum slope of ten percent) on each side of the channel.
- vi. The side slopes of open drains shall have a maximum slope of one (1) foot vertical to four (4) 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 as soon as possible after construction. In any event, sufficient measures shall be taken to conform to the erosion and sedimentation control requirements of applicable state or local ordinances.

SECTION 7.0- PAVING

7.0 GENERAL

This standard establishes the minimum requirements for paving in the Township.

7.1 PRIVATE ROADS

Private roads must meet all requirements of the Macomb County Road Commission. Also, please refer to the Township Private Road Ordinance and the Township's Zoning Ordinance for more information.

7.2 PARKING LOTS

The design of parking lots shall conform to the Washington Township Zoning Ordinance and the following standards:

1. Parking lots shall be of the size and configuration as required by the Washington Township Zoning Ordinance. Where the Washington Township Zoning Ordinance requires off-street parking, the design of the parking area shall conform to these requirements and shall be reviewed and approved by the Township.

The minimum grade on any roadway, except parking areas, shall be 0.5% for concrete pavement. Minimum slope on asphalt surfaces is 1%. The maximum grade allowed on any surface type is 6.0%. In parking areas the minimum grade allowed on any surface is 1%.

3. Approaches to any sites from roads under the jurisdiction of the Macomb County Road Commission or the Michigan Department of Transportation (M.D.O.T.) shall be designed according to their criteria. Approval of these improvements by the above agencies must be obtained and furnished to the Township prior to Township approval of the paving. Passing lanes and acceleration/deceleration lanes are required by the Township on connections to all paved roads under R.C.O.C. or M.D.O.T. standards.

7.3 MATERIAL REQUIREMENTS

All paving material for off street parking, non-public streets, sidewalks and bike paths shall conform to the requirements of the Macomb County Road Commission and the M.D.O.T. Standards and Specifications, current edition.

1. Minimum parking lot pavement material shall be as follows:
 - a. Concrete pavement: 6" non-reinforced concrete over 6" compacted subgrade.
 - b. Asphalt pavement: 3" MDOT 1100 mixture over 6" MDOT 21AA gravel or 8" of MDOT 22A gravel. Base material shall be placed over 6" of compacted subgrade to 95% Modified Proctor.

Private Streets and Commercial Areas shall have as a minimum the following pavement material:

- a. Road Commission Macomb County Standards shall be required.

7.4 PUBLIC STREETS

1. All streets within public right-of-way shall be designed according to the criteria and specifications of the Macomb County Road Commission or M.D.O.T.

7.5 SIDEWALKS, PATHWAYS, AND DRIVEWAYS

This standard establishes the minimum requirements for pathways, sidewalks and sidewalk repair in the Township. Please refer to the Township Sidewalk Ordinance for additional information.

1. Pathways
 - a. Where pathways are proposed or required, they shall be indicated on the site plan. Proposed grades shall be indicated at the lot lines.
 - b. The pathway shall be eight (8) feet wide and located one (1) foot inside the existing or proposed right-of-way line of public street.
 - c. Pathway material shall be 4" MDOT 1100 mixture on 4" of MDOT 22A gravel. Where driveways cross the pathway, the pathway shall be 6" MDOT 1100 mixture on 4" of MDOT 22A gravel.
 - d. The existing subgrade shall be compacted to 95% modified proctor and must have a soil sterilant applied prior to placing base material.
 - e. All pathways should be in compliance with current AASHTO geometric standards.
 - f. ADA barrier free access ramps are required at all crossings. Pathways must comply with all ADA requirements, including detectable warnings.

Sidewalks

- a. Where sidewalks are proposed, they shall be indicated on the site plan. Proposed grades shall be indicated at the lot lines.
- b. The sidewalk shall be a minimum of five (5) feet wide and located one (1) foot inside the existing or proposed right-of-way line of public street.
- c. Sidewalks shall extend through all driveways without steps.

- d. Sidewalks shall be four (4) inches thick, except at driveways where they shall be six (6) inches thick.
 - e. ADA barrier free access ramps are required at all crossings. Sidewalks must comply with all ADA requirements.
 - f. Construction joints with a half inch premolded expansion filler shall be placed at maximum intervals of 50 feet. Contraction joints shall be placed at a maximum intervals of five feet, or equal to the width of the walk, whichever is greater.
 - g. Concrete for sidewalks shall have a 28 day compressive strength of at least 3,000 pounds per square inch.
 - h. Sidewalks shall be constructed along a planned longitudinal grade line. The maximum longitudinal slope shall be 5%. The transverse slope of the sidewalk shall be a minimum of 2% (1/4 inch per foot) and a maximum of 5% (3/4 of an inch per foot).
 - i. All pathways should be in compliance with current AASHTO geometric standards.
 - j. Sidewalks in the Village District shall comply with the Township Zoning Ordinance.
3. Driveway requirements are as follows:
- a. Driveways shall be a minimum of 6 inches thick. However, where loads heavier than standard automobile loads are anticipated, the minimum thickness should be 7 inches.
 - b. Construction joints with a half inch premolded expansion filler shall be placed at maximum intervals of 50 feet.
 - c. Concrete for driveways shall have a 28 day compressive strength of at least 3,000 pounds per square inch.
4. Repair Requirements
- a. Sidewalk flags shall be replaced when one or more of the following conditions exist:
 - i. Stubber - A tripping hazard created when a vertical separation of one-half (1/2) inch or greater exists between two (2) flags.

- ii. Crack - A tripping hazard created when a horizontal separation of one-half (1/2) inch or greater exists between two (2) flags.
- iii. Drainage Problem - A flag that can collect water and freeze creating a slip-and-fall condition.
- iv. Holes - A tripping hazard created by holes two (2) inches or greater in size in any direction or severe pitting over 25% or more of the flag.
- v. Scaling - Deterioration of the sidewalk surface.
- vi. Slope - A flag sloped three (3) inches or more creating a safety hazard.
- vii. Reverse Pitch - A flag pitched toward a building. This flag may be required to be replaced.
- viii. Thin Walk - Evidence of thin (substandard) concrete. The flag may be damaged when the adjacent flags are being repaired and may require replacement.

7.6 PEDESTRIAN WAY PLAN

Sidewalks meeting the requirements of this section are required to be installed on both sides of all streets in the area described as follows:

Beginning at the intersection of 26 Mile Road and the M-53 freeway; thence northerly along said freeway to the centerline of 27 Mile Road; thence westerly to the east side of Van Dyke, thence northerly to the Macomb Orchard Trail, thence southwesterly along the Trail to 26 Mile Road, thence easterly to the point of beginning.

Sidewalks meeting the requirements of this section are also required to be installed on both sides of Van Dyke in all areas of the Township not described above. Bikepaths meeting the requirements of Section 80.0506 are required to be installed on both sides of all other streets in all other areas of the Township.

7.7 FINAL ACCEPTANCE

1. All public road systems shall be subjected to a Final Inspection by the Macomb County Road Commission prior to acceptance of the system by the Township or issuance of a certificate of occupancy.

A set of approved record drawings, together with copies of all material

certifications, density testing reports, concrete cylinder test reports and any recorded easement shall be submitted to the Township prior to final acceptance.

7.8 MAINTENANCE

1. In Subdivisions, Condominiums and private roads the developer and/or owners must provide for continued maintenance of storm water management basins and permanent pretreatment facilities, through acceptance of ownership and maintenance responsibility by a home owners or a condominium association. The developer shall be responsible for the maintenance of detention/retention basins until at least ninety-five percent (95%) of all homes have been constructed and sold. The subdivision covenants or condominium bylaws shall incorporate a procedure to finance this maintenance. The developer or owner(s) shall post a cash bond with the Township in the amount to be determined by the Township until the association can assume the maintenance responsibility.

SECTION 8.0 PUMP STATION STANDARDS

8.0 GENERAL

Pump stations may be planned for sanitary sewer and storm sewer if there are no other alternatives. The location, sizing, details, and specifications of pump stations will require Township approval.

8.1 SANITARY SEWER PUMP STATIONS

- i. Pump stations will only be allowed when gravity sewer is not an option at the discretion of the Water and Sewer Superintendent or his designated representative.
- j. Pump stations will require an on-site generator.
- k. Pump stations shall be designed to handle ultimate peak flow for the tributary area.
- l. Shop drawings will be required for the pump station.
- m. Pads for transformers and control panels shall be concrete, contact the Township for current standards and specifications.
- n. The developer/applicant will be required to coordinate the electrical supply with DTE.

- o. Control panel requirements: contact the Township for control panel standards and specifications.
- p. Valve Vault Requirements
 - i. Valve vault structures shall be concrete, contact the Township for current standards and specifications.
 - ii. Piping through valve vaults shall have double in-line check valves.
 - iii. Valves shall be approved by the Department of Public Works.
- q. Wetwell Requirements
 - i. Wetwell structures shall be concrete, contact the Township for current standards and specifications For wetwells and pumps.
 - ii. Pump stations will require one back-up pump.
 - iii. Explosion-proof submersible pumps are required.
 - iv. Pump stations shall be designed so that each pump will not run more than six (6) times in one hour at ultimate peak flow.

8.2 STORM SEWER PUMP STATIONS

- a. Storm sewer pump stations are discouraged and will only be considered when gravity discharge is not available and with the approval of the Water and Sewer Superintendent.
- b. Pump stations will require an on-site generator.
- c. Shop drawings will be required for the pump station.
- d. Pads for transformers and control panels shall be concrete, contact the Township for current standards and specifications.
- e. The developer/applicant will be required to coordinate the electrical supply with DTE.
- f. Control panel requirements: contact the Township for control panel standards and specifications.
- g. Pump stations shall be designed to handle a **100** storm event for the tributary area.

- h. Valve Vault Requirements
 - i. Valve vault structures shall be concrete, contact the Township for current standards and specifications.
 - ii. Piping through valve vaults shall have double in-line check valves.
 - iii. Valves shall be approved by the Department of Public Works.
- r. Wetwell Requirements
 - i. Wetwell structures shall be concrete, contact the Township for current standards and specifications for the wetwell and pumps.
 - ii. Pump stations will require one back-up pump.
 - iii. Explosion-proof submersible pumps are required.
 - iv. Pump stations shall be designed so that each pump will not run more than six (6) times in one hour at ultimate peak flow.

SECTION 9.0 LANDSCAPE WALLS AND RETAINING WALLS

9.0 GENERAL

Landscape and retaining walls shall be designed to ensure stability against overturning, sliding, excessive foundation pressure and water uplift. Landscape and retaining walls shall be designed for a safety factor of 1.5 against lateral sliding and overturning.

Landscape and retaining walls shall be designed in accordance with the current adopted issue of the Michigan Building Code.

9.1 DESIGN

1. Design details and computations (sealed by an Engineer, Registered in the State of Michigan) shall be submitted and approved for all walls not attached to a building which are greater than **two (2)** foot in height. Cost of walls should be included in engineer's estimate submitted at the time of engineering review.
2. Any face of a retaining/landscape walls shall be a minimum of two feet from the nearest property line.

3. Easement from abutting parcels will be required for any retaining wall footing that encroaches on said parcel, or where it appears that “normal” (1 on 1 side slope) excavation to the bottom of the footing would require encroaching or if tie-backs encroach.
4. Typically, utilities shall not be proposed under a retaining/landscape wall. If it is unavoidable, then all proposed utilities shall be installed in a proper casing pipe.
5. Wall details shall be included in the overall plan set.
6. The design engineer shall execute and submit a certification form that the wall was installed per design, the certification shall be signed and sealed by an Engineer, Registered in the State of Michigan. Additionally, if the design engineer for the site did not complete the design of the retaining wall, then the retaining wall design engineer shall sign and seal the certification statement.
7. The following types of walls are acceptable in the Township:
 - a. Concrete wall
 - b. Pre-cast wall
 - c. Block wall
 - d. Wood wall
 - e. Boulder wall (maximum height: 4 feet)
8. The following items shall be included in all retaining/landscape wall submittals for review:
 - a. Plan view
 - i. Clearly identify location of the structure in the plan view.
 - ii. Indicate the top of wall and bottom of wall elevations, at a minimum interval of 25' along the wall.
 - iii. Provide finished grades adjacent to the structure at a maximum interval of 25'.
 - iv. Show location of protective guardrail and/or fencing. The necessity for guardrail and/or fencing will be reviewed on a case-by-case basis. Typically, a guard, fence, or guardrail is required on

structures greater than 30" in height. The typical guard, fence or guardrail is 42" high with openings less than 4" in diameter.

- v. The proposed drainage system shall be shown on the plans as well as its ultimate discharge point, i.e. storm structure, ditch, swale, etc.
- b. Cross-section/profile view
- i. Provide minimum and maximum heights of the wall.
 - ii. Identify the material type and all manufacturers' specifications.
 - iii. State the proposed structural dimensions, including wall thickness, and the depth and thickness of the footing.
 - iv. Geo-grid length shall be provided, dimensioned and labeled, as well as the embedment depth. Any changes in layout shall be shown on the plans.
 - v. Fence, guard, or guardrail post footings or connections to walls shall be detailed. Installation of the post or post footing shall be specified so as not to damage any geo-grid, if applicable.
 - vi. The location of utility crossings shall be noted. Additionally, the manner in which these crossings will be constructed so as not to diminish the integrity of the wall shall be noted.
- c. Calculations
- i. Design loads including vehicular impact and surcharge loadings where applicable. Loads due to attached structures (guards, fences, guardrails, etc.) shall be considered in the design wall.
 - ii. Note the grade of reinforcing steel, as well as the cover depth and the horizontal spacing.
 - iii. Provide the bearing pressures (noted or referenced) and the soil bearing capacities.
 - iv. Provide soil boring information and geotechnical analysis, if required.

SECTION 10.0 PERMITS

The Design Engineer shall forward plans to any public utility and any state or county agency whose facilities or rights-of-way may be affected by the proposed construction.

Permits-Jurisdiction-Notification

1. The proprietor shall obtain, or cause his contractor(s) to obtain all permits, post all required bonds, and pay all required fees for each and all permitting agencies departments having jurisdiction over the land and rights-of-way involved in the project. Proper notification shall be given to each governmental agency and utility company prior to beginning of construction. The Charter Township of Washington shall require a minimum of 2 business days of notice prior to commencement of any construction.
2. Upon approval of the plans and specifications by the Township, the Developer's Engineer will coordinate the securing of necessary approvals from other reviewing agencies. The Applicant shall furnish such plans and other documents as necessary to accomplish such approvals. However, after approval of plans by the Township, the Developer's Engineer shall obtain approval from all necessary agencies and/or utilities where the approval is not obtained by the Township. 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.
3. Applicant must submit copies of the documentation from other agencies (as applicable to the project) to the Township indicating that the plans have received their approval for work within, and/or modifications to, their facilities prior to a pre-construction meeting.
4. For projects where the water main will become part of the public system, the Township Engineer shall notify the applicant for additional copies of the plans, including current standard detail sheets, signed and sealed by a Michigan Registered Professional Engineer for processing and eventual issuance of a Michigan Department of Natural Resources and Environment construction permit for water main systems. No construction may commence on the public water system until this permit is issued.
5. For projects where the sanitary sewer will become part of the public system, the Township Engineer shall notify the applicant for additional copies of the plans, including current standard detail sheets and a completed Act 451 permit application, signed and sealed by a Michigan Registered Professional Engineer for processing and eventual issuance of a Michigan Department of Natural Resources and Environment construction permit for sanitary sewer systems. No construction may commence on the public sanitary sewer system until this permit is issued.
6. All other permits and payment of associated fees required to perform the work shall be the responsibility of the applicant and/or his designee. No construction may commence until permits, as applicable to the project, are

secured from the appropriate agencies. Such permits include, but are not limited to, the following:

- a. Road Commission for Macomb County permit for work within the county road right-of-way, including discharges from storm water management systems to county road drainage facilities, work within the right-of-way and approach permits.
- b. Utility permit from Macomb County Drain Commission
- c. Macomb County Drain Commissioner permit for storm water discharge and/or taps to county controlled drainage facilities.
- d. Macomb County Soil Erosion permit.
- e. N.P.D.E.S. permit for storm water discharge for areas disturbed greater than five (5) acres.
- f. Michigan Department of Natural Resources and Environment permit for all work and/or storm water discharges to a regulated wetland or floodplain.
- g. Michigan Department of Natural Resources and Environment permit for all public water main and sanitary sewers.
- h. Township Permit for Construction.
- i. When all approvals have been obtained and prior to starting construction, the applicant will be notified of the time and place for a pre-construction meeting.

SECTION 11.0 INSURANCE AND BONDING REQUIREMENTS

Financial Guarantee shall be provided in accordance with these Standards of the Charter Township of Washington.

1. Bonds
 - a. Site improvement Bond: After site plan approval or tentative preliminary subdivision approval by the Township Planning Commission, but before the issuance of building permits for buildings within the development, the Developer shall provide the Township 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 irrevocable bank letter of credit, whichever the Developer selects, or in the form of surety bond

acceptable to the Township. The amount of the deposit shall be set by the Township. The Township shall release funds from this deposit as site improvements are completed and approved by the Township approximately in proportion to the amount of improvements satisfactorily completed.

- b. A separate bond will be required for landscaping for 2 years for 50% of the cost of installation (including the plantings).
- c. If required, Contractor shall furnish to the Township a performance bond and labor and material bond with sureties satisfactory to the Township in an amount equal to one hundred (100%) percent of the contract price for the construction of the project. Performance bonds and Labor and Material bonds shall be executed on AIA (American Institute of Architects) documents.
- d. Permit bonds, as required by the Township, may be executed on documents other than AIA forms that are acceptable to the Superintendent.
- e. An acceptable three year Maintenance Bond shall be furnished to the Township before any development is approved and accepted. The term of the bond shall begin on or after the date of acceptance of the work by the Township. The amount of the bond shall be equal to 33% of the construction cost for water main, sanitary sewer, storm sewer and private roads. The correction of any defects or deficiencies in the improvements covered under the construction permit.

2. Insurance

- a. Contractors shall procure insurance and maintain it during the entire term of the contract with an insurance company with a current rating no less than A by A.M. Best Company and must be an admitted carrier. The Township and Township’s Consulting Engineer shall be listed as named additional insured in language acceptable to the Township. Insurance coverage shall be as follows:

i. Commercial Liability Occurrence Form

Commercial Liability Occurrence Form	
Limits:	\$1,000,000 each occurrence
	\$1,000,000 general aggregate
	\$1,000,000 personal & advertising injury
	\$1,000,000 products/completed operations aggregate
	\$500,000 fire damage to real property
	\$5,000 medical payments

Coverage shall not exclude contractual liability, explosion, collapse, or underground hazards.

- ii. Contractor shall procure Owners and Contractors Protective Liability.

Owners and Contractors Protective Liability Occurrence Form	
Limits:	\$1,000,000 each occurrence
	\$1,000,000 general aggregate

Township of Washington shall be Additional Named Insured, also naming the Township Engineer.

- iii. Commercial Automotive Liability

Commercial Automotive Liability	
Limits:	\$1,000,000 combined single limit
	Michigan No Fault as specified by law

Commercial automobile liability coverage must include coverage for all autos, owned and non-owned, and hired.

- iv. Workers compensation including Employers Liability Statutory

Employers Liability	
Limits:	\$500,000 each accident
	\$500,000 policy limit
	\$500,000 each employee

- v. If work involves exposure to a Federal Waterway, workers compensation coverage shall include coverage for Longshoreman's & Harbor Worker's Act and Maritime Liability.

Umbrella Liability	
Limits:	\$2,000,000 each occurrence
	\$2,000,000 general aggregate

Coverage should be umbrella form and not excess insurance. Maximum Self-Insured Retention Limit: \$10,000.

- vi. Pollution insurance may be required for some projects based on the type of work being performed and at the discretion of the Township Board or the Township Engineer.

Pollution Liability	
Occurrence or Claims Made Forms are acceptable	
Limits:	\$2,000,000 each claim/occurrence
	\$2,000,000 general aggregate/per project

Coverage shall include clean-up costs, on and off the site, and liability to third parties. Licensed and unlicensed insurers must maintain an A.M. Best rating of A.

- vii. Railroad Protective Liability: When the contract work includes construction crossing railroads, insurance in the name of the

railroad shall protect against claims for damages because of bodily injury or death and for property damage caused by the contractor or his subcontractors. The form of the policy and the amount of the liability coverage shall be determined by the railroad involved, and the insurance provided shall be acceptable to the railroad. The policy shall be issued in the name of the railroad.

- viii. Builders Risk/Installation Material Coverage: Contractor shall maintain property insurance for one hundred (100) percent of the completed value of any structure or one hundred (100) percent of the materials being used in the installation. If the Township of Washington maintains an interest in any building materials or installation materials, the Township shall be named as a Lenders Loss Payee.
- ix. Certificates of Insurance: Contractor shall furnish to the Township certificates of insurance evidencing the above coverages. Each policy and certificate shall grant a thirty-day notice of intent to cancel or change any such insurance. The Cancellation Clause of the Certificate of Insurance shall strike the words “endeavor to,” and “but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents, or representatives.”

Certificates of Insurance shall be furnished to the Township prior to commencement of any project, and the certificate shall verify that coverage is in effect until the Township approves and accepts the work performed by Contractor. If the project continues beyond the expiration date of Contractors Insurance, a renewal certificate must be provided, proving continuous coverage.

SECTION 12.0 DEPARTMENT OF PUBLIC WORKS PERMIT FOR CONSTRUCTION

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 Township. As part of this Application, the Developer shall submit the following:

1. Eight (8) sets of approved plans and specifications covering all construction proposed and approved for construction. The cover sheet of the set of plans shall contain the following statement signed by the Developer’s Engineer:

“I hereby certify that these are true copies of the plans approved by the Township on (Date) by (Developer’s Engineer P.E. No.)”

A cash deposit, computed according to the deposit schedule indicated in the Utility Fees Schedule, from which the final cost of construction inspection, administrations and/or construction water usage will be deducted.

3. A deposit for easement review shall be required prior to the issuance of a Permit for Construction
4. All required on-site and offsite easements shall be reviewed by the Township. Once they have been approved they shall be signed, recorded and submitted to the Township prior to the issuance of a Permit for Construction
5. All public improvements must be staked under the supervision of a Registered Engineer or Land Surveyor according to the latest approved plans. All plans used by the contractor for construction must be stamped “Approved For Construction” by the Township. Cut sheets must be prepared for all construction work by the engineer or surveyor responsible for the staking.
6. Prior to the start of construction, a pre-construction meeting shall be held. Attendees shall include the Developer’s Representatives and the Township’s Representatives. Other utility companies and reviewing agencies shall be invited to attend the pre-construction meeting.
7. Such other information and data as the Superintendent deems reasonably necessary to enable the approval of the Construction Permit.
8. Upon approval of the Construction Permit by the Township, the Developer’s Construction Contractor shall perform the construction under detail inspection by the Township or their representative. Please see Inspection section for additional requirements.
9. If the improvements installed include sewers, the Developer shall make a cash deposit to the Township in the amount indicated in the Utility Fees Schedule, from which the final cost of such sewer cleaning will be deducted. To pay for the cleaning of any sanitary sewers or storm sewers covered under the Permit during the period of construction of the buildings in the Development served by said Public and Private Utilities, or for a period of three (3) years, whichever is the lesser period. Applicant further agrees that all such costs incurred during said appropriate period may be deducted from the Cash Deposit (made with this Application) until such period as expired (after which time the remaining money will be returned).

10. Prior to the issuance of a Construction Permit, the Applicant shall satisfy all of the conditions listed below:
 - a. Payment to the Township for all costs of the inspection of the construction of Public Utilities and all other improvements covered under the Permit. Applicant will be responsible to supplement the Inspection Deposit (made with this application) with sufficient payment if the final costs of inspection exceed the Inspection Deposit.
 - b. To give notice to the Township at least 2 business days prior to starting any construction.

SECTION 13.0 INSPECTION

1. 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 Township 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.

The Developer shall pay a fee to cover all costs of inspection of work covered under the Permit for Construction of Site Improvements. The basis of the fee to be paid the Township shall be according to the Utility Fees Schedule.

3. The fee for construction inspection as determined above shall be deducted from the amount of the construction deposit paid upon application for a Permit for Construction as set forth in the Utility Fees Schedule. 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 deposit account will be returned to the Developer.
4. The Township 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:

- a. All of those types of construction where detailed inspection requirements are covered under the Township Sewer and Water Ordinance;
- b. All sanitary sewers (public or private) including connections thereto;
- c. All water supply pipe (public or private) including connections thereto;
- d. 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 drainagewater from premises other than the mobile home park site;
- e. All site grading for any site;
- f. All sidewalk and driveway construction installed outside of those rights-of-way that are dedicated to the County Road Commission; and
- g. All street and/or parking lot pavement installed outside of those rights-of-way that are dedicated to the Macomb County Road Commission.

SECTION 14.0 EASEMENTS AND DEDICATION OF IMPROVEMENTS

1. An appropriate Dedication of Improvements for all parts of the improvements expected to the 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 interest (certified by a recognized Title Insurance Company) shall accompany the copies of recorded easements. Dedication of Improvements shall be conveyed to the Township on forms approved by the Township.

Prior to final approval, the Developer shall furnish to the Township copies of acceptable recorded easements for all improvements as shown on the approved plans. A separate easement document is required even if the easements are shown in the Master Deed and/or Plat.

3. Easement requirements are as follows:
 - a. A written description and drawing of the easement shall be prepared by the Design Engineer and be presented to the Township for examination before recording. Easement description shall be on forms approved by the Township.

- b. Easements for storm sewers and open ditches shall have a minimum width of twelve feet for sewers 12 inches to 48 inches in diameter and a minimum width of twenty feet for sewers greater than 48 inches in diameter, centered upon the sewer or ditch.
- c. Provide a minimum 12 feet wide easement for access for maintenance and/or inspection of storm water management facilities.
- d. Provide a minimum 20 feet wide easement for access for maintenance and/or inspection of water mains and sanitary sewers. The easement shall extend 10 feet beyond all hydrants.
- e. An easement shall be provided for the pretreatment system to allow access for maintenance and/or inspection.
- f. When drainage is required to flow across an adjacent lot, a 12-foot wide storm water easement, centered on the drain, must be provided. This easement shall be dedicated to the Homeowners Association or Township with restriction against use or occupation of easements by the property owners and/or by other utilities in any manner that would restrict storm system maintenance or repair operations.
- g. A written description and drawing of the easement shall be prepared by the Designing Engineer and be presented to the Township for examination before recording.
- h. Easements for possible extensions shall be provided to the property lines at locations designated by the Township.
- i. The easement must be large enough to accommodate a slope of 1 horizontal to 1 vertical from the sewer invert to the edge of easement.
- j. The horizontal alignment of sewers that are not proposed to generally follow street, drive, or parking area pavements, shall parallel property lines or building lines.
- k. Temporary construction easements from adjacent property owners and/or permanent easements for off-site facilities shall be obtained by the applicant. Documents shall be in a form acceptable to the Township Attorney. Copies shall be submitted to the Township prior to construction plans being approved.
- l. No permanent structure shall be placed within or over the permanent easement.

- m. Easements for possible extensions shall be provided to the property lines at locations designated by the Superintendent of Department of Public Works.
- n. Water mains shall preferably be constructed outside of paved parking areas, streets, drives, and rear-yards.

SECTION 15.0 RECORD DRAWINGS

One full-scale mylar and four (4) blackline sets of all record drawings of sanitary sewer, storm sewer, water main, retention basin, paving and grading shall be provided to the Township, upon approval of the Record Drawings and to such County agencies as required prior to acceptance of the improvements by the Township. Two electronic copies shall be provided to the Township, upon approval of the record drawings.

15.00 GENERAL

This standard establishes the minimum requirements for record drawings in the Township.

Four (4) copies of record drawings of water main, sanitary sewer, storm sewer, detention and retention basins, drainage ditches and swales shall be submitted for review and approval prior to acceptance of the improvements by the Township.

15.10 PLAN REQUIREMENTS

Record drawing information shall be provided on the original approved construction drawings and shall contain, but not necessarily be limited to, the following items:

1. General Items
 - a. All record drawings shall contain a statement by an engineer or land surveyor, registered in the State of Michigan certifying that the project improvements indicated on the record drawings conform to the latest approved construction drawings. The statement shall be signed, dated and sealed by the State registered engineer or land surveyor.
 - b. All record drawing elevations shall be based on NAVD88 Datum. The record drawing coordinate system shall be the State Plane coordinate system as adopted by Macomb County.
 - c. All record drawing information shall be clearly marked as such.
 - d. Record drawing locations shall be shown on the plans to an accuracy of one (1) foot horizontal and 0.01 foot vertical.

- e. All location changes of 10 feet or more horizontally and .5 feet vertically shall be redrawn on the plan and the original location shall be crossed out (X-ed) on the plan.
- f. Upon final approval of the record drawings, the proprietor's engineer shall provide the Township with an electronic copy of the record drawing. This is required so that water mains, sanitary and storm sewer improvements can be added to the Township's G.I.S. database, and the costs incurred are at the proprietor's responsibility. The electronic files shall conform to G.I.S./Shape file format or AutoCad (DWG) format.

2. Water mains

- a. Location of all water mains with respect to property line, back of curb or edge of pavement.
- b. Rim elevation of gate wells.
- c. Fire hydrant bury line/arrow elevations.
- d. Top of pipe elevation at gate wells.
- e. The distance between the hydrant and the center line of the water main.
- f. Accurately locate all utilities, both horizontally and vertically, (storm, sanitary, water main etc.) where the recommended separation horizontally or vertically is less than that required ten (10) feet horizontal and 18" vertical.
- g. The Liber and Page number for any easement obtained for water main as well as any existing easement involved in the project shall be noted.
- h. Northing and easting coordinates shall be shown on the record drawings for all hydrants and gate valves.
- i. Materials installed:
 - i. Size, length, type, class, joint and manufacturer of pipe.
 - ii. Size, brand and manufacturer of valves and hydrants.
 - iii. A total record drawing quantity list, on the cover sheet.

3. Sanitary and Storm Sewer
 - a. Location of all sewers with respect to property line, back of curb or edge of pavement.
 - b. Rim elevation of all structures.
 - c. Pipe invert elevations at all structures, end-sections or headwalls.
 - d. Percent grade of all pipe runs.
 - e. Length of pipe from center to center of manholes, and length of stubs out of manholes.
 - f. Length and location (witnessed to three (3) points) of any casing pipe.
 - g. Materials installed:
 - i. Size, type, class, joint and manufacturer of pipe.
 - ii. For pressure sewers, a diagram of all appurtenances in each valve structure shall be drawn with flow arrow.
 - iii. A total record drawing quantity list.
 - h. The Liber and Page number for each easement obtained for the construction of sewer as well as any existing easement involved in the project shall be noted.
 - i. Northing and easting coordinates shall be shown on the record drawings for all storm and sanitary manholes.
 - j. House lead locations:
 - i. Information shall be obtained from inspection records and transferred to the plans.
 - ii. Location of wye measured from downstream manhole.
 - iii. Length of lead.
 - iv. Length of any risers, if placed.
 - v. Location of end of lead measured from downstream manhole.
4. Detention/Retention/Infiltration Basins

- a. Width and length of top and bottom of basin.
 - b. Elevations at sufficient intervals to verify basin side slopes and capacity.
 - c. Centerline location, width and elevations, and material of basin overflow facility spillway or control structure.
 - d. Invert elevation of inlet and outlet pipes.
 - e. Basin outlet restriction size.
 - f. Calculations of the basin volume between the high water elevation and the invert of the outlet pipe for a detention basin, and the bottom of the basin for a retention basin (based on as-built elevations).
 - g. Freeboard elevation all around the basin.
5. Drainage Ditches and Swales
- a. Location of centerline of all ditches and swales with respect to property lines, the bottom low and the side high elevations of these swales.
 - b. Elevations showing drainage patterns of paving and grades between impervious pavements and property lines, showing how they match adjacent abutting properties or phase.

SECTION 16.0 FINAL ACCEPTANCE

In addition to the record drawings, and prior to final approval, Dedications of Improvements and Permanent Easements for Water Mains, and Sanitary Sewers, storm, cross-access, landscaping (including Exhibits A & B) must be provided, signed, and notarized by the proprietor, using Township Attorney's forms.

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:

1. To furnish sworn statements and waivers of lien upon completion of construction, indicating that all labor and materials have been paid in full.

To furnish the required number of sets of "as-builts" or "record drawings" drawings, mylars and digital record indicating as-built information as

required by the Engineering Design Standards, or to provide fees and digital records as required to allow the Township's Consulting Engineer to produce the required as-built data.

3. To secure the written approval from the Township of all construction covered under this Permit before using any Public or Private Utilities covered under this Permit.
4. Building permits can be issued prior (at the discretion of the Building Official) to final acceptance if a monetary bond covering the cost of installing the remaining improvements is provided to the Township.
5. Certificates of Occupancy will not be issued for any residential or commercial developments until all project improvements have been accepted (per requirements).