

WAYNE COUNTY RULES, SPECIFICATIONS & PROCEDURES FOR CONSTRUCTION PERMITS



**DEPARTMENT OF PUBLIC SERVICES
Engineering Division – Permit Office
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RESOLUTION

No. 2008-596

By Commissioner Williams and Co-sponsored by Commissioner Varga

WHEREAS, Act 200 of the Public Acts of 1969 provides that the Board of County Road Commissioners may adopt its own rules necessary for the administration of the act after a public hearing; and

WHEREAS, the County of Wayne has delegated the executive duties of the County Road Commission to the Wayne County Executive and the legislative duties to the Wayne County Commission; and

WHEREAS, the County has promulgated rules entitled "Wayne County Rules, Specifications, and Procedures for Construction Permits" for administration of the aforesaid act; and

WHEREAS, after the required public notice was published, a public hearing was held on at which time there were no objections; and

WHEREAS, the County has determined that the rules as promulgated are consistent with the public safety and are based upon the traffic volumes, drainage requirements, and the character and use of land adjoining the highways and other requirements of the public interest, and that the rules do prescribe reasonable standards for the design and the location of driveways; and

WHEREAS, it is deemed appropriate to adopt the aforementioned rules so as to regulate driveways, banners and parades with public safety and with management of public right-of-way;

Now therefore be it

RESOLVED, by the Wayne County Commission this 16th day of October, 2008 that the "Wayne County Rules, Specifications, and Procedures for Construction Permits" be, and are hereby, adopted.

[Wayne County Rules, Specifications and Procedures on File]

(2008-30-050)

Preface

This document has been prepared to consolidate all of the rules, specifications and procedures for the issuance of permits to conduct certain activities within the road right-of-way, drains, easements, park property and other facilities under the jurisdiction of Wayne County.

The purpose of the permit process is to manage access to these County facilities. The rules, specifications and procedures within this document are necessary in order to preserve the functional integrity of the County road, drain and park systems and to promote their safe and efficient operation. Additionally, the County has designated that the provisions of the Wayne County Storm Water Ordinance be administered and regulated through the permit process.

The Wayne County Department of Public Services is responsible for administering these rules, specifications and procedures in conformance with applicable provisions of federal, state and county law. Specific standards, specifications, permit conditions and procedures are necessary to determine whether permit applicants' plans are acceptable. The goal of the Department of Public Services' Permit Office is to provide timely, professional and equitable service to all permit applicants.

Should any part of these rules, specifications and procedures be found by public act of law or a court of competent jurisdiction to be invalid, void or illegal, such finding shall in no way affect, impair or invalidate any other provision contained in these procedures and regulations and such other provisions shall remain in full force and effect. To this end, these procedures and regulations are declared to be severable.

Questions regarding these rules, specifications and procedures for permit activities may be directed to the Department of Public Services' Permit Office at:

33809 Michigan Avenue
Wayne Michigan 48184
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Introduction

This manual represents the initial compilation of the rules, specifications and procedures established for permit construction within Wayne County. The content has been assembled and updated from a variety of sources, including longstanding WCDPS policies, engineering practices, design specifications, construction standards, procedural documents, memorandums and other published sources. The Permit Office has provided this manual as a necessary and helpful resource for those wishing to prepare and submit applications for future permit work within Wayne County.

The book also serves as a framework and presentation document for the standard plans which have been established by the WCDPS for permit construction. These standard plans embody the design and construction philosophy and specifications that provide a comprehensive basis for Wayne County mandated rules which are intended to maintain the integrity, safety and maintainability of the County road and drainage systems.

The book is organized into logical sections, each focusing on integral parts of the permit operations conducted by the WCDPS. The sections are intended to be understood, integrated and applied in the context of the proposed work. For example, a typical commercial driveway construction project may draw provisions from the sections on *Driveway Design*, *Underground Construction*, *Right-of-Way Improvements*, *Maintaining Traffic and Traffic Controls*, and *Restoration*. Section 2: *Permitting Process*, provides detailed information on the permit business procedures, from application, to issuance and final release. This section describes in detail, the application, insurance, fee, cost and legal requirements for obtaining a permit as well as other procedural matters.

The softcopy or PDF version of this document contains numerous links and references to material on the internet. The links may be accessed anywhere in the document by holding down the Control Key and clicking on the linked text that is underlined in blue. The links include a variety of reference items including the Wayne County Standard Plans for Permit Construction. The hardcopy version of the manual includes an appendix with copies of the standard plans as well.

For current information pertaining to the forthcoming release of this manual, please visit Waynecounty.com – Department of Public Services – Engineering Division – Construction Permit Office.

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SECTION 1: GENERAL PROVISIONS

RULE 1.1 ACTIVITIES THAT REQUIRE PERMITTING

- 1.1.1 It is the responsibility of the individual, governmental unit/agency or organization who desires to perform work impacting a Wayne County 1) road right-of-way, 2) park, 3) property, 4) drain or drain easement, or 5) any development that affects the watershed to secure a permit that authorizes the activity. The types of activities that may require a permit include:
- a) Construct, reconstruct, relocate, replace, widen, surface, or resurface a driveway or private road approach to a road under Wayne County jurisdiction;
 - b) Operate, use or maintain a driveway or road connecting to a public road or right-of-way under the jurisdiction of Wayne County;
 - c) Construct, reconstruct, relocate, replace, surface, resurface or widen a Wayne County road;
 - d) Install, maintain or connect any surface-level, underground or overhead public or private utility, pipeline, wire, conduit, sewer or associated appurtenance;
 - e) Conduct soil borings, surveying, geophysical, hydrological or other field operations;
 - f) Erect/suspend a banner, decoration or similar object;
 - g) Close a section of a County road to normal traffic for the purpose of staging a parade, marathon, festival, demonstration or similar activity;
 - h) Install, repair or maintain a non-motorized pathway;
 - i) Conduct grading, snow removal, tree trimming or tree removal;
 - j) Install or maintain landscaping including berms, plantings, lights, signs, entrance markers or other decorative facilities.
 - k) Any other activity which requires excavation in the right-of-way or County drain easement, working from the right-of-way to reach abutting property or disruption of normal traffic operations or patterns;
 - l) Change the manner of use of a property abutting a highway (viz; a change from residential to commercial use or in the type of commercial operation), or property improvements that impact the operation of roadway traffic flow may require alterations in the number, design and/or location of driveways.
 - m) Construction activity that impacts storm water runoff into or around new or existing road rights-of-way, in or around County drains, within new subdivisions, mobile home developments, new condominium developments or property owned by the County. Refer to the Wayne County Storm Water Management Program for information concerning the County's Storm Water Management Regulations.

RULE 1.2 AUTHORITY

- 1.2.1 Wayne County is the jurisdictional authority for a substantial number of public roads lying outside, as well as within, the incorporated cities and villages within Wayne County. This was first established by Act 283, PA of 1909, as amended, being MCL §220.1 et seq., commonly known as the County Road Law.
- 1.2.2 MCL §691.1402 et seq., further provides, “Each governmental agency having jurisdiction over any highway shall maintain the highway in reasonable repair so it is reasonably safe and convenient for public travel. Any person sustaining bodily injury or damage to his property by reason of failure of any governmental agency to keep any highway under its jurisdiction in reasonable repair and in condition reasonably safe and fit for travel may recover the damages suffered by him from such governmental agency.” This section provides a specific and narrowly limited exception to governmental immunity.
- 1.2.3 Operations within the County road right-of-way other than normal vehicular or pedestrian travel require a permit when conducted by anyone other than Wayne County personnel, agents or Contractors. The statutory authority of Wayne County to require compliance with permit requirements is predicated upon its jurisdictional authority and is set forth in various statutes.
- 1.2.4 These statutes include, without limitation and in no particular order, the following:
- a) MCL §247.321 et seq., known as the Driveways, Banners, Events, and Parades Act, sets forth parameters regarding the regulation of driveways, banners, events and parades upon and over highways. The term “driveways” is broadly defined to include all points of access to public roads. The statute places responsibility for the regulation of such activities upon the highway authority. Wayne County is the highway authority for all County roads.
 - b) MCL §224.19b et seq., states, “a person, partnership, association, corporation or governmental entity shall not construct, operate, maintain or remove a facility or perform any other work within the right-of-way of a County road except sidewalk installation and repair without first obtaining a permit from the County road commission having jurisdiction over the road...”
 - c) MCL §560.101 et seq., known as the Land Division Act, regulates the subdivision of land. It requires certain approvals by Wayne County, including the development and dedication of any public roads within a proposed subdivision. The details of Wayne County’s role with respect to the Land Division Act are covered in Section 14: *Subdivision Rules and Regulations*.
 - d) MCL §247.171 et seq., prohibits obstructions and encroachments on public highways and provides for the removal thereof, and further prescribes the conditions under which public utility companies, cable television companies and municipalities may enter upon public roads, bridges and streets for the construction of their utility facilities.
 - e) MCL §257.1 et seq., known as the Michigan Vehicle Code, governs the operation of vehicles on County roads.

RULE 1.3 STANDARDS & SPECIFICATIONS FOR DESIGN AND CONSTRUCTION

- 1.3.1 The non-exhaustive list of engineering authorities detailed below will provide guidance to Applicants and Wayne County engineers and staff. These authorities do not supersede the need for sound engineering judgment in conformity with accepted engineering principles.
- 1.3.2 Wayne County hereby adopts by reference and incorporates in these procedures and regulations as is fully stated herein the most current editions of the following list of publications. The Michigan Department of Transportation (MDOT) Standard Specifications for Construction shall govern, except where modified by Wayne County Standards, Special Provisions and Rules and Guidelines for Permit Construction. In the event of conflicts, Wayne County standards and/or supplemental provisions will prevail or the most demanding guide will prevail.
- a) AASHTO - A Guide For Accommodating Utilities Within Highway Right-of-way
 - b) AASHTO - A Policy on Geometric Design of Highways and Streets
 - c) AASHTO - Roadside Design Guide
 - d) APWA Position Statement, Public Right-of-Way Mgt, September 22, 1999
 - e) ASTM (American Society for Testing and Materials)
 - f) ITE Traffic Engineering Handbook
 - g) ITE Trip Generation Handbook and Manual
 - h) ITE Turning Templates
 - i) Manual on Uniform Traffic Control Devices
 - j) MDOT Bridge Design Manual
 - k) MDOT Design Survey Manual
 - l) MDOT Drainage Manual
 - m) MDOT Geometric Design Guide
 - n) MDOT Maintaining Traffic Typical
 - o) MDOT: The Access Management Guidebook
 - p) MDOT Road and Bridge Standard Plans & Details
 - q) MDOT Road Design Manual
 - r) MDOT Standard Specifications For Construction
 - s) TRB, Highway Capacity Manual
 - t) Wayne County Road Design Manual
 - u) Wayne County DPS Special Provisions To 2003 MDOT Specifications
 - v) Wayne County Standard Plans for Permit Construction
 - w) Wayne County Storm Water Management Program

RULE 1.4 DEFINITIONS

- 1.4.1 **ACCESS:** A way or means of approach providing entrance to or exit from a public road to or from property adjoining the road.
- 1.4.2 **ACCESS CONNECTION:** Any driveway, lane, road or any other way of providing for the movement of vehicles to or from the public road system to or from abutting property.
- 1.4.3 **ACCESS MANAGEMENT:** The process of developing, providing and managing reasonable access while preserving the flow of traffic and maintaining safety, capacity and proper speed on the roadway system.
- 1.4.4 **ACCELERATION LANE:** A lane, including a taper, constructed for the purpose of enabling a vehicle entering the roadway to increase its speed to a rate at which it can safely merge with through traffic.
- 1.4.5 **ADT:** The average two-way daily traffic volume. It represents the total average of daily traffic. Where daily data is not available, data from a shorter period may sometimes be used.
- 1.4.6 **ALTERNATIVE ACCESS:** The ability of any vehicle to enter a roadway through a roadway of lower functional classification.
- 1.4.7 **AASHTO:** American Association of State Highway and Transportation Officials.
- 1.4.8 **APWA:** American Public Works Association.
- 1.4.9 **ASTM:** American Society for Testing and Materials
- 1.4.10 **ATSSA:** American Traffic Safety Services Association.
- 1.4.11 **APPLICANT:** A public or private entity or a person making application for a permit to construct, operate, use and/or maintain a facility within the road right-of-way for the purpose outlined within the application. The Applicant may be a property owner, a property owner's authorized legal agent or Contractor, a public or private utility or a governmental agency.
- 1.4.12 **APPLICANT'S ENGINEER:** The Professional Engineer registered in the State of Michigan employed by the Applicant to prepare plans and supervise construction.
- 1.4.13 **APPROACH:** A set of lanes accommodating all left-turn, through and right-turn movements arriving at a driveway, street or intersection from a given direction.
- 1.4.14 **ARTERIAL:** A major roadway intended primarily to serve through traffic, where access is carefully controlled; generally roadways of regional importance, intended to serve moderate to high volumes of traffic traveling relatively long distances and at higher speeds.
- 1.4.15 **AUGERING:** The procedure of making a hole below the ground surface by the use of an earth auger.

- 1.4.16 **AUXILIARY LANE:** Any lane striped for use, but not for through traffic including without limitation right-turn lanes (deceleration lanes) , bypass lanes (passing lanes or flares) and left-turn lanes.
- 1.4.17 **AVERAGE DAY:** A Tuesday, Wednesday or Thursday for most uses. The average day may be a Saturday or Sunday for those uses which generate higher peak-hour traffic volumes on Saturday or Sunday than during midweek.
- 1.4.18 **BACKFILL:** Replacement of acceptable soil or granular material in an excavation.
- 1.4.19 **BANNER:** Any arrangement of words, lettering, symbols or decoration, including a holiday decoration suspended over any portion of a road or adjacent to a travel lane.
- 1.4.20 **BUFFER AREA:** An area of the public right-of-way adjacent to a roadway, which serves as a physical barrier between road traffic and activity or obstruction on the adjacent private property.
- 1.4.21 **CARRIER PIPE:** Pipe directly enclosing a transmitted liquid, gas or solid.
- 1.4.22 **CASING PIPE:** A larger pipe enclosing a carrier pipe.
- 1.4.23 **CENTER LEFT TURN LANE:** A continuous lane located between opposing traffic streams that provides a refuge for vehicles to complete left turns from both directions.
- 1.4.24 **CHANNELIZATION:** The separation of conflicting traffic movements into defined paths of travel by use of traffic islands or pavement markings.
- 1.4.25 **CIRCULAR DRIVEWAY:** A private driveway which enters and leaves private property at two separate points within the same frontage.
- 1.4.26 **CLEAR VISION AREA:** Land acquired and used by Wayne County for the purpose of maintaining unobstructed vision.
- 1.4.27 **CLEAR ZONE:** The total roadside border area, starting at the edge of the traveled way, available for safe use by errant vehicles. This area may consist of a shoulder, a recoverable slope, a non-recoverable slope and/or a clear run-out area. The desired width is dependent upon traffic volumes, speeds and roadside geometry.
- 1.4.28 **COLLECTOR ROAD:** A road intended to move traffic between local roads and arterial roads.
- 1.4.29 **COMMERCIAL DRIVEWAY:** A driveway serving a commercial establishment, industry, governmental or educational institution, hospital, church, apartment building, condominium, manufactured housing community or any other facility not included within the definitions of residential, field or utility structure driveways.
- 1.4.30 **CONDOMINIUM PROJECT:** A plan or project consisting of not less than two condominium units established in conformance with Act 59.
- 1.4.31 **CONFLICT POINT:** An area where intersecting traffic merges, diverges, or crosses.

- 1.4.32 **CORNER CLEARANCE:** The distance from an intersection of a public or private road to the nearest access connection, measured from the closest edge of the pavement of the intersecting road to the closest edge of the pavement of the access connection along the traveled way.
- 1.4.33 **COUNTY:** The County of Wayne, Michigan
- 1.4.34 **COUNTY HIGHWAY ENGINEER:** Per MCL §224.10, a Professional Engineer employed by the Wayne County Department of Public Services who shall make surveys, prepare plans and specifications for roads, bridges and culverts, and exercises general supervision over construction to insure that the plans and specifications are strictly followed.
- 1.4.35 **COUNTY ENGINEER:** The County Highway Engineer or the Engineer designated by the County Highway Engineer, acting directly or through authorized representatives, who is responsible for engineering supervision of all Permit Office activities including plan review and inspection.
- 1.4.36 **COUNTY SPECIFICATIONS:** A general term to all written directions, provisions and requirements concerning the design and performance of permit activities.
- 1.4.37 **CROSS ACCESS:** An easement or service drive providing vehicular access between two or more contiguous sites so that the driver does not need to re-enter the public road system to pass from one site to the other.
- 1.4.38 **DECELERATION LANE:** A lane, including a taper, constructed for the purpose of enabling a vehicle to leave the through traffic lane at a speed equal to or slightly less than the speed of traffic in the through lane and then decelerate to a stop or execute a slow-speed turn. Also called a "decel lane"; it denotes a right turn lane or a left turn lane into a development.
- 1.4.39 **DEDICATION:** A conveyance of property by a private owner or public agency to the County.
- 1.4.40 **DEPTH OF COVER:** Depth between grade of roadway, ditch or other surface and buried utility pipe, culvert, communication cable or electrical conductor.
- 1.4.41 **DESIGN SPEED:** A selected speed used to determine the various geometric design features of a roadway, based on the topography, anticipated operating speed, adjacent land use and the functional classification of the roadway.
- 1.4.42 **DESIGNATED ROUTES:** Paved roads designed and constructed to AASHTO and MDOT all-season road standards and/or roads that are so designated as such by Wayne County.
- 1.4.43 **DIRECT BURIAL:** Installing a utility facility underground without encasement by plowing or trenching.
- 1.4.44 **DIRECTIONAL DRILLING:** Pushing a rod completely through the soil and then pulling a reamer and casing or carrier pipe back through the bore.

- 1.4.45 **DIRECTIONAL DRIVEWAY:** A driveway system designed so that traffic leaving the road is separated from and does not conflict with traffic entering the road (with critical turning movements to and from the property restricted) at certain access points. (Also known as a “one way drive”.)
- 1.4.46 **DIRECTIONAL MEDIAN OPENING:** An opening in a median that provides for specific movements and physically restricts other movements.
- 1.4.47 **DIVIDED DRIVEWAY:** A driveway with a raised median between ingress and egress lanes.
- 1.4.48 **DIVIDED ROADWAY:** A roadway on which traffic traveling in opposite directions is physically separated by a median.
- 1.4.49 **DRIVEWAY:** Any lane, road or other way providing vehicular access to or from a public road from or to the property adjoining the road.
- 1.4.50 **DRIVEWAY ALLIGNMENT:** The distance between the centerlines of two driveways on opposite sides of an undivided roadway.
- 1.4.51 **DRIVEWAY FLARE:** A triangular pavement surface at the intersection of a driveway with a public road that facilitates turning movements and is used to replicate the turning radius areas with curb and gutter construction.
- 1.4.52 **DRIVEWAY OFFSET:** The setback distance from a defined reference line to face of curb or edge of pavement.
- 1.4.53 **DRIVEWAY RETURN RADIUS:** A circular pavement transition at the intersection of a driveway with a road that facilitates turning movements to and from the driveway.
- 1.4.54 **DRIVEWAY SPACING:** The distance between the centerlines of driveways on the same side of the road.
- 1.4.55 **DRIVEWAY WIDTH:** The width of a driveway at the road right-of-way line.
- 1.4.56 **DUAL SERVICE DRIVEWAYS:** Two adjacent commercial driveways designed to facilitate traffic movement between a roadway and a single private property by use of one driveway to enter and the other driveway to exit the property.
- 1.4.57 **EASEMENT:** The right to use the land of another for a specific purpose. An easement does not give the holder a right of “possession” of the property, only a right of use.
- 1.4.58 **EGRESS:** The exit of vehicular traffic from abutting property to a road.
- 1.4.59 **ENCROACHMENT:** The use of County rights-of-way by anyone other than County personnel or authorized agents for any specific purpose other than that generally intended.
- 1.4.60 **FIELD DRIVEWAY:** Any driveway serving a farm yard, cultivated or uncultivated field, timberland or undeveloped land not used for industrial, commercial or residential purposes.

- 1.4.61 **FRONTAGE:** The private property that abuts the road right-of-way.
- 1.4.62 **FRONTAGE ROAD:** An access road that generally parallels a major public roadway and runs between the right-of-way of the major roadway and the front building setback line and provides access to private property while separating it from the major roadway.
- 1.4.63 **GAP:** The median time headway (in seconds) between vehicles in a major traffic stream which will permit vehicles to cross through or merge with the major traffic stream under prevailing traffic and roadway conditions.
- 1.4.64 **GOVERNMENT AGENCY:** Classification as a Governmental Agency requires the party to be a political subdivision of the State, (County, township, city or village) or a sub-agency or combination thereof. Examples include, without limitation, a drainage district, a combined water distribution or sanitary sewer district, in certain circumstances a school board, etc. An association of individuals or private entities is not recognized as a governmental agency.
- 1.4.65 **GRADE (GRADIENT):** The rate or percentage change in slope, measured along the centerline of a roadway or access point, either ascending or descending from or along the roadway.
- 1.4.66 **HMA:** Hot Mix Asphalt.
- 1.4.67 **HORIZONTAL AUGER BORING (HAB):** A construction method for forming a bore from a drive pit to a reception pit, by means of rotating cutting head. Spoil is removed back to the drive shaft by helically wound auger flights rotating inside the steel casing being installed between the drive pit and the reception pit.
- 1.4.68 **HORIZONTAL DIRECTIONAL DRILLING (HDD):** A steerable system for the installation of pipes, conduits and cables using a shallow arc, a fluid filled pilot bore is drilled without rotating the drill string, and is enlarged by a wash over pipe and back reamer to the size required for the product pipe.
- 1.4.69 **INGRESS:** The entrance of vehicular traffic to abutting property from a roadway.
- 1.4.70 **INSPECTION:** The close observation and examination of various construction operations and the product thereof as a means of determining compliance with standards for activities conducted in the right-of-way.
- 1.4.71 **INTERPARCEL CIRCULATION:** The ability of vehicular traffic to move between adjacent properties without reentering a public roadway.
- 1.4.72 **INTERSECTION:** The general area where two or more roadways join or cross, including the roadway and roadside facilities for traffic movements within the area.
- 1.4.73 **INTERSECTION SIGHT DISTANCE:** The distance available at an intersection which will allow drivers of stopped vehicles a sufficient view of the intersecting roadway to decide when to enter or cross the intersecting roadway.
- 1.4.74 **ITE:** Institute of Transportation Engineers.
- 1.4.75 **LAND:** All areas occupied by real property.

- 1.4.76 **LEVEL OF SERVICE (LOS):** A qualitative measure describing operational conditions within a traffic stream; generally described in terms of such factors as speed and travel delay, freedom to maneuver, traffic interruptions, comfort, convenience and safety.
- 1.4.77 **LIMITED ACCESS:** Road right-of-way to which no person, including owners or occupants of abutting lands, shall have legal right of access except at limited access points established by the public authority having jurisdiction over the road, street or highway.
- 1.4.78 **LOCAL ROAD:** A roadway with the primary function of providing access to and from adjacent properties and to and from roadways of a higher functional classification.
- 1.4.79 **LOCAL TRAFFIC:** Traffic that uses a particular road or route to access residences, businesses or other abutting properties and has no alternative route to said residence, business or other abutting property.
- 1.4.80 **MEDIAN:** The portion of a divided roadway or divided entrance separating the traveled ways from opposing traffic.
- 1.4.81 **MEDIAN CROSSING:** A gap in the median provided for crossing or turning traffic.
- 1.4.82 **MICHIGAN COORDINATE SYSTEM:** The system of identification of land defined in MCL § 54.231 to MCL § 54.239.
- 1.4.83 **MICRO-TUNNELING (MT):** A boring process that simultaneously installs pipe as soil is being excavated and removed.
- 1.4.84 **MDEQ:** The Michigan Department of Environmental Quality.
- 1.4.85 **MDOT:** The Michigan Department of Transportation.
- 1.4.86 **MUTCD:** The current edition of the Manual on Uniform Traffic Control Devices.
- 1.4.87 **MUNICIPALITY:** A city, village or township in the State.
- 1.4.88 **NATIONAL FUNCTIONAL CLASSIFICATION SYSTEM:** A system used to group public roadways into classes according to their purpose in moving vehicles and providing access.
- 1.4.89 **NOTICE OF NONCOMPLIANCE:** Instrument used by Wayne County to correct conditions that, in the judgment of Wayne County, are unsafe, causing unacceptable delay and inconvenience to the public, damage to the roadway, drainage systems, appurtenances and/or to public or private property. Work Authorization shall be issued after reasonable efforts to notify the Applicant, Permit Holder or property owner. The work authorizations shall provide for labor and equipment to install signs, barricades or barriers and other equipment and materials required to restore the right-of-way.
- 1.4.90 **PASSING LANE:** Section of road that provides adequate space to get ahead of slower moving vehicles.
- 1.4.91 **PAVEMENT GAP:** Method of staging construction to maintain access.

- 1.4.92 **PCC:** Portland Cement Concrete.
- 1.4.93 **PEAK HOUR:** The one-hour period within a day in which a particular portion of the road system experiences its highest hourly volume of traffic flow. Peak hours may be identified during the morning (A.M. peak hour), the afternoon or evening (P.M. peak hour), or the hour of highest volume of traffic entering or exiting a site (peak hour generator).
- 1.4.94 **PERMIT HOLDER:** Once a permit is issued, the Applicant or a person, partnership, corporation or entity under sufficient authority and control of the Applicant to perform the work requested by the Applicant in accordance with the requirements set forth in these rules and the terms and conditions of a permit issued by Wayne County.
- 1.4.95 **PERMIT INSPECTOR:** A technician assigned by the Permit Office, with the responsibility of working with the Permit Holder or Permit Holder's Contractor while actual construction is ongoing to ensure construction is in compliance with the Wayne County's policies, regulations, and standards as stated on the approved permit plans.
- 1.4.96 **PERMIT OFFICE:** The Permit Office of the Department of Public Services' Engineering Division of Wayne County.
- 1.4.97 **PIPE JACKING (PJ):** A construction method of directly installing pipes behind a Shield Machine by hydraulic jacking from a drive shaft such that the pipes form a continuous string in the ground. Usually, personnel are required inside the pipe to perform the excavation or soil removal process. The excavation can be performed manually or mechanically.
- 1.4.98 **PLAT:** A map or chart of a subdivision of land.
- 1.4.99 **PLOWING:** The placing of cable, conductors or flexible pipe underground by a plow designed so as to permit the cable, conductor or pipe to be fed through the plow blade to a minimum specified depth with minimum displacement of soil.
- 1.4.100 **PRELIMINARY PLAT:** A map showing the salient features of a proposed subdivision submitted to an approving authority for preliminary consideration.
- 1.4.101 **PRIVATE ROAD:** A road which is not under the jurisdiction of a local or State government and which serves more than four businesses or homes.
- 1.4.102 **PROFESSIONAL ENGINEER:** A civil engineer who is a professional engineer licensed under Article 20 of the Michigan Occupational Code and MCL § 339.2001 to MCL § 339.2014.
- 1.4.103 **PROFESSIONAL SURVEYOR:** A surveyor licensed under Article 20 of the Michigan Occupational Code and MCL § 339.2001 to MCL § 339.2014.
- 1.4.104 **PROPERTY OWNER:** A person, firm, association, partnership, corporation or combination of any of these or any other party having an ownership interest in land.
- 1.4.105 **PROPRIETOR:** A person, firm, association, partnership, corporation, or combination of any of them, who submits a plat for processing under the Land Division Act.

- 1.4.106 **PUBLIC UTILITY:** A person, firm, corporation co-partnership or municipal or other public authority that provide gas, electricity, steam, telephone, sewer or other services of a similar nature.
- 1.4.107 **REAR SERVICE DRIVE:** A local road or private road typically located behind principal buildings and parallel to an arterial roadway for service to abutting properties for the purpose of controlling access to the arterial road.
- 1.4.108 **REGIONAL TRAFFIC ANALYSIS:** A traffic impact study for very high traffic-generating uses typically covering a large geographic area and may include traffic condition projections for up to a twenty year period.
- 1.4.109 **REPLAT:** The process of changing the map, plat or boundaries of a recorded subdivision plat or part thereof.
- 1.4.110 **RESIDENTIAL DRIVEWAY:** A driveway serving one single-family dwelling.
- 1.4.111 **RESIDENTIAL SHARED DRIVEWAY:** A driveway serving not more than three (3) single-family dwellings.
- 1.4.112 **RESOLUTION:** A resolution passed by a local governing body authorizing a specific official or officials to apply to the Wayne County Permit Office for an individual permit or for all permits, in the case of a blanket resolution, and wherein the governing body agrees to indemnify and save harmless Wayne County and all County employees from claims of every kind arising out of operations authorized by such permit(s) as is (are) issued.
- 1.4.113 **REVERSE FRONTAGE:** Frontage on an access road constructed at the rear of a lot or lots fronting on a major roadway.
- 1.4.114 **RIGHT-OF-WAY:** The land over which Wayne County has jurisdiction and which is subject to use for highway purposes. Right-of-way may be obtained by deed, statutory or plat dedication, condemnation or a ten-year period of use pursuant to statute. It may be held either in fee or as an easement.
- 1.4.115 **RIGHT-OF-WAY LINE:** A boundary along the road frontage which denotes the limit of width of the right-of-way.
- 1.4.116 **ROAD:** A way for vehicular traffic, whether designated as a street, highway, thoroughfare, freeway, expressway, parkway, through-way, avenue, boulevard, lane, cul-de-sac, drive, court or other title including the entire area within the right-of-way.
- 1.4.117 **ROADWAY:** That portion of a road improved, designed or ordinarily used for vehicular travel exclusive of the berm or shoulder. In the event a road includes two or more separate roadways, "roadway" refers to any such roadway separately, but not to all such roadways collectively.
- 1.4.118 **SERVICE ROAD:** A public or private road auxiliary to an arterial roadway that provides access to parcels surrounding an arterial roadway and that typically serves nonresidential development.

- 1.4.119 **SHARED ACCESS:** A single connection serving two or more adjoining lots or parcels.
- 1.4.120 **SIGHT DISTANCE:** The length of the roadway ahead that is visible to the driver. The available distance on a roadway should be sufficiently long to enable a vehicle traveling at or near the design speed to stop before reaching a stationary object in its path.
- 1.4.121 **SIGHT TRIANGLE:** An area of unobstructed sight distance along both approaches of an access connection.
- 1.4.122 **STANDARD PLANS:** The official standards for permit construction under the jurisdiction of Wayne County approved by the WCDPS Permit Office.
- 1.4.123 **STOP WORK ORDER:** A written notice issued by Wayne County directing immediate cessation of illegal and/or non-permitted work within Wayne County right-of-way.
- 1.4.124 **STOPPING SIGHT DISTANCE:** The sum of two distances: (1) the distance traversed by the vehicle from the instant the driver sights an object necessitating a stop to the instant the brakes are applied; and (2) the distance needed to stop the vehicle from the instant brake application begins.
- 1.4.125 **STORAGE LENGTH:** Lane footage added to a deceleration lane to store the maximum number of vehicles likely to accumulate during a peak period so as not to interfere with the through-travel lanes.
- 1.4.126 **STUDY AREA:** The geographic area containing site access points and critical intersections (and connecting road segments) which are expected to be affected by traffic generated by a development.
- 1.4.127 **SURVEYOR:** A surveyor licensed under Article 20 of the Michigan Occupational Code and MCL § 339.2001 to § 339.2014.
- 1.4.128 **TAPER:** Widening of pavement to allow the redirection and transition of vehicles around or into an auxiliary lane. There are two types: (a) redirect tapers necessary for the redirection of vehicles along the traveled way and (b) transition tapers for auxiliary lanes that allow the turning vehicle to transition from or to the traveled way, to or from an auxiliary lane.
- 1.4.129 **TEMPORARY ACCESS CONNECTION (CONDITIONAL):** An access connection permitted to be used for a particular purpose for a specified, short period of time not to exceed one year. After said period of time, either a permanent access connection permit must be obtained and the permanent connection built or the temporary access connection must be removed and the right-of-way restored to its original condition.
- 1.4.130 **TEMPORARY ACCESS DRIVE:** An access drive permitted to be used for a particular purpose for a specified period of time not to exceed one (1) year. After that time, the drive shall be removed and the right-of-way restored to its original condition.

- 1.4.131 **THROAT LENGTH:** The distance running parallel to the centerline of a driveway from the access point to the first onsite location at which a driver can make a right or left turn; measured on roadways with curb and gutter from the face of the curb and on roadways without a curb and gutter from the edge of shoulder.
- 1.4.132 **THROAT WIDTH:** The narrowest width of a driveway, measured perpendicular to the centerline of the driveway.
- 1.4.133 **THROUGH MOVEMENT:** The predominant direction of traffic flow through an intersection.
- 1.4.134 **TRAFFIC CONTROL PLAN:** A plan identifying all required traffic control devices, but not limited to signs, barriers, barricades, plastic drums, lights and pavement markings, in accordance with the current MUTCD.
- 1.4.135 **TRAFFIC COUNT:** A tabulation of the number of vehicles or pedestrians passing a certain point during a specified period of time.
- 1.4.136 **TRAFFIC IMPACT ASSESSMENT:** A traffic impact study for relatively low traffic generating uses that focuses on the impacts at proposed site access points.
- 1.4.137 **TRAFFIC IMPACT STATEMENT:** a traffic impact study which evaluates the impacts on roadways adjacent to the study site and specified nearby intersections. This is the most common type of impact study.
- 1.4.138 **TRAFFIC IMPACT STUDY:** Analysis of the potential traffic impacts generated by a proposed project on intersection level-of-service and the safety and operation of the public road system. The type of study and level of analysis will vary depending upon the type and size of development. Typically, there are three types of traffic impact studies including (1) Traffic Impact Assessment, (2) Traffic Impact Statement and (3) Regional Traffic Analysis.
- 1.4.139 **TRAVELED WAY:** That portion of a road improved, designed or ordinarily used for vehicular travel exclusive of the berm or shoulder. In the event a road includes two or more separate roadways, "roadway" refers to any such roadway separately, but not to all such roadways collectively.
- 1.4.140 **TRIP (DIRECTIONAL TRIP):** A single or one direction vehicle movement with either the origin or the destination inside a study area. A vehicle leaving the roadway and entering a property is one trip, and the vehicle leaving the property is a second trip.
- 1.4.141 **TRIP DISTRIBUTION:** The measure of the number of vehicles or passenger movements that are or will be made between geographic areas.
- 1.4.142 **UNDIVIDED ROADWAY:** A roadway that has no directional separation, natural or structural, to separate traffic moving in opposite directions.
- 1.4.143 **URBAN AREA:** The urban area in Wayne County based on the current Federal-Aid Urban Boundary as determined by MDOT and FHWA.

- 1.4.144 **UTILITY:** All privately, publicly or cooperatively owned water distribution and sanitary sewer facilities and systems for producing, transmitting or distributing communication, cable television, power, electricity, light, heat, gas, oil, crude products, steam, waste and storm water not connected with highway drainage, including river gages, fire and police signals, traffic control devices, and street lighting systems, which directly or indirectly serve the public or any part thereof. The term "utility" may also be used to refer to the owner of any above described utility or utility facility.
- 1.4.145 **UTILITY FACILITY:** The term "utility facility" shall include but is not limited to, any and all poles, wires, guys, anchors, buried cable, conduit, pedestals, pipe lines, hydrants, valve boxes, manholes, casings, river gages and related fixtures authorized in the permit or agreement.
- 1.4.146 **UTILITY SERVICE CONNECTIONS:** Facilities supplying utility service to individual consumers from a main line.
- 1.4.147 **UTILITY STRUCTURE DRIVEWAY:** Any driveway serving a structure or utility installation such as a pump house or substation which operates automatically and requires only occasional access.
- 1.4.148 **VARIANCE:** Permission to depart from established standards due to unusual circumstances.
- 1.4.149 **WAIVER:** Permission to depart from a regulatory standard where required conditions are satisfied.
- 1.4.150 **WARRANT:** The criteria by which the need for a safety treatment or roadway improvement can be determined.
- 1.4.151 **WAYNE COUNTY:** The Charter County of Wayne, Michigan

RULE 1.5 PRESERVATION OF SURVEY MONUMENTS

- 1.5.1 To insure compliance with the provisions of MCL §54.201 et seq., regarding the preservation of survey monuments and witnesses, the following procedures shall apply to all permit Applicants, their engineers, their surveyors and Permit Holders performing work within the Wayne County right-of-way:
- a) Public land survey corners and property controlling corners located within a construction area shall be witnessed prior to the commencement of construction and their locations shall be noted on plans submitted as part of a permit application. All corners shall be preserved in accordance with Public Act 74 as amended (including Act 34, P.A. 2000). The Permit Holder and Contractor shall coordinate the work with a Professional Surveyor licensed in the State of Michigan during construction activities for the purpose of witnessing, preserving or replacing survey monuments and monument boxes.
 - b) If a survey corner or property controlling monument is located in a public roadway that is hard surfaced, the monument shall be placed within a visible protected enclosure.
 1. In compliance with Act 34, P.A. 2000, the Wayne County requires that monuments placed in hard surfaced roadways under its jurisdiction be placed in cast iron monument boxes (E.J.L.W.) #2965Z, or an approved equal. Monument boxes shall be installed with a proper metal cover and in a manner acceptable the Wayne County Department of Public Services.
 2. Under extenuating circumstances, when the placement of a monument box is not possible or when access to the corner location will create an unsafe condition, a monument may be placed in the roadway at the roadway surface without a prescribed monument box. The Permit Office must approve this variation from the standard monument box. If a monument is placed in the roadway surface without a monument box, it must at least meet the minimum standards of Section 7 and Section 10 of Act 34, P.A. 2000.
 - c) If a survey corner or a property controlling monument is located in a public roadway that is not hard-surfaced, the monument shall be at least eight (8") inches below the surface of the finished road.
- 1.5.2 Upon completion of the requirements of Public Act 74 and Act 34, P.A. 2000, the Professional Surveyor shall submit two copies of the recorded Land Corner Record Certificate (with Liber and Page); one shall be sent to the project engineer and one shall be sent to Wayne County Permit Office.
- 1.5.3 All geodetic benchmarks, GPS monuments and triangulation points found on a construction site project must be preserved. When any of these markers are located within construction limits, the Permit Office should be notified immediately. Geodetic benchmarks, GPS monuments and triangulation points require a high order survey to relocate. The National Geodetic Survey (NGS), or other agency which sets the mark, shall be notified of construction before commencing work. The Permit Office will institute any necessary action in this case.

- 1.5.4 Private property corner monuments (concrete monuments, irons, stakes, etc.) along the right-of-way lines which are disturbed or removed by the Contractor shall be replaced at the Contractor's expense. The work shall be done by a Professional Land Surveyor registered in the State of Michigan.

RULE 1.6 AMENDMENT

- 1.6.1 From time to time and as circumstances may require Wayne County may amend all or any part of these procedures and regulations as provided by law.
- 1.6.2 In the event that these procedures and regulations are amended, it is the responsibility of the Permit Holder to obtain and utilize the most current version.

SECTION 2: PERMITTING PROCESS

RULE 2.1 AUTHORIZED APPLICANT

- 2.1.1 Permit applications may be accepted from property owners, the owner's Contractor or authorized agent, public and private utilities and from governmental agencies.

RULE 2.2 APPLICATION FOR PERMIT

- 2.2.1 Permit Applicants should plan and allow adequate time for review and approval by WCDPS Permit Office as well as any other jurisdictional agencies. Generally, the greater the scope of work, the longer the permit review and approval process will take. The completeness and thoroughness with which an application package is prepared may significantly reduce the time required to perform an adequate review.
- 2.2.2 Applications for permits shall be submitted in the manner prescribed by and on the appropriate forms supplied by the Permit Office. Applications shall be accompanied by three (3) sets of plans or drawings and a payment for plan review costs according to the current Cost Schedule established by the WCDPS.
- 2.2.3 A review period begins when an application is received by the Permit Office. A supervisory engineer will perform a preliminary review of the application package within two (2) business days to determine if the plans are adequate to further proceed with the review. The application package will be checked for completeness, payment will be verified and plan sets will be checked against the plan requirements listed in Rule 2.5 below.
- 2.2.4 Depending on the determination of the preliminary review, the Permit Office will contact the applicant and either
- a) Confirm that the project has been accepted for plan review and that the review has begun;
 - b) Decline to accept the project because Wayne County has no jurisdiction in the matter;
 - c) Decline to accept the project due to deficiencies with the application package;
- 2.2.5 If the project is not accepted for review due to inadequate plans, the Permit Office will provide the Applicant with specific reasons detailing why the application has been declined. The Applicant may correct the deficiencies and resubmit the application within thirty (30) business days. If after thirty (30) days, the declined application has not been corrected or resubmitted, the application will be closed and the project materials and payment, less actual review charges, shall be returned.
- 2.2.6 If the project is not accepted because Wayne County has no jurisdiction within the project limits, the Permit Office shall return the payment and project materials less one copy of the plans which shall be kept in reserve.

- 2.2.7 During the review period, the Permit Office will be guided by this manual, as well as other standards and specifications referenced in Rule 1.3 of this manual, prior to taking final action on the application. In most cases, the review engineer will also conduct a site survey of the project. The Permit Office will work cooperatively with the Applicant to resolve all issues prior to making its decision on the application. When a review is completed, the Permit Office will transmit its decision to the Applicant. Plans may be approved, approved with corrections or not approved. If plans are approved with corrections, they shall be resubmitted and stamped by the review engineer prior to issuance of a permit. If plans are not approved, the Applicant is advised of deficiencies and, upon request, given assistance or information as needed for preparing a revised set of plans. The Applicant may resubmit revised plans to continue the current review project. Generally, a plan review decision will be provided within 45-60 work days. Failure to meet this time frame shall not be understood as an implicit plan approval.
- 2.2.8 When plans are approved by the County, the Permit Office will send an approval letter to the Applicant. If no permit is issued, the approval shall expire one (1) year after the initial mailing date.
- 2.2.9 Prior to issuance of the permit, the Applicant or Permit Holder must contact the Permit Coordinator to determine payment amounts for fees, inspection deposit and/or bond, documentation requirements and to schedule an appointment for issuance of the permit. Additionally, the Applicant or Permit Holder shall provide a copy of an insurance certificate, address and contact information of Permit Holder, Contractor and Depositor. After the information and documentation has been provided, the permit is prepared for issuance and signature by the Permit Holder. The permit shall include any additional terms and conditions established by the review. If the Permit Holder does not agree to all terms and conditions of the permit, the permit shall be deemed denied.
- 2.2.10 The permit is fully executed and in force after payment is received and the permit is signed by the Permit Holder and Contractor, or their authorized agent(s), and an authorized representative of Wayne County.

RULE 2.3 APPLICATIONS BY GOVERNMENTAL AGENCIES

- 2.3.1 A governmental agency must apply in its own name for the following types of permits and no other Applicant is acceptable:
- a) Special Events Permits for parades, festivals, celebrations, neighborhood block parties, marathons, races and walks
 - b) Banner Permits
 - c) Annual Permits
 - d) Maintenance Permits
- 2.3.2 Permit applications initiated by governmental agencies shall be submitted on official letterhead and include a current resolution by the governing body of the agency agreeing to fulfill all permit obligations and to indemnify and save harmless Wayne County and all County employees from claims of every kind arising out of activities by such permit(s) as is/are issued. The resolution may either be a) an individual resolution pertaining only to the permit work or b) a blanket resolution applicable to all permit work. Sample model resolutions may be obtained from the Permit Office.
- 2.3.3 Plan Review Cost payments are not required when an application is submitted by a governmental agency.
- 2.3.4 An agent for a governmental agency may apply on behalf of the governmental agency for all other types of permits not listed in Rule 2.3.1 above. In the event that an agent such as an engineer applies for a permit on behalf of a government agency, the agent must submit a Plan Review Cost payment when the application is made. In such a case, the primary applicant shall be deemed to be the governmental agency.
- 2.3.5 Wayne County may require security in the form of a cash bond, irrevocable bank Letter of Credit, or Certified/Cashier's check from Contractors performing certain types of permit construction for governmental agencies. As an alternative, Wayne County may, by agreement with the governmental agency, request a ten percent letter to withhold a portion of the Contractor's payment pending the release of the permit by Wayne County.

RULE 2.4 APPLICATIONS BY PRIVATE AND PUBLIC UTILITIES

- 2.4.1 Authorized Applicants for annual utility permits, for purposes of using County road right-of-way, shall require conformance with the following criteria.
- a) Communication Companies
 1. Organizations shall provide direct service to the general public and the service shall be in the public interest.
 2. The organization shall be recognized by the Michigan Public Service Commission (MPSC) as a regulated telecommunication company licensed in Michigan to provide basic local exchange service or a regulated telephone inter-exchange carrier and competitive access provider operating in Michigan.

- b) Power and Other Public Utility Companies
 - 1. The organization must be a power or other public utility company within the meaning of MCL §247.171 et seq. and must be authorized to operate in Michigan.
 - 2. The organization shall provide direct service to the general public and the service shall be in the public interest.
 - 3. Gas and petroleum distribution companies must be (a) certified by MPSC as a company distributing natural gas or as a common purchaser or common carrier, or (b) certified by the federal government as an interstate pipeline operator.
 - 4. Electric companies must be recognized by MPSC as an investor-owned or cooperative electric provider.

- c) Cable Television Companies
 - 1. The organization must be a cable television company authorized to operate in Michigan.
 - 2. The organization shall provide direct service to the general public and the service shall be in the public interest.
 - 3. The organization shall be authorized by the local unit of government where the facility is located to operate within its jurisdiction.

- d) Proof of the criteria established for classification as a public utility may be shown as follows:
 - 1. Proof of authorization to operate in Michigan as a telecommunication, power or other public utility company can be made by a certified document created by the Applicant.
 - 2. Proof of direct service to the general public can be made by a certified document created by the Applicant. The certified document shall specifically describe any conditions regarding the organization's permissible charges to the public. Service which is limited to specific organizations or individuals shall not be considered to be direct service to the general public.
 - 3. When applicable, proof that an organization's facilities are not exclusively committed to a private use can be made by recognition on each permit application. The recognition shall read as, "This is a public utility facility."

- e) Classification by Wayne County of an organization as a public utility or a cable television company is done solely for the purposes of applying MCL §247.171 et seq. Classification does not constitute beyond that any recognition that the organization is a public utility or has satisfied any other requirements of federal or State law. Wayne County may modify, without prior notice, the criteria for evaluating public utilities as Wayne County deems appropriate to meet its statutory responsibilities with respect to the County road system.

RULE 2.5 DESIGN REQUIREMENTS

- 2.5.1 The design, location, construction and operation of all proposed facilities within the road right-of-way shall meet the requirements of the current MDOT Standard Specifications For Construction, except where modified by the rules and guidelines described in this manual, current Wayne County Standard Plans for Permit Construction and Wayne County Special Provisions.
- 2.5.2 Wayne County Standard Plans for Permit Construction are available on the Wayne County web site. They include general notes, illustrated plans and typical drawings, construction details and road and drainage standards required for permit construction under Wayne County jurisdiction. The Permit Office recommends that these standards be incorporated, unmodified into plans when they are submitted for review.
- 2.5.3 The design, location, construction and operation of those activities that impact storm water runoff into or around new or existing road rights-of-way, in or around Wayne County drain(s), or within new subdivisions, or mobile home developments, new condominium developments or property owned by Wayne County shall meet the requirements of Wayne County Storm Water Management Program.

RULE 2.6 PLAN REQUIREMENTS FOR PROPOSED RIGHT-OF-WAY ACTIVITIES

- 2.6.1 To avoid unnecessary delays in the plan review process, each new plan set submitted will receive a preliminary review to determine whether the package meets minimum requirements to initiate a formal plan review process. Applicants are advised to carefully study and apply the guidelines detailed in this section to insure a prompt acceptance and review of the permit application package.
- 2.6.2 Commercial Plan Requirements
- Plans should comply with the following general requirements or as the Permit Office may require to adequately review the proposed work.
- a) A minimum of three (3) sets of plans should be submitted for review
 - b) A maximum paper size should not exceed 24 inches by 36 inches
 - c) A north directional arrow, legends including scale, symbols and line type
 - d) The scale of the drawing should be of a standard engineering scale. Plans should not be difficult to read. Typically, a scale of 1 inch = 20 feet, 30 feet or 40 feet is used
 - e) Dimensioning included for all plan elements
 - f) Stationing along centerline of roadways, drains, etc.
- 2.6.3 For most projects, some or all of the following sheets and elements should be included in each plan set submitted. Depending on the scope and scale of work, some sheets or items may not apply. Some sheets may be combined or more specific information may be required. Nonetheless, Applicants are responsible to provide a complete submittal.

- a) Title Sheet
 - 1. Project name and description
 - 2. Legal description of property within project limits
 - 3. Vicinity map relating the proposed site to major County roads
 - 4. Plan set sheet index
 - 5. Engineer's and Owner's Title Block
 - 6. Seal and signature of professional engineer (PE) registered in the State of Michigan

- b) Site Plan Sheets
 - 1. Topographic information
 - 2. Property and right-of-way lines
 - 3. Buildings and building appurtenances along with usage notations (proposed and existing)
 - 4. Location of utilities and utility easements
 - 5. All government land corner survey monuments, bench marks and witness located within the project limits
 - 6. Driveways (within project, on adjacent property and on property opposite the frontage)
 - 7. Roads and road names (in and adjacent to project)
 - 8. Stationing from known origin along centerline of road and drain
 - 9. Landscaping, tree, vegetation & appurtenances
 - 10. Sidewalks, ramps, pathways and parking
 - 11. Drainage
 - 12. Structures, drains, ditches, swales, inverts, controls and sewers
 - 13. Direction of surface water flow within project
 - 14. Storm water layout
 - 15. Off site drainage
 - 16. Road appurtenances, medians or other physical features which may impact design, approval or construction of work
 - 17. Any other improvements, notes or information required to determine compliance with all applicable regulations.

- c) Right-of-Way Improvements
 - 1. All geometric information including widths, lengths, radii of returns and other points of curvature and angle relative to roadway edge of pavement
 - 2. Distance from existing driveway(s) and proposed driveway(s) to the nearest intersecting street or cross-road
 - 3. Driveway surface material and traffic island surface material
 - 4. Grades of driveway, roadway (centerline, gutter line or edge of pavement, shoulder, right-of-way or sidewalk, etc)
 - 5. All geometric information including dimensions of all roadway lanes, tapers, curb, open shoulders, channelizing islands, other traffic islands adjacent to

- the road and traffic control island(s)
- 6. Cross section of proposed pavement showing depth and type of material
- 7. Sight distance for the approach
- d) Removal/Demolition Sheets
- e) Typical Sections and Detail Sheets
- f) Landscape Plan - Trees, vegetation, berms or other landscaping or streetscaping appurtenances
- g) Traffic Plan
 - 1. Construction signs and pavement markings
 - 2. Detour
 - 3. Construction staging
 - 4. Permanent signs and pavement markings
- h) Road profiles (existing and proposed)
- i) Utility Plans (existing and proposed underground & overhead public & private utilities including, but not limited to, water main, storm sewer, sanitary sewer, gas main, electric, fiber optic, etc.)
 - 1. Profile for main utilities including water main (if 12 inches or larger), sanitary sewer, storm sewer, etc.
 - 2. Inverts, rim elevations, hydraulic grade lines (storm sewer only)
 - 3. Sewer size & material, structure size
 - 4. Size, length, type and grade of culverts, sewer pipe, flow restrictors and/or ditches
 - 5. Type, size and location of drainage structures
 - 6. Other hydrological/hydraulic information as necessary
- j) Storm Water Management Plan
 - 1. Storm Sewer Table Calculations
 - 2. Storm Sewer Profile (Show hydraulic grade line)
 - 3. Drainage area map for each catch basin
 - 4. Storm Water Calculations (detention/retention volume and flow restrictor calculations) based on the Wayne County Storm Water Management Ordinance.
 - 5. Details for detention/retention system, treatment system, flow restrictor and cross sections
 - 6. Landscaping for Storm Water Management System
 - 7. Storm Water Management System Exhibits

2.6.4 Residential Plan or Drawing Requirements

- a) Plans should comply with the following general requirements or as the Permit Office may require to adequately review the proposed work:
1. A minimum of three (3) sets of plans or drawings should be submitted for review
 2. Vicinity map and north directional arrow
 3. Dimensioning included for each item
 4. Location of house, property lines, right-of-way lines extended to the road pavement
 5. Driveway location, geometry and surface type, culvert location (if over ditch)
 6. Road and road name, traffic signs & trees
 7. Utility (water main and sanitary), hydrants, utility poles, etc

2.6.5 On extensive projects, detailed plans shall clearly define that portion of the work which will involve work within Wayne County right-of-way or affect Wayne County operations.

2.6.6 The permit office requires that the applicant utilize the standard plan, Plan Conventions (RS-9) when preparing plans to be submitted.

RULE 2.7 CONDITIONS & LIMITATIONS OF PERMITS

- 2.7.1 **Plan Approval and Specifications:** All work performed under the permit shall be done in accordance with the approved plans, specifications, maps, statements and special conditions filed with the County and shall comply with WCDPS Permit Specifications, as defined in the current MDOT Standard Specifications For Construction as modified by WCDPS Special Provisions, Wayne County Standard Plans for Permit Construction, the WCDPS Rule for Permit Construction and other WCDPS specifications. Any situation or problem which occurs as a result of the construction, operation, use and/or maintenance of the facility in the right-of-way and is not covered by the approved plans nor by the County's current Standards and Specifications shall be resolved by the Permit Holder as directed and approved by the Permit Office. Any significant change to the plans must be approved by the Permit Office and is authorized only when an approved addendum is obtained from the Permit Office.
- 2.7.2 **Fees:** The Permit Holder shall be responsible for all fees and costs incurred by the County in connection with the permit and shall deposit payment for fees and costs as determined by the County at the time the permit is issued.
- 2.7.3 **Bond:** The Permit Holder shall furnish a bond in cash or Certified check in an amount acceptable to the County to guarantee performance under the conditions of the permit. The County may use all or any portion of the bond which shall be necessary to cover any expense, including inspection costs or damage incurred by the County through the granting of the permit. Should the bond be insufficient to cover the expenses and damages incurred by the County, the Permit Holder shall pay such deficiency upon billing by the County. If the bond amount exceeds the expenses and damages incurred by the County, the excess portion will be returned to the Depositor. The excess performance bond provided for herein, when it cannot be returned, shall be deposited into the County Road Fund and become a part thereof, unless claimed by the Depositor within one year of the date of satisfactory completion of the construction authorized by the permit.
- 2.7.4 **Insurance:** The Permit Holder shall furnish proof of liability and property damage insurance in the form and amounts acceptable to the County with Wayne County named as an insured party. The Permit Holder shall maintain this insurance until the permit is released, revoked or cancelled by the County.
- 2.7.5 **Indemnification:** The Permit Holder shall indemnify, hold harmless and defend Wayne County, the Wayne County Department of Public Services, its officials and employees against any and all claims, suits and judgments to which the County, the Department, its officials and employees may be subject and for all costs and actual attorney fees which may be incurred on account of injury to persons or damage to property, including property of the County, whether due to negligence of the Permit Holder or to the joint negligence of the Permit Holder and the County, arising out of any and all work performed under the permit, or in connection with work not authorized by the permit, or resulting from failure to comply with the terms of the permit or arising out of the continued existence of the work product that is the subject of the permit.
- 2.7.6 **Permit on Site:** The Permit Holder shall keep available a copy of the permit and any associated approved plans on site during permitted activities.

- 2.7.7 **Notification for Start and Completion of Work:** The permit shall not become operative until it has been fully executed by the County. The Permit Holder shall notify the County before starting construction and shall notify the County when work is completed. The Permit Holder or their representative shall have copies of the executed permit and approved plans in their possession on the job site at all times.
- a) The Permit Holder shall provide at least three (3) days advanced notice, excluding Saturdays, Sundays and holidays, to the Permit Office prior to the commencement of any permitted activities by submitting a START OF WORK NOTIFICATION form by mail, fax or e-mail. In certain instances, additional notice may be required by the Permit Office. In the event that construction work ceases for a period of time, then the Permit Holder shall notify the Wayne County Inspector at least 24 hours prior to resuming work.
 - b) The Permit Holder shall comply with all requirements of the Miss Dig Statute, MCL §460.701 et seq., as amended. The Permit Holder shall call "MISS DIG", at (800) 482-7161, at least 72 hours, excluding Saturdays, Sundays and holidays, but not more than twenty-one (21) calendar days, before starting any underground work. The Permit Holder assumes all responsibility for damage to or interruption of underground utilities.
 - c) The Permit Holder shall call Wayne County Department of Public Services' Traffic Operations Office at (734) 955-2154, at least 72 hours prior, excluding Saturdays, Sundays and holidays, but not more than twenty-one (21) calendar days, before starting any underground work in the vicinity of any traffic signal equipment owned, operated or maintained by Wayne County.
- 2.7.8 **Safety:** The Permit Holder agrees that all work under the permit shall be performed in a safe manner and to keep the area affected by the permit in a safe condition until the work is completed and accepted by the County. The Permit Holder shall furnish, install and maintain all necessary traffic controls and protection which are in accordance with the current Manual on Uniform Traffic Control Devices (MUTCD). The Permit Holder shall conduct all activities and maintain all facilities as set forth in the permit in a manner so as not to damage, impair, interfere with, or obstruct a public road or create a foreseeable risk of harm to the traveling public. The Permit Holder shall comply with all applicable OSHA and MIOSHA requirements.
- 2.7.9 **Underground Utilities:** The Permit Holder shall contact all utility owners regarding their facilities prior to starting work and shall comply with all applicable provisions of Act 53, Public Acts of 1974, as amended. Wayne County makes no warranty either expressed or implied as to the condition or suitability of subsurface conditions or any existing facility which may be encountered during an excavation. The presence or absence of utilities is based on the best information available and the County is not responsible for the accuracy of this information. The Permit Holder assumes all responsibility for the interruption and damage to underground utilities. The Permit Holder is responsible for proper disposal, in accordance with current regulations, of any material excavated from within the right-of-way. Such materials include, without limitation, soils or groundwater contaminated by petroleum products or other pollutants associated with sites identified by the MDEQ or reported on appropriate release forms for underground storage tanks.
- 2.7.10 **Assignability:** The permit is neither transferable nor assignable without the written consent of the County.

- 2.7.11 **Limitation of Permit:** The Applicant and the Permit Holder shall be responsible for obtaining and shall secure any permits or permission necessary or required by law from State, federal or other local governmental agencies and jurisdictions, corporations or individuals. These include, without limitation, those pertaining to drains, inland lakes and streams, wetlands, woodlands, flood plains, filling, noise regulation and hours of operation. Issuance of a Wayne County permit does not authorize activities otherwise regulated by State, federal or local agencies.
- 2.7.12 **Access of Other Vehicles:** The Permit Holder shall, at all times possible, maintain a minimum of one acceptable access to all abutting occupied properties, driveways and side streets unless otherwise specified on the approved plans. The Permit Holder shall notify all owners or occupants of properties whose access may be temporarily disrupted during the permitted work. The local police, fire or emergency service agencies shall define acceptable access. The Permit Holder shall provide signing and other improvements necessary to ensure adequate access until the roadway, driveway or side street is restored. The Permit Holder shall conduct all operations so as to minimize inconvenience to abutting property owners. Wayne County reserves the right to reasonably restrict the progress of work by the Permit Holder based on the rate of roadway and right-of-way restoration, including permanent or temporary pavement. Wayne County may require that work be suspended until satisfactory backfilling of open trenches or excavations has been completed and driveways, side streets and drainage restored.
- 2.7.13 **Restoration:** The Permit Holder agrees to restore the County road and road right-of-way, County drain easement or County park property to a condition equal to or better than its condition before work under the permit began. If the Permit Holder fails to satisfactorily restore the permitted work area, Wayne County may take all practical actions necessary to provide reasonably safe and convenient public travel, preservation of the roadway and drainage, prevention of soil erosion and sedimentation, and elimination of nuisance to abutting property owners caused by the permitted activity. Security in the form of cash, a certified check or surety bond shall be required to secure the cost of restoring the disturbed portion of the right-of-way to an acceptable safe condition. The amount of the security shall be determined by the Permit Office. In the event that a suspension of work will be protracted or that the work will not be completed by the Permit Holder, the Permit Holder shall restore the right-of-way to a condition similar to the condition that existed prior to issuance of the permit.
- 2.7.14 **Acceptance:** Acceptance by the County of work performed does not relieve the Permit Holder of full responsibility for work performed or the presence of the permitted facility. The Permit Holder acknowledges that the County has no liability for the presence of the Permit Holder's facility located within the County road right-of-way, County drain easement or County park property.
- 2.7.15 **Permit Expiration and Extension of Time:** All work authorized by the permit shall be completed to the satisfaction of the Permit Office on or before the expiration date specified in the permit. Any request for an extension of time for completion shall be on a completed County form and shall demonstrate good cause for granting the request. Additional requirements may be imposed as a condition of an extension of time due to seasonal limitations or other considerations. These additional requirements may include, without limitation, changes to materials or construction methods, reestablishment of fees, bonds, deposits and insurance requirements.

- 2.7.16 **Responsibility:** The design, construction, operation and maintenance of all work covered by the permit shall be at the Permit Holder's expense with the exception that the Permit Holder will not be responsible for maintaining road widenings or similar facilities which become part of the County roadway.
- 2.7.17 **Revocation:** The permit may be suspended or revoked at the will of the County. Upon order of the County, the Permit Holder shall surrender the permit, cease operations and remove, alter or relocate, at their expense, the facilities for which the permit was granted. The Permit Holder expressly waives any right to claim damages for compensation resulting from the revocation of the permit.
- 2.7.18 **Violation:** The County may declare the permit null and void if the Permit Holder violates the terms of the permit. The County may require immediate removal of the Permit Holder's facilities and restoration of the County property, or the County may remove the facilities and restore the County property at the Permit Holder's expense. The Permit Holder agrees that in the event of a violation of the terms of the permit or in the event the work authorized by the permit is not satisfactorily completed by the permit expiration date, the County may use all or any portion of the performance bond to restore the County road right-of-way, drain easement, wastewater facility or park property as necessary for reasonably safe and efficient operations and maintenance, or to establish extraordinary maintenance procedures as required to assure reasonably safe and efficient operation of the County facility.
- 2.7.19 **Inspection and Testing of Materials:** Wayne County reserves the right of inspection and the testing of materials by its authorized representatives of all permitted activities and/or activities within the road right-of-way, County owned property or within a County drain easement. All items identified by the final inspection shall be resolved prior to release of the permit. All materials and methods utilized during the course of the authorized permit work shall meet the requirements of the current MDOT Standard Specifications For Construction as modified by Wayne County Special Provisions, Standard Plans for Permit Construction and this manual. The Permit Holder shall reimburse Wayne County for all required inspections and testing of materials.
- 2.7.20 **Design:** The Permit Holder is fully responsible for the design of the permitted facility, such that the design shall be consistent with all applicable County standards, specifications, guidelines, requirements and with good engineering practice. Any errors in the plans that become evident after the issuance of a permit, and which change the scope of permitted work, are subject to review and may be grounds for revocation of the permit. The Permit Office will not relieve the Permit Holder of the responsibility of correcting errors, deficiencies, or omissions due to oversight or unforeseen contingencies such as faulty drainage, poor subsoil conditions or the failure of the Permit Holder's engineer to show all the related or pertinent conditions inside or outside the plan area.
- 2.7.21 **Drainage:** Drainage shall not be altered to flow into the road right-of-way or road drainage system unless approved by Wayne County.
- 2.7.22 **Permit Holder Compliance:** The Permit Holder shall abide by the conditions and limitations contained on the permit and all other conditions listed within the WCDPS Rules, Specifications and Procedures for Construction Permits. Any work performed under the permit shall constitute the Permit Holder's agreement to the Provision.

RULE 2.8 INDEMNITY AND CERTIFICATES OF INSURANCE

- 2.8.1 The Permit Holder shall defend and hold harmless Wayne County, the Department of Public Services, its officials and employees against any and all claims, suits and judgments to which Wayne County, the Departments, its officials and employees may be subject and for all costs and actual attorney fees which may be incurred on account of injury to persons or damage to property, including County property. The Permit Holder shall provide this indemnity whether the negligence is due to the Permit Holder or to joint negligence of the Permit Holder and the County, arising out of any and all activities performed under the permit or in connection with work not authorized by the permit, or resulting from the failure to comply with the terms of the permit, or arising out of the continued existence of the work product that is subject to the permit.
- 2.8.2 Certificates of insurance shall be required for all construction permits, excluding residential driveway permits. General liability and automotive liability insurance coverage shall be in amounts not less than \$1,000,000 each occurrence and \$2,000,000 general aggregate. Proof of automobile liability shall be in amounts not less than \$1,000,000 combined single limit for each accident, bodily injury per accident, and property damage per accident, and in an amount not less than \$1,000,000 for bodily injury each person, each occurrence and property damage liability \$1,000,000 each occurrence.
- 2.8.3 The insurance shall cover a period not less than the term of the permit and shall provide that it cannot be cancelled or reduced without thirty (30) days advance written notice to Wayne County, by Certified mail, first-class, return receipt requested. The thirty (30) days shall begin on the date when the County received the notice, as evidenced by the return receipt.
- 2.8.4 The WCDPS shall be a Certificate Holder on the policy of insurance worded as, "Wayne County, its officers, agents and employees are named as additional insured parties."
- 2.8.5 The certificate of insurance and all correspondence associated with the insurance policy shall reference the plan review number and project name.
- 2.8.6 The certificate of insurance must be provided by a person, the corporation, or by authorized representatives who signed personally either the application or permit. Insurance shall remain in force until the permit is released by Wayne County.
- 2.8.7 Should insurance coverage be cancelled or reduced below acceptable limits, or allowed to expire, the authorization to continue work under the permit shall be suspended or revoked and shall not resume until new insurance is in force and accepted by Wayne County. Wayne County may, in such cases, take appropriate action to restore or protect the road and appurtenances. All costs incurred by this action shall be deducted from any remaining inspection deposit, bond and/or Letter of Credit and, if necessary, the Permit Holder may be billed to defray actual expenses.

RULE 2.9 PLAN REVIEW COSTS

- 2.9.1 The required Plan Review Cost Payment is intended to sufficiently cover the necessary costs applied in a reasonable manner for the plan review. Plan review costs will be deducted from this payment.
- 2.9.2 The amounts for plan review costs payments are categorized and scaled by type of work. The "Plan Review Cost Payment Schedule" is available on the WCDPS Permit Office web page. In the event that additional review costs are necessary beyond what was originally submitted, the Applicant shall pay those additional costs as needed. If after eighty percent of plan review cost funds have been exhausted during a plan review, and the plan review engineer determines that more time is required than what available funds will allow, the Permit Office will estimate the additional amount needed to complete the review and send a letter to the Applicant requesting payment for the additional amount. If one hundred (100%) percent of funds have been exhausted, the project will be placed on administrative hold and the Applicant will be notified by mail that plan review activities have been suspended until the required payment is received by the Permit Office.
- 2.9.3 In the event that a portion of the payment has not been charged during the plan review process, remaining funds will be applied toward the permit fee and inspection deposit.
- 2.9.4 Government agencies and utility companies that are license by the Michigan Public Service Commission submitting an application as Applicant shall be billed for Plan Review Costs and are not required to submit an initial payment.

RULE 2.10 PERMIT FEES

- 2.10.1 Permit fees shall be paid according to the current Schedule of Permit Fees. These fees are intended to cover the necessary and actual administrative costs applied for the issuance and administration of the permit. Permit fees are non-refundable.

RULE 2.11 INSPECTION DEPOSIT

- 2.11.1 An inspection deposit will be paid to cover the estimated costs of inspection and supervision of the permit construction work. All inspection costs will be deducted from the inspection deposit.
- 2.11.2 The following details shall be resolved by the Permit Office prior to granting a permit:
- a) Inspection requirements
 - b) Scope of work
 - c) Estimated inspection costs assessed to the Permit Holder; these costs may include Wayne County employee wages, equipment rental, materials, supplies, expenses, overhead and any other inspection related contract costs.
 - d) Materials testing requirements

- 2.11.3 Inspection costs that exceed the remaining inspection deposit shall be deducted from any cash bond, unconditional and irrevocable Letter of Credit or billed to the Permit Holder.
- 2.11.4 An additional deposit amount may be required if the Permit Office determines that the remaining deposit and/or bond amount is not sufficient to cover inspection costs necessary to finish the project. If it is determined that the project is substantially incomplete and the amount of funds remaining is insufficient to cover the unfinished work, then the Permit Office will notify the Permit Holder in writing of this condition and request payment for the required additional funds. If the payment is not received by the Permit Office within ten (10) business days, then the Permit Office may halt the project according to the conditions listed in Rule 2.21 of this manual.

RULE 2.12 PERFORMANCE BOND

- 2.12.1 A performance bond is required for most of the activities listed in Rule 1.1 and is intended to guarantee performance by securing the cost of restoring the disturbed portion of the right-of-way and to protect Wayne County against the cost of completing construction or correcting deficiencies. The amount of the bond shall be determined by the Permit Office in accordance with calculation formulas adopted by Wayne County.
- 2.12.2 Bond may be set as a cash security in the form of a Cashier's or Certified check.
- 2.12.3 Bond may be set in the form of a Surety Performance Bond submitted on the approved Wayne County Surety Bond form, available at the Permit Office. The Surety Bond shall not expire until the permit for which it is required is released by Wayne County.
- 2.12.4 If bond amounts are set at \$50,000 or more, an unconditional and irrevocable Letter of Credit may be submitted in lieu of or in addition to a cash bond. Generally, a separate inspection deposit will be required when a Letter of Credit is accepted as assurance. The Letter of Credit must be recommended by reviewing engineer and shall adhere to the conditions approved by Wayne County for Letters of Credit:
- a) An Irrevocable and unconditional Letter of Credit shall be issued on a Wayne County approved form, available at the Permit Office. The issuing institution shall be a bank or financial institution having an office in Wayne County that has the authority to grant draws on the Letter of Credit, and whose Letter of Credit operations are regulated and examined by a federal or State agency.
 - b) The Letter of Credit shall be made out to Wayne County and shall reference the Depositor Name and Address, Project Name, and Plan Review Number.
 - c) The Letter of Credit shall be unconditional and irrevocable and shall be issued for a period of at least one (1) year. The Letter of Credit shall provide that the expiration date will be automatically extended for a period of at least one (1) year unless, the issuing institution notifies Wayne County, by courier or certified mail that they have decided not to extend the expiration date. Under the terms of the Letter of Credit, the issuing bank must notify the County of such a decision at least ninety (90) days before the current expiration date.

- d) If the Letter of Credit is not extended beyond the current expiration date, the Depositor may establish alternate assurance with the County. If the depositor fails to establish alternate security with 30 days of the expiration, the County may draw on the Letter of Credit.
 - e) Upon completion of a substantial portion of work and acceptance of the work by the County Engineer, the Permit Holder may request a reduction in the amount of a letter. The request shall be submitted in writing on the Letter of Credit Reduction form available at the Permit Office.
 - f) Upon final acceptance of all work by the County Engineer, the Permit Office will send a letter to the issuing institution a requesting release of the letter of credit.
- 2.12.5 If a governmental agency is the Permit Holder, in lieu of a cash bond, ten percent of the Contractor's payment may be held until the permit is released by Wayne County. At final release, the Permit Office will send a letter to the governmental agency authorizing release of reserved funds and the requirement to withhold any further payment.
- 2.12.6 Wayne County may use all or any portion of the bond to cover any necessary expenses and damages incurred by the County, including
- a) Restoring the disturbed portion of right-of-way to an acceptable and safe condition
 - b) Protecting Wayne County against the cost of completing construction or correcting deficiencies
 - c) Actual inspection costs in excess of the estimated inspection deposit.
- 2.12.7 If the bond amount exceeds any expenses and damages incurred by the Wayne County, the excess portion will be returned to the Depositor for permit. If the bond is insufficient to cover expense and damages incurred by Wayne County due to the permitted work, then the Permit Holder shall make payment to Wayne County to cover the deficiency.
- 2.12.8 Any unclaimed excess portion of the bond that cannot be returned shall be deposited into the Department of Public Services Road Fund and be forfeited to the County, unless claimed by the Depositor within one year of the date of satisfactory completion of the construction authorized by the permit.

RULE 2.13 PAYMENT OF FEES AND DEPOSITS AND PERMIT ISSUANCE

- 2.13.1 After plans are approved, the Permit Office will send a letter of approval to the Applicant. Prior to issuance of the permit, the Contractor or Permit Holder must contact the Permit Coordinator to:
- a) Determine payment amounts for fees, inspection deposit and/or bond.
 - b) Provide all documentation that may be required before the permit may be issued.
 - c) Provide a copy of an Insurance Certificate with Wayne County and its employees as additionally insured.
 - d) Provide contact information, including address, emails and phone numbers of Permit Holder, Contractor and Depositor. Emergency contact numbers,

available 24 hours a day / 7 days a week shall also be provided at this time.

- e) Provide a "Letter of Authorization". If the Contractor signs and picks up the permit, then an Authorization Letter is required authorizing the Contractor to act as an agent for the Permit Holder.
 - f) Schedule an appointment for issuance of the permit.
- 2.13.2 After the above information and documentation has been provided, the permit is prepared for issuance and signature by the Permit Holder. The permit shall include any additional terms and conditions established by the review. If the Permit Holder does not agree to all terms and conditions of the permit, the permit shall be deemed denied.
- 2.13.3 Payment is required for permit fees, bond and inspection deposit at permit issuance. Prior to permit issuance, the Applicant may request a and Fee Sheet that lists all fees, deposits and/or bond as well as any documentation required to issue the permit.
- 2.13.4 Permit fees and deposits must be combined into one check. Checks less than \$1,000 may be paid by personal check. Payments of \$1,000 or greater must either be a Certified or Cashier's check. Corporate checks may be accepted subject to the approval of the Permit Office. All checks shall be made payable to "Wayne County".
- 2.13.5 The permit is fully executed and in force after payment is received and the permit is signed by the owner and Contractor, or their authorized agent(s), and an authorized representative of Wayne County.

RULE 2.14 INSPECTION AND TESTING OF MATERIALS

- 2.14.1 The WCPDS reserves the right of inspection and the testing of materials by its authorized representatives of all permitted activities and/or activities within the road right-of-way, County owned property or within a County drain easement.
- 2.14.2 The Permit Holder shall provide at least three (3) days advanced notice, excluding Saturdays, Sundays and holidays, to the Permit Office prior to the commencement of any permitted activities by submitting a NOTIFICATION OF START OF WORK form by mail, fax or e-mail. In certain instances additional notice may be required by the Permit Office.
- 2.14.3 In the event that construction work ceases for a period of time, the Permit Holder shall notify the Wayne County Inspector at least 24 hours prior to resuming work.
- 2.14.4 If upon inspection, an activity described in Rule 1.1 is found to be in violation, the responsible party shall correct any deficiencies within a period of thirty (30) days, as specified in a Notice of Non-Compliance with Permit Conditions sent by Certified Mail to the Permit Holder. Dangerous or hazardous conditions, as determined by Wayne County, shall be corrected immediately. If the responsible party fails to make the required corrections within the time stated in the notice, Wayne County shall have the right to halt construction activity until adequate corrections have been made or deficiencies corrected and/or perform the necessary corrections at the expense of the Permit Holder.

- 2.14.5 Construction materials including but not limited to concrete, HMA, backfill material and soils, brick and block and pipe are subject to testing by the WCDPS Testing Office. On projects where WCDPS owned facilities are being constructed such as a County drain or sewers, all pre-cast structure bases, top slabs, covers, sump risers, conduits, etc., are also subject to testing and inspection by the WCDPS Testing Office. Refer to the appropriate sections in this manual for specific testing requirements.
- 2.14.6 The Permit Holder shall be responsible for having the manufacturer of all materials that require testing contact the Wayne County Testing Office (734-595-6504) at least 72 hours prior, excluding Saturdays, Sundays and holidays, to the fabrication to schedule an inspection of the fabrication. Wayne County inspects the material fabrication process to ensure that the manufacturer's testing of the product concurs to the applicable AASHTO or ASTM Standards. The Permit Holder shall be responsible for the cost of materials testing.
- 2.14.7 All materials approved by the Testing Office shall be listed on a "Shipment of Tested Stock" receipt and presented to the Inspector at time of delivery of material to the site. Material shipped to the project site without a "Shipment of Tested Stock" receipt will be considered untested material and shall be rejected and removed from the project site.
- 2.14.8 All construction materials will be visually inspected at the site for flaws, cracks, stability, dimensional correctness and other imperfections. Unsuitable materials will be rejected and removed from the site.
- 2.14.9 Any Permit Holder who conducts operations in a manner detrimental to Wayne County's ability to maintain roads reasonably safe and convenient for public travel will be required to cease all such operations. If necessary, additional cash deposits for the expense of maintaining a Wayne County Inspector on-site (full-time) may be required from the Permit Holder prior to the resumption of work.

RULE 2.15 CANCELLATION OF PERMIT

- 2.15.1 If the Permit Holder no longer intends to or is unable to perform the permitted work, the Permit Holder may request in writing to the Permit Office that the permit be cancelled.
- 2.15.2 If no work has commenced, the permit will be cancelled and processed for release according to standard procedures. Inspection deposit and bond will be refunded, less any costs or expenses.
- 2.15.3 If work has commenced and remains uncompleted, the Permit Office shall revoke the Permit and recommend a forfeiture of bond as prescribed in Rule 2.20 below.

RULE 2.16 FINAL ACCEPTANCE AND CLOSING OF PERMIT

- 2.16.1 The Permit Office shall make a final inspection after written notification by the Permit Holder that all work authorized by the permit has been completed and all special conditions and required documentation have been completed or submitted to the Permit Office.
- 2.16.2 Refunds will not be issued until Wayne County has been satisfied that all work authorized by the permit has been completed and all repairs have been made, vegetation has been established, storm systems affected by the project are clean and undamaged, no settlements of the road surface or side slopes have occurred, all temporary soil erosion and sedimentation control measures have been removed, all excess construction materials, construction signage and temporary construction access are removed from the project area and the Permit Office has received a report of final disposition of claims/lawsuits.

RULE 2.17 REFUNDS OF FEES, INSPECTION DEPOSIT AND BOND

- 2.17.1 Permit and Plan Review fees are non-refundable except when the Permit Holder makes a required or recommended right-of-way dedication.
- 2.17.2 Upon completion of all permitted work, the Permit Holder shall request a final inspection and release of the permit. Refunds will be processed after final inspection of the work is completed, all required documentation is received and final acceptance of the project is approved by the County Engineer. After final acceptance, the Permit Office will prepare a preliminary bill itemizing all costs including inspection, testing and, if necessary, any amount due to penalties assessed for deficient work or materials.
- 2.17.3 After the preliminary bill is calculated, it will be submitted to the Wayne County Department of Management and Budget along with a request for final release of the permit. The Department of Management and Budget will then prepare a final invoice for the project. Any charges above the estimated inspection deposit will be deducted from the permit bond. Any unused portion of the inspection deposit and bond will be returned along with a final paid invoice to the Depositor named on the permit. If charges are in excess of the permit bond and inspection deposit, an invoice with amount due shall be issued. The amount due shall be the obligation of the Permit Holder and the permit will not be released until the amount due is received by Wayne County. In most cases, the final payment or amount due invoice shall be mailed out within twenty-one (21) business days from the initial request for release by the Permit Office.
- 2.17.4 In the event that the work covered by a permit does not commence, the Permit Holder may request in writing to the Permit Office a cancellation of the permit and release of bond and inspection deposit. The Permit Office will perform a site inspection and verify that no work commenced. The Permit Office will then request a release of the permit along with any refund of bond and inspection deposit, less any costs incurred by Wayne County.

RULE 2.18 EXTENSION OF TIME

- 2.18.1 Permits are generally issued with an expiration date that is two (2) years past the date of issue. At least sixty (60) days prior to the permit expiration date, and if more time is required to complete the permitted work, the Permit Holder shall request an extension of time by completing the "Request for Extension of Time for Construction Permits" form and submitting the form to the Permit Office.
- 2.18.2 The Permit Holder shall attach a current "Proof of Insurance" to the request in accordance with the requirements lists in Rule 2.8.
- 2.18.3 Upon receipt of the request, an addendum with an additional one (1) year extension of time will be issued and mailed to the Permit Holder. Expired permits that have not been given final inspection, and where no request for extension of time has been received, will be deemed as delinquent and processed as detailed below.

RULE 2.19 DELINQUENT PERMITS

- 2.19.1 A delinquent permit is one in which the conditions of the permit have not been fulfilled prior to the expiration date of the permit. The Permit Office will classify delinquent permits into three categories:
- 2.19.2 Class I - No Work Started - Thirty (30) days prior to permit expiration, the Permit Holder will be notified by mail of the impending expiration and directed to either 1) begin construction and, if necessary, submit a completed "Request for Extension of Time" form to the Permit Office; or 2) request cancellation of the permit within thirty (30) days. If there is no response within thirty (30) days, or upon receipt of a cancellation request, the permit will be revoked and processed for release according to standard procedures. Inspection deposit and bond will be refunded less any costs or expenses.
- 2.19.3 Class II - Work Substantially Complete - Thirty (30) days prior to permit expiration, the Permit Holder will be notified of the impending expiration and provided a list of any remaining work items to be completed. The Permit Holder will be directed to finish all remaining permit work and, if necessary, submit a completed "Request for Extension of Time" form to the Permit Office. If work has not been satisfactorily completed by the expiration or extended expiration date, the permit will be deemed a Delinquent Permit - Class III and the procedure for handling this type of permit will be followed.
- 2.19.4 Class III - Work Incomplete or Improperly Performed - Thirty (30) days prior to permit expiration, the Permit Holder will be notified of the impending expiration and directed to complete any specified corrective actions with thirty (30) days or as designated by the Permit Office. If work on the specified actions has not commenced with thirty (30) days or work has not been completed by the designated completion date, the permit will be revoked and a recommendation of bond forfeiture will be initiated.
- 2.19.5 If, after thirty (30) days, corrective actions have not been completed, the Permit Office shall revoke the Permit and recommend a forfeiture of bond as prescribed in Rule 2.20 below.

RULE 2.20 FORFEITURE OF BOND AND INSPECTION DEPOSIT

- 2.20.1 The County may use all or any portion of the bond and/or inspection deposit to restore the County road right-of-way, drain easement, wastewater facility or park property as necessary for reasonably safe, efficient operations and maintenance, or to establish extraordinary maintenance procedures as required to assure reasonably safe and efficient operations of the County facility.
- 2.20.2 If forfeiture is recommended, the Permit Office will determine all feasible corrective measures necessary to restore the right-of-way and recommend that the work either be completed by WCDPS forces or the work should be contracted out. The determination and recommendation of bond forfeiture will be submitted to the County Highway Engineer for approval.
- 2.20.3 Upon approval of the County Highway Engineer, the Permit Holder will be notified by registered mail of the bond forfeiture and the recommended corrective measures shall be accomplished. All costs will be properly charged and documented.
- 2.20.4 Upon completion of the work, the permit will be processed for release according to standard procedures. All expenses incurred, including WCDPS costs and/or contract costs, will be deducted from the permit bond and/or inspection deposit. If the amount of bond and inspection deposit is insufficient, then the Permit Holder will be billed for any outstanding amount due.

RULE 2.21 UNAUTHORIZED CONSTRUCTION

- 2.21.1 Failure to obtain a required permit for any activity listed in Rule 1.1 of this manual shall be deemed as unauthorized construction. Responsible parties for such activities may be subject to civil fines, penalties, restorations costs, suspension of work and/or other actions allowed under the law.

RULE 2.22 NOTICE OF NON-COMPLIANCE

- 2.22.1 Failure to comply with any provision of an issued permit may result in suspension of the work for which the permit was issued until adequate corrections have been made. Costs incurred by Wayne County in correcting a failure to comply with the terms and conditions of a permit or defective workmanship or materials shall be borne by the Permit Holder and/or Applicant.
- 2.22.2 If upon inspection, a permitted activity is found to be in violation of the conditions of the permit, or if an unauthorized activity(s) is/are being conducted, the Permit Office may issue a "Notice of Non-Compliance" to the Permit Holder.
- 2.22.3 The Notice of Non-Compliance will describe the conditions to be corrected and prescribe required actions to be performed by the Permit Holder. The Permit Holder shall correct the specified conditions as detailed on the Notice of Non-Compliance within thirty (30) days. If the Permit Office determines that dangerous or hazardous conditions exist due to the non-compliant conditions, the Permit Holder shall be directed to correct the specified conditions immediately.

- 2.22.4 If corrective action is not completed within thirty (30) days or by the date entered on the Notice of Non-Compliance, all work allowed under the permit may be suspended. Wayne County shall have the right to halt ingress and egress activity to and from the site until satisfactory corrections have been made.
- 2.22.5 If after suspension of work, corrective actions are satisfactorily completed, the Permit Holder may be authorized to resume work.
- 2.22.6 If after thirty (30) days, corrective actions have not been completed, the Permit Office may revoke the permit and recommend a forfeiture of bond as prescribed in Rule 2.20.
- 2.22.7 If the permit is revoked by the Permit Office or a required permit is not attained, and upon order of the Permit Office, the Permit Holder and the Contractor shall surrender the permit, cease operations, and remove, alter or relocate, at their expense, the facilities for which the permit was granted.

RULE 2.23 APPEAL OF PERMIT DENIAL OR REQUEST FOR VARIANCE

- 2.23.1 An Applicant wishing review of either a denial of a permit application or a variance from permit requirements shall submit a written request for review, clearly specifying the facts in support of the request to the Wayne County Engineer.
- 2.23.2 The Wayne County Engineer shall, whenever feasible, make a written determination within thirty (30) days of submission of the request either granting or denying said request. The Applicant shall be forwarded a copy of the determination by First-Class mail. If the request is denied, the response shall set forth the reasons for denial. Failure of the Wayne County Engineer to act within thirty (30) days shall not be construed as an approval of the variance requested.
- 2.23.3 An Applicant wishing review of either a denial of a permit application or a variance by the Wayne County Engineer may, within sixty (60) days of such denial, submit a written request for a departmental review by the Wayne County Department of Public Services.
- 2.23.4 The permit application, supporting documentation and the determination and recommendation by the Wayne County Engineer shall be provided by the Permit Office to the Director of the Department of Public Services.
- 2.23.5 The Applicant shall demonstrate, as a condition of any permit or variance, that the requested permit or variance will be consistent with the safety and convenience of the public taking into account traffic volumes, drainage, the nature, character and use of the land and other requirements in the public interest.
- 2.23.6 The Director of the Department of Public Services shall, after due consideration, either grant or deny an Applicant's request. The Applicant shall be forwarded a copy of the determination by First-Class mail. If the request is denied, the response shall set forth the reasons for denial.

RULE 2.24 RIGHT-OF-WAY DEDICATION

- 2.24.1 During the course of a plan review, the Permit Office may determine that the existing road right-of-way does not meet the width requirement specified in the Wayne County Right-of-Way Master Plan. In the event that this occurs, it is the policy of the WCDPS to ask property owners for a voluntary dedication of property for road right-of-way purposes in exchange for a waiver of permit fees and plan review costs for the project.
- 2.24.2 Where roads or road drainage cannot be contained within the existing right-of-way due to the Applicant's proposed work, the WCDPS may require that additional right-of-way be dedicated before a permit may be issued.
- 2.24.3 If a right-of-way dedication is either requested or required, the Permit Office will notify the property owner of the right-of-way request or requirement. If the owner agrees to the dedication, the owner shall provide two copies of the land title and a letter identifying him/her as land owner along with an address and telephone number.
- 2.24.4 The WCDPS Real Estate Office will perform the necessary activities of the dedication by conducting a title search, preparing the necessary property description of the newly dedicated right-of-way, and the preparing and recording of the deed.
- 2.24.5 The WCDPS will prepare a quit claim deed for the dedicated land to be signed by the property owner.
- 2.24.6 Prior to permit issuance, right-of-way and easements dedications shall be submitted and approved in a format that is recordable by Wayne County Register of Deeds and meets the drafting requirements of Act 132, P.A. of 1970.
- 2.24.7 The permit fee and plan review costs will be waived when the right-of-way dedication is received from the property owner.

SECTION 3: DRIVEWAY DESIGN & CONSTRUCTION

RULE 3.1 ACCESS MANAGEMENT

- 3.1.1 The efficiency and safety of a road or street depends to a large extent upon the influence of vehicles entering, leaving or crossing the roadway from residences, businesses and other developments. Consequently, the regulation and control of driveways are necessary to provide safe and efficient operation to and from the roadway and to utilize the full potential of the roadway. While landowners have certain rights of access to their property fronting the roadway that is consistent with their needs, roadway users also have certain rights to freedom of movement and safety. Ultimately, the Wayne County Department of Public Services (WCDPS) has the responsibility of regulating and controlling the location, design and operation of access to roads and streets under its jurisdiction. The mechanism utilized to better facilitate this task is termed Access Management.
- 3.1.2 Access Management is a set of proven techniques that help reduce traffic congestion, preserve road capacity and improve the safety and efficiency of the road by managing the location, design and type of access to adjacent property. Access Management can also extend the operational life of roads and improve the appearance along a corridor. Property owners located along roads utilizing these principles will benefit by enhancing developmental potential and preserving property values. The goal of WCDPS is to grant landowners access to their property or development in a manner that is consistent with the Access Management principles as described in the MDOT Access Management Guidebook.
- 3.1.3 The rules, standards and procedures as outlined in this section are the WCDPS policy guidelines concerning the Access Management, design and construction of driveways in a Wayne County road right-of-way.

RULE 3.2 TRAFFIC IMPACT STUDIES

- 3.2.1 The WCDPS recognizes the direct correlation between land use decisions and traffic operations. The Applicant's proposed project or development, and its needs for access, will create traffic impacts on the public roads. The intent of this section is to provide a framework for evaluation and mitigation of those impacts.
- 3.2.2 A Traffic Impact Study (TIS) is a complete analysis and assessment of traffic generated by a proposed development and its impact on the surrounding transportation system. A TIS study is required for any proposed development expected to generate over one hundred (100) peak hour directional trips, or 750 daily trips, or at the discretion of the Permit Office. If the study includes the review of potential signal operations, a pre-qualified signal operations consultant must be used. On the following page, Table 3-1 gives examples of land use that is expected to meet or exceed the 100 peak hour directional trips or 750 daily trips.

Table 3-1

EXAMPLES OF TYPICAL LAND USE SIZE THRESHOLDS BASED ON TRIP GENERATION CHARACTERISTICS		
Land Use	100 Peak Hour Trips (Directional)	750 Trips Daily
Residential Single Family Apartments Condos/Townhouse Mobile Home Park	150 Units 245 Units 300 Units 280 Units	70 Units 100 Units 120 Units 135 Units
Shopping Center *GLA) (3)	16,700 sq. ft.	3,400 sq. ft.
Fast Food Restaurant w/drive-thru (GFA) (3)	5,500	1,200
Convenience Store w/gas (GFA) (3)	1,000 sq. ft or 7 fueling stations	1,000 sq. ft.
Banks w/drive thru (GFA) (3,5)	4,400 sq. ft.	2,800 sq. ft.
Hotel/Motel	310 rooms	90 rooms.
General Office	37,200 sq. ft.	45,000 sq. ft.
Medical/Dental Office	40,800 sq. ft.	26,000 sq. ft.
Research & Development	87,000 sq. ft.	70,00 sq. ft. or 4 acres
Light Industrial	115,000 sq. ft.	115,000 sq. ft. or 11.5 acres
Manufacturing	215,000 sq. ft.	195,000 sq. ft.
Notes: <ul style="list-style-type: none"> • Rates/equations used to calculate the above thresholds are from Trip Generation Manual, 7th Edition, 2003, by the Institute of Transportation Engineers. This table will likely need updating as future editions provide additional information. • For example, a full traffic impact study should be completed (100 peak hour, peak direction trips generated) if 150 or more single family units are proposed for a site. • GLA – Gross Leaseable Area; GFA – Gross Floor Area. • Using AM peak-hour rates/equations would provide a lower threshold. However, adjacent roadway volumes are usually higher during the PM peak hour. • Uses both “Service Station with Market” and “Convenience Market with Pumps” data. • For further trip generation characteristics of the above land uses, or of other uses not illustrated above, refer to the latest version of Trip Generation. 		

3.2.3 The major benefit of a Traffic Impact Study is to determine what, if any, mitigation measures are needed. The study should present mitigation alternatives and recommendations. Mitigation measures are not limited to physical improvements. Mitigation can include changes to traffic signal timing or reducing the number of trips generated in the peak hour. Sample mitigation measures include, but are not limited to, the following:

- a) Roadway Improvements
 - 1. Construct an auxiliary turning lane
 - 2. Pave the roadway
 - 3. Re-align the road
 - 4. Improve sight distance
 - 5. Widen the roadway
 - 6. Intersection improvements
 - 7. Add deceleration/acceleration lanes
 - 8. Add a median crossover

- b) Access Management Techniques
 - 1. Increase driveway spacing from intersections
 - 2. Relocate driveway or intersection
 - 3. Reduce the number of driveways
 - 4. Install a median
 - 5. Develop a service road system
 - 6. Share access with adjacent land

- c) Operational Improvements
 - 1. Change signal timing or phasing
 - 2. Improve signal progression
 - 3. Reduce peak hour trips through transit
 - 4. Off-peak shift changes

- d) Site Plan/Land Use Techniques
 - 1. Reduce project size
 - 2. Modify project phasing
 - 3. Use of traffic control devices
 - 4. Pedestrian or bicycle circulation
 - 5. Internal circulation
 - 6. Service vehicle/truck access or circulation

- 3.2.4 When a TIS is required, it shall be prepared under the direction of an experienced traffic/transportation engineer and licensed as a Professional Engineer by the State of Michigan. The study shall also include a resume of the preparer and/or relevant experience of the firm responsible for the report and shall be signed by the preparer with full recognition of potential liability for the results and recommendations outlined in the report.
- 3.2.5 Traffic Impact Studies shall meet the requirements of Evaluating Traffic Impact Studies: A Recommended Practice for Michigan Communities,” by McKenna Associates, Inc. and the WBDC Group.
- 3.2.6 A TIS shall include:
- a) A narrative summary at the beginning of the report, including, but not limited to:
 1. The Applicant and project name
 2. A location map
 3. The size and type of development and any adjacent development
 4. Generated traffic volumes based on type and size of land use which are compatible with those listed in the ITE Trip Generation Manual, or which are developed according to the methodology described in the ITE Trip Generation Handbook and Manual.
 - b) Project phasing identifying the year of development activities per phase and proposed access plan for each phase including total build out.
 - c) A transportation system inventory, describing the physical, functional and operational characteristics of the study area highway system, and, where appropriate, locates transit services. The description shall provide, where pertinent, data on:
 1. Functional classifications
 2. Number of lanes
 3. Auxiliary lane lengths
 4. Cross section
 5. Intersection traffic signals and configuration
 6. Traffic signal progression
 7. Speed limits
 8. Percentage of heavy trucks
 9. Adjacent and opposing access point locations
 10. Jurisdiction
 11. Grades
 12. Peak-hour volumes (existing and projected)

- d) Site Plan shall include:
1. Descriptions and illustrations of the site at full build out, surroundings and study area
 2. Proposed use including details such as land use, the number and types of dwelling units, the gross and usable floor area of buildings, number of employees, shift changes, intended development phasing, potential future expansion, etc.
 3. Descriptions of surrounding land uses, expected development in the vicinity which could influence future traffic conditions
 4. Driveway design and roadway improvements
 5. A description of any programmed road improvements
 6. If land use information is incomplete or not known at the time of review, the WCDPS shall determine a land use consistent with similar site plans.
- e) Existing traffic conditions description as follows:
1. Traffic Counts shall include existing conditions including peak hour and daily traffic volumes on roads adjacent to the site and existing counts and levels of service for intersections in the vicinity which are expected to be impacted. Traffic count data shall be not more than two years old, to be increased by a factor supported by documentation or a finding that traffic has increased at a rate less than two percent (2%) annually over a period measured by the last three years, four years, or five years.
 2. Traffic counts shall be taken on Tuesday, Wednesday or Thursday of non-holiday weeks and preferably when public schools are in session. Additional counts; e.g., on a Saturday for a proposed commercial development or a Sunday for a proposed church, may also be required in some cases. The individual or firm performing the impact study shall obtain the traffic counts during average or higher than average volume conditions so as to minimize weather or seasonal variations, the effects of any construction or special events, etc.
 3. Roadway characteristics shall be described and illustrated as appropriate. Features to be addressed include lane configurations, geometrics, signal timing, traffic control devices, posted speed limits, average running speeds and any sight distance limitations. Existing levels of service shall be calculated for intersections included within the study area.
 4. Existing driveways and potential turning movement conflicts in the vicinity of the site shall be illustrated and described.
 5. The existing right-of-way shall be identified along with the Master Plan for Right-of-Way for Wayne County.
 6. Traffic crash data and analysis covering the most recent three years for the study area or proximity to site access points may be required, particularly for sites along roadways identified as critical or congested corridors.

- f) Forecasted trip generation of the proposed use shall be provided for the A.M. and P.M. peak hours and the average day. The forecasts shall be based on the data and procedures outlined in the most recent edition of the ITE Trip Generation Handbook and Manual and per the methodology as described in the ITE Trip Generation Handbook. The Applicant may use other commonly accepted sources of data or supplement the standard data with data from at least three similar developments located in southeast Michigan. Any reduction for pass-by trips, transit, ridesharing, and other modes of travel or internal capture rates shall be based on both ITE findings and documented survey results acceptable by the WCDPS. For projects intended to be developed in phases, the trip generation by phase shall be described.
- g) Traffic Volume Analyses with and without the proposed development and with the proposed development for both existing and projected traffic volumes.
 - 1. Traffic volumes for the development shall assume a total build out and, in the case of multi-phase development, evaluate the cumulative effects of each phase.
 - 2. Generated traffic volumes shall be distributed (inbound v. outbound, left turn v. right turn) onto the existing road network to project turning movements at site access points and nearby intersections where required.
 - 3. Projected turning movements shall be illustrated in the report.
 - 4. A description of the application of standard engineering procedures for determining the distribution should also be attached; e.g., trip distribution model, market studies, counts at existing driveways, etc.
 - 5. For projects requiring a Regional Traffic Analysis, use of a network traffic assignment model projection may be required to help evaluate impacts.
- h) For major traffic generators, a Traffic Impact Statement with a development completion date one year beyond the time of the traffic study shall also include analysis of forecast traffic at date of completion along the adjacent road network. The forecast shall be based on a network traffic assignment model (if available), historic annual percentage increases and future approved development in the area. Long range projections shall be used when a Regional Traffic Analysis is required.
- i) Level of Service and capacity analysis of the roadway and the proposed access points shall use procedures outlined in the most recent edition of the TRB, Highway Capacity Manual.
 - 1. The Level of Service (LOS) and capacity shall be evaluated for the critical movements at site access points. Also, the traffic study should show the projected level of service for all movements at signalized intersections and for all critical movements at unsignalized intersections. If the LOS of the existing intersections are a "D" or better, and the proposed project will produce a LOS of "E" or worse at one or more movements at a nearby intersection or site access point, mitigation needs to be evaluated. If the intersection LOS is currently an "E" or worse, the current LOS or vehicular delay must be maintained or improved.
 - 2. Capacity analysis shall be performed at each access point. Default values shall not be used when actual values are reasonably available or obtainable. The interaction of conflicting traffic movements shall be addressed in the Traffic Impact Study.

3. Show Gap studies for unsignalized intersections where applicable.
 4. For projects requiring a Traffic Impact Statement or Regional Traffic Analysis, before and after capacity analyses shall also be performed for all intersections where the expected traffic generated at the site will comprise at least five percent of the existing intersection capacity, or for roadway sections and intersections experiencing congestion or a relatively high crash rate, as determined by the WCDPS.
- j) The Traffic Impact Study shall also include the following:
1. Description of any additional right-of-way were planned or desired by the WCDPS.
 2. Changes that should be considered to the plat or site plan layout.
 3. Description of any needed non-motorized facilities.
 4. If the use involves a drive-through facility, the adequacy of the queuing/stacking area should be evaluated.
 5. If a median crossover is desired, separate analysis should be provided.
 6. If a traffic signal is being requested, provide the relationship of anticipated traffic to traffic signal warrants in the most recent edition of the MUTCD. Analysis should also be provided of the impacts to traffic progression along the roadway through coordinated timing.
 7. Description of site circulation and available sight distances at site driveways.
- k) The study shall include a map and description of the location and design of proposed access points (driveways or road approaches) including: any sight distance limitations, dimensions from adjacent driveways and intersections within 250 feet on either side of the main roadway, data to demonstrate that the number of driveways proposed is the fewest necessary, and evidence that the proposed access points will provide safe and efficient traffic operation and will comply with all WCDPS rules.
- l) The study shall outline mitigation measures and demonstrate any changes to the level of service achieved by these measures. Any alternatives or suggested phasing of improvements should be described. The mitigation measures may include items such as roadway widening, addition of turn lanes or deceleration and acceleration tapers, changes to signalization, use of Access Management techniques or a reduction in the proposed intensity of use. Proposed mitigation measures should be discussed with the WCDPS. The responsibility for and timing of roadway improvements shall be described.
- m) The completed analysis shall be summarized in a table showing all the Measures of Effectiveness (MOE) for all of the above conditions, as determined necessary by the WCDPS.
- n) The WCDPS may require a Regional Traffic Analysis which evaluates the impact on the road network over a wide area for up to twenty (20) years for a project of regional significance, if a network model is available.
- o) Required operational changes shall be part of the permit approval process.

RULE 3.3 TRAFFIC IMPACT ASSESSMENT

- 3.3.1 If a TIS is not required, a less rigorous Traffic Impact Assessment based on total site build out may still be required by the Permit Office. Site specific data may be submitted for consideration as part of the application. The current ITE Trip Generation Handbook and Manual shall be utilized for any required study.

RULE 3.4 CHANGE IN LAND USE

- 3.4.1 When the use of land served by a driveway is changed or expanded, and the change or expansion may cause the existing driveway to be a potential safety hazard or to be inconsistent with criteria described in this manual, the driveway will be considered a new driveway in accordance with MCL §247.327. Property improvements that impact the operation of roadway traffic may require alteration in the number, design or location of driveways.

RULE 3.5 LOCATION AND NUMBER OF DRIVEWAYS

- 3.5.1 The location and spacing of access for commercial driveways and road approaches is an important element in the planning, design and operation of roadways. Access points are the main location of crashes and congestion. Their location and spacing directly affect the safety and functional integrity of the roadway.
- 3.5.2 Property improvements that impact the operation of roadway traffic may require alteration in the number, design or location of driveways.
- 3.5.3 In general, one access point is adequate for a single business. When one-way pair driveways (In-Out) are requested and the on-site traffic circulation promotes such operation, these driveways may be considered as a single access point. If multiple access points are requested, the Permit Office may require a traffic impact study from the business owner/property owner to justify the need for the multiple access points.
- 3.5.4 A driveway shall be located so that no undue interference with the free movement of roadway traffic will result. A driveway shall be located to provide the most favorable vision and grade conditions possible for motorists using the roadway and the driveway consistent with development of the site considering proper traffic operations and safety. Driveways shall be located to provide the minimum recommended AASHTO sight distance; i.e., intersection, stopping, passing, etc.
- 3.5.5 Adjacent driveways on the same side of the road shall be spaced as far apart as on-site circulation allows. In some cases, the Permit Office may require that the business owner/property owner redesign the site plan and relocate the access point to meet the desirable spacing distance. Two adjacent drive approaches in such proximity to each other that they appear to be a single boulevard drive approach may cause confusion to the motoring public.

- 3.5.6 Table 3.2 shows desirable unsignalized access spacing as a function of posted speed. These distances are based on average acceleration and deceleration considered adequate to maintain good traffic operations. The sight distance at the access points must also be investigated. Driveway spacing in Table 3-2 is measured from centerline to centerline.

Table 3-2

UNSIGNALIZED ACCESS SPACING (ADJACENT)	
Design Speed (mph)	Center-to-Center of Access (ft)
25	130
30	185
35	245
40	300
45	350
50 and above	455

- 3.5.7 In the event that a particular parcel or group of parcels lack sufficient frontage to maintain adequate spacing, the owner(s) have several options:
- Seek a variance from the Permit Office for the desired spacing. To minimize left turn conflicts, driveways should be either aligned directly with those across the road or offset a sufficient distance from those across the road to achieve the minimum spacing standards listed in Table 3-2.
 - Adjacent property owners may consolidate their driveways by using either a frontage road or a shared access system. If frontage roads are used, they shall be placed on private property outside of the Master Plan Right-of-Way. In a shared access system, the driveway centerline should be the property line between the two parcels. Driveways must meet County standards and specifications and the estimated driveway volume will be the sum of the trip generation rate of both parcels.
 - In areas where frontage roads or service drives exist or can be constructed, individual properties shall be provided access to these drives rather than directly to the main roadway.
 - After all the above options are exhausted, an access may be allowed within the property limits as determined by the County Highway Engineer.
- 3.5.8 If a road carries one-way traffic, the dimensions provided in Table 3-2 may be revised so that the movements creating conflict are discouraged. If the driveway system is on the left-hand side of a one-way road, the dimensions approved shall be based on the same principles as used on right-hand side driveways.
- 3.5.9 In accordance with AASHTO guidelines, driveways should not be situated within the functional boundary of at-grade intersections. This boundary includes the longitudinal limits of auxiliary lanes. An access point may be allowed within the above boundary if the entire property frontage is located within this boundary.

- 3.5.10 Restricting or prohibiting left turns at unsignalized access points aligned across from each other can greatly reduce safety and operational problems. Driveways should be aligned with other driveways located on the opposite side of the road so as to avoid left turn conflict from both the ingress and egress perspective. If offset driveways cannot be avoided, then left turns may be prohibited using channelization and/or regulatory signing, unless driveway spacing can be increased to provide for left turns. Spacing between offset driveways is measured from centerline to centerline (refer to Figure 3-1). Table 3-3 provides the desirable distances between two access points on the opposite side of the roadway.

SPACING BETWEEN OFFSET DRIVEWAYS

Figure 3-1

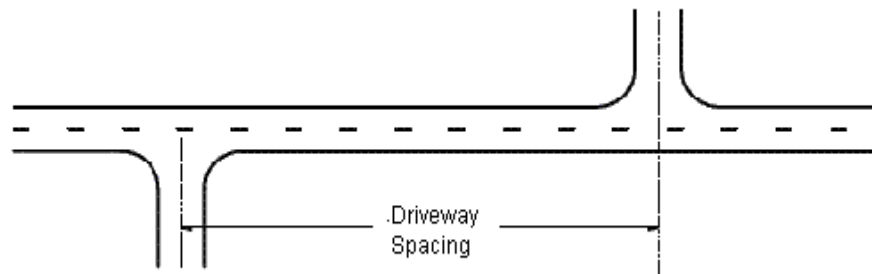


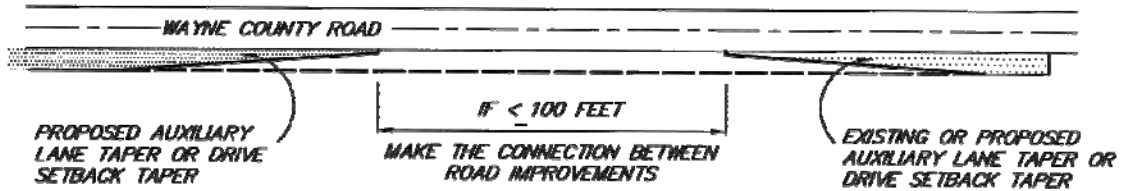
Table 3-3

DESIRABLE DRIVEWAY OFFSETS ON UNDIVIDED ROADWAYS	
Design Speed (mph)	Center-to-Center of Access (ft)
25	255
30	325
35	425
40	525
45	630
50 and above	750

- 3.5.11 Driveways, including the radii, but not including the right-turn lanes and tapers, shall be located entirely within the permit Applicant's right-of-way frontage. This right-of-way frontage is determined by projecting the property lines to the centerline of the road. Radii on adjacent right-of-way frontage shall be permitted only after obtaining a letter allowing the encroachment from the adjacent property owner and/or when the Permit Office has determined that such an extension is necessary.
- 3.5.12 A driveway shall not be constructed along acceleration or deceleration lanes and tapers, unless no other reasonable access point is available. The Permit Office may require extension of these lanes by the Applicant.

- 3.5.13 In the event that a proposed driveway, auxiliary lane and associated tapers terminate within one hundred (100') feet or less of an adjacent taper, then a full width lane connection shall be made. Existing tapers may require removal as directed by the Permit Office. Refer to Figure 3-2.

Figure 3-2



TAPER PROXIMITY CONNECTION

- 3.5.14 In the event that a proposed driveway, auxiliary lane and tapers result in an establishment of a one thousand (1,000') feet or more full width lane, then the lane shall be terminated with a minimum three hundred (300') feet taper.
- 3.5.15 Driveways shall not be constructed along the acceleration or deceleration lanes and tapers connecting to freeway interchange ramp terminals.
- 3.5.16 Spacing between a road intersection and an access connection shall be sufficient to avoid creating conflicts between driveway traffic movements and road movements at the intersection. The corner clearance required is a function of the types of roads which intersect. In all quadrants of an intersection, access points should be located according to the dimensions shown in Figure 3-3. Table 3-4 provides the minimum corner clearance dimensions. The spacing requirements in Table 3-4 are from the centerline of the proposed driveway to the near right-of-way line of the intersecting road.

CORNER CLEARANCE ACCESS POINTS

Figure 3-3

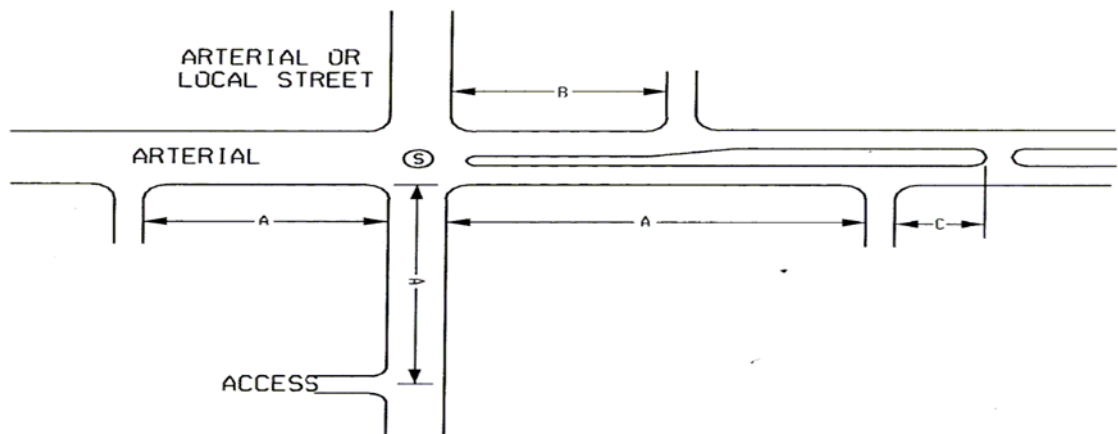


Table 3-4

CORNER CLEARANCE			
Design Speed (mph)	Dimension	Signalized Intersection Control (ft)	Stop Sign Intersection Control (ft)
25 to 35	A	230	115
	B	115	85
	C	75	75
40 to 55	A	460	230
	B	230	170
	C	150	150

3.5.17 The number of residential driveways permitted shall be determined as follows:

- a) One (1) residential driveway shall be permitted for each platted lot or for each un-platted residential parcel.
- b) Two (2) residential driveways may be permitted for residential property with more than three hundred (300') feet of frontage if, in the opinion of the Permit Office, the additional driveway does not create a safety problem.
- c) Two (2) residential driveways may be permitted on the same property, in lieu of the above, to serve a circle driveway if the frontage of the property is eighty-five (85') feet or more at the right-of-way line.

3.5.18 Residential driveways may serve up to four single-family dwellings or single lots.

3.5.19 Residential driveways on the same property shall be at least forty-five (45') feet apart, center-to-center.

3.5.20 For existing or proposed subdivisions and condominiums, residential lots or units (out lots) abutting Wayne County primary or collector roads shall not have an access into the Wayne County primary or collector roads.

3.5.21 The Application shall specify the driveway system requested, including the number and type (two-way, one-way or divided) of driveway(s). The Permit Office may approve the requested system or may require as a condition of issuance that the Applicant make changes to ensure safe operations and necessary spacing between driveways. Such requirements shall be based on anticipated traffic volumes on the driveways and on the road, type of traffic to use the driveway, characteristics of roadside development, and other safety and operational considerations. Generally, only one driveway per parcel will be permitted.

RULE 3.6 DRIVEWAY GRADE

3.6.1 The driveway grade shall be determined using the following criteria:

- a) If the road is uncurbed, the grade of the driveway between the highway edge of pavement and the edge of the shoulder shall conform to the slope of the shoulder.
- b) If the road is uncurbed, or if the sidewalk/path is more than ten (10') feet from the edge of the pavement or if there is no sidewalk/path:
 1. The grade of a two-way, one-way or divided commercial driveway shall not exceed 1.5% for a minimum distance of twenty-five (25') feet from the edge of the pavement. Beyond this distance, the grade shall not exceed eight percent (8%).
 2. The grade of a residential or utility structure driveway or field entrance shall not exceed ten (10%) percent.
- a) If the road is curbed and if the sidewalk/path is ten (10') feet or less from the edge of pavement, the grade of a driveway, except a directional driveway, shall be the grade required to meet the sidewalk/path elevation; but if that grade would exceed the maximums specified in Paragraph (b), the sidewalk shall be either tilted or inclined within Americans with Disabilities Act (ADA) limitations.
- b) The grade of a directional driveway shall be designed so as to provide vision of the highway edge of pavement and the driveway surface for a distance of one hundred (100') feet along the driveway. For a driveway on an upgrade towards the highway, a grade of 1.5% for a distance of one hundred (100') feet from the edge of the pavement is acceptable. Beyond this distance, the grade shall not exceed four (4%) percent and the difference in grades where there is a change of grade shall not exceed three (3%) percent.
- c) Vertical curves with a minimum length of fifteen (15') feet shall be provided at a change of grade of four (4%) percent or more.
- d) If the sidewalk/path elevation has to be adjusted to meet the driveway, the Permit Office may require that the sidewalk be inclined within ADA limitations.

RULE 3.7 SIGHT DISTANCE

3.7.1 Minimum sight distance for all driveways and road approaches shall be in accordance with the current edition of the AASHTO Policy on Geometric Design of Highways and Streets.

3.7.2 The safety of an access connection is improved where the location and geometrics of the connection are clear to approaching drivers and the driver of a stopped vehicle intending to enter or cross the intersecting road. The area on either side of an access connection should contain a triangular area free of obstructions that might block an approaching or stopped driver's view. To provide for adequate vision, all obstructions must be removed within the clear vision area, otherwise known as a sight distance triangle.

- 3.7.3 At intersections or railroad crossings where Wayne County owns limited access right-of-way to provide a clear vision area, no driveway shall enter or cross any part of that clear vision area. Where Wayne County has an easement for a clear vision area, driveways shall not be permitted through the clear vision area.
- 3.7.4 Applications for driveways which do not provide minimum adequate sight distance may be denied.

RULE 3.8 BUFFER AREAS

- 3.8.1 Adjacent to and on both sides of a driveway, a buffer area between the right-of-way line and the pavement edge shall be provided, as determined necessary by the Permit Office, to provide a physical barrier between highway traffic and activity on private property. A buffer area is needed to provide an unobstructed vision area and to prevent potentially hazardous movement of vehicles, especially at undesirable angles of approach, from and to the road. The buffer area shall consist of a lawn area, a low shrub area, a ditch or equivalent. Where encroachment of vehicle parking on the buffer area takes place or may take place, the Permit Office may require the buffer area to be established by a) guardrail, guard posts, curb or equivalent and/or b) traffic control order and installation of regulatory signs and other physical barriers as deemed necessary by the Permit Office. In every case, an area of unobstructed vision shall be provided at either side of driveways. This may require the removal of trees, shrubs, ground cover, earthen embankments and other landscape features or obstructions.

RULE 3.9 DRIVEWAY DIMENSIONS

- 3.9.1 Driveways shall be designed to accommodate the largest vehicle that will normally use the driveway.
- 3.9.2 Commercial
 - a) By definition, commercial driveways serve commercial establishments, industry, governmental or educational institutions, hospitals, churches, apartment buildings, condominiums, manufactured housing communities or any other facility not included within the definitions of residential, field or utility structure driveways.
 - b) Commercial driveway dimensions shall conform to the standard plan, Commercial Drive Approach (D-6).
 - c) Commercial driveways may be set back from the edge of the traveled roadway as discussed in Rule 3.5 above and as directed by the Wayne County Engineer. Work with the standard plan, Typical Concrete Taper, (P-2).

3.9.3 Residential Driveways

- a) Residential driveway dimensions shall conform to the current Wayne County Standard Plans for Construction reference below:
1. Residential Drive on Primary Curbed Road (D-1) Refer to Sheet D-7 or curb cut details.
 2. Residential Drive on Primary Uncurbed Road (D-2)
 3. Residential Drive on Local Curbed Road (D-3)_Refer to Sheet D-7 for curb cut details.
 4. Residential Drive on Local Uncurbed Road (D-4)
 5. Residential Drive Approach on Gravel Road (D-5)

3.9.4 Refer to General Notes, RS-1 when utilizing the above standard plan sets.

3.9.5 Typical dimensions in the Standards shall be used unless otherwise approved by the Wayne County Engineer.

RULE 3.10 AUXILIARY LANES

3.10.1 A deceleration lane and/or tapers or left turn prohibition may be required as part of a commercial driveway project or other heavy traffic generator if the WCDPS determines that the lane or left turn prohibition is needed to minimize congestion or hazards on the highway which may be caused by motorists accessing the proposed driveway. The standard plan, Warrant for Right Turn Deceleration Lane (AL-4), indicates the ranges for traffic volume that warrant the additional construction of a deceleration lane and/or tapers. Refer to standard plan, Typical Right Turn Deceleration Lane (AL-5) for information on the lane design.

3.10.2 A left turn passing lane as part of a commercial driveway project or other heavy traffic generator may be required due to heavy peak hour traffic volume when warranted on the standard plan chart, Warrant for Left Turn Passing Lane (Two Lane Road), (AL-1) and Warrant for Left Turn Passing Lane (Four Lane Road) (AL-3). When conditions such as horizontal and vertical sight distance, traffic signal location and other physical factors directly affect public safety, a passing lane will be required. Refer to standard plan, Typical Left Turn Passing Lane (AL-2) for information on the lane design.

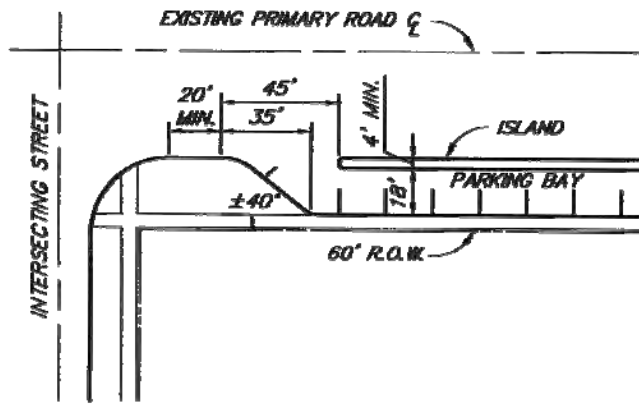
RULE 3.11 DRIVEWAY CONSTRUCTION

3.11.1 Driveways and other right-of-way improvements including, but not limited to, curbing, pavement widenings, tapers, shoulders, sidewalks and drainage shall be constructed according to the design and constructions rules and methods detailed in Section 5: *Right-of-Way Improvements*.

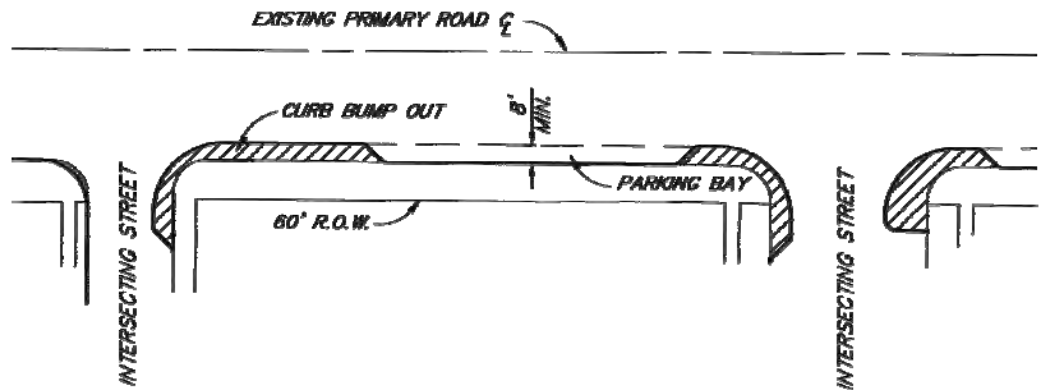
RULE 3.12 PARKING AND "DRIVE-IN" STORAGE

- 3.12.1 Adequate storage for vehicles parking or waiting to be serviced shall be provided so as not to interfere with pedestrian movements, vision requirements or traffic operations on the roadway.
- 3.12.2 Commercial establishments of a "drive-in" nature; i.e., drive-in restaurants, drive-in banks, auto washes, etc., should provide adequate storage off roadway rights-of-way for vehicles waiting to be serviced because vehicle storage on roadway lanes or shoulders may constitute a traffic hazard to the public.
- 3.12.3 The approval of parking facilities between the County road pavement and right-of-way line will be considered only in urban areas where there is a shortage of available parking and where the existing land use precludes the feasible development of adequate parking outside of the road right-of-way.
- a) Parking facilities designed for angle parking will generally not be permitted.
 - b) Each parking facility must be designed as a single unit along the full length of one block. The facility must be paved to County standards and specifications and have proper drainage.
 - c) The County's Traffic Engineer will be consulted on all reviews involving the proposed construction of parking facilities within a County road right-of-way.
 - d) A construction permit for a parking facility within a Wayne County road right-of-way will be issued only to the local unit of government and only upon receipt of a certified resolution by which the local unit of government;
 1. Agrees to construct, maintain and operate the parking facility at no cost to the County,
 2. Indemnifies and saves the County harmless from all claims arising from the parking facility, and
 3. Designates a local government official to sign the construction permit.

Figure 3-4



EXAMPLE OF A PARKING BAY



EXAMPLE OF A CURB BUMP OUT WITH A PARKING BAY

Figure 3-5 shows typical examples of parking bays.

RULE 3.13 TRAFFIC CONTROL DEVICES AT DRIVEWAYS AND ROAD APPROACHES

- 3.13.1 The Permit Holder shall provide and/or maintain traffic control devices as required by the WCDPS and per the current Manual on Uniform Traffic Control Devices (MUTCD). The plans shall illustrate and specify all required traffic control devices. For private road approaches, a private road sign package including a stop sign and road name panel is required and shall be paid for by the Permit Holder. The private sign package will be fabricated, installed and maintained by the Permit Holder.
- 3.13.2 The Permit Holder shall provide, erect and maintain all necessary signing (Stop, Keep Right, Do Not Enter, etc.) and/or pavement markings which are determined to be required by the Permit Office. The Permit Holder is responsible for all costs associated with this work. All traffic signs and pavement markings must be approved by the Permit Office before they may be used within the road right-of-way.
- 3.13.3 At high-volume intersections, traffic safety and operations may be enhanced by the installation of a traffic signal. Traffic signal warrants shall be determined by reference to a Traffic Impact Study completed by the Applicant's engineer. The installation of a traffic signal shall require approval of the County Highway Engineer. Although the warrants for the installation of a traffic signal may be satisfied, the County Highway Engineer may determine that a traffic signal would be detrimental to coordinated traffic flow, result in undue delay, impair traffic operations or impair traffic safety on the County road. In this case, a traffic signal shall not be installed. If authorized by the County Highway Engineer, the traffic signal shall be designed in accordance with the current MDOT Standard Specifications for Construction and MUTCD requirements.
- 3.13.4 All costs associated with a traffic signal installation necessitated by or approved in conjunction with any new or modified public road access shall be the sole responsibility of the Applicant. Prior to approval of an access facility with a traffic signal, the Applicant shall enter into a formal agreement with the WCDPS. The agreement shall delineate the responsibilities of the WCDPS and the responsibilities of the developer regarding the signal installation. The responsibilities of the developer shall include, without limitation, paying or causing to be paid all perpetual costs for the energy and maintenance of a traffic signal; paying or causing to be paid all costs for any future upgrading, revisions, modifications, and/or modernizations; providing the WCDPS with indemnification; and such other provisions related to the traffic signal installation as the WCDPS shall require. Ownership of the traffic signal shall remain with the WCDPS. If a traffic signal is required to be a part of an interconnected traffic signal system, the Permit Holder shall be responsible for all costs associated with the interconnection before or after the installation of the signal.
- 3.13.5 To facilitate progression of traffic in both directions at design speed through a system of traffic signals, spacing of signalized intersections of an arterial or major collector roadway with cross streets should be in multiples of at least one-quarter mile.

- 3.13.6 Signalization of driveways should only be considered if driveway traffic volumes or past crash experience warrants installation. With the approval of the County Highway Engineer, any warranted driveway signals may be located six hundred to seven hundred (600'-700') feet from adjacent signals if the driveways served form "T" intersections. Four-legged signalized driveway intersections should be avoided unless they are at least one-quarter mile from adjacent signals. Driveway signals should also be interconnected and coordinated with any other signal existing, or added later, at the time the driveway signal is installed within one thousand five hundred (1,500') feet of the signalized driveway.
- 3.13.7 Outside the public road right-of-way, the Applicant should provide and properly maintain approved permanent traffic control signs and pavement markings as necessary for the proper operation of the driveway intersection. All signs and pavement markings should conform to the current Manual on Uniform Traffic Control Devices. The plans shall indicate the signing and pavement markings required.

RULE 3.14 PRIVATE ROADS

- 3.14.1 The connection of a privately owned road to a Wayne County jurisdiction subdivision road is prohibited.
- 3.14.2 At the sole discretion of Wayne County, a privately owned road may be connected to a Wayne County jurisdiction local road if the local road is upgraded to a collector road standard.

RULE 3.15 MAINTENANCE

- 3.15.1 The Permit Holder will be responsible for the maintenance of all work constructed or placed in the road or street right-of-way, except for widening lanes which are incorporated into the main traveled roadway.

SECTION 4: UNDERGROUND CONSTRUCTION

RULE 4.1 GENERAL CONDITIONS

- 4.1.1 This section details underground/aerial design and construction standards for services including water, sewer, electric, gas, petroleum, telephone, cable or other similar facilities.
- 4.1.2 When working with this section, the Permit Holder shall comply with all relevant construction rules and guidelines provided in Section 7: *Maintaining Traffic and Traffic Control Devices*, Section 6: *Restoration Standards*, and in Rule 2.14: *Inspection and Testing of Materials*.
- 4.1.3 The Permit Holder shall comply with all requirements of the Miss Dig Statute, MCL §460.701 et seq., as amended. The Permit Holder shall call "MISS DIG", at (800) 482-7161, at least 72 hours prior, excluding Saturdays, Sundays and holidays, but not more than twenty-one (21) calendar days, before starting any underground work. The Permit Holder assumes all responsibility for damage to or interruption of underground utilities.
- 4.1.4 The Permit Holder shall call Wayne County Department of Public Services' Traffic Office, at (734) 955-2154, at least 72 hours prior, excluding Saturdays, Sundays and holidays, but not more than twenty-one (21) calendar days, before starting any underground work in the vicinity of any traffic signal equipment owned, operated or maintain by Wayne County.
- 4.1.5 Other than service taps and connections, only utility companies meeting the requirements listed in Rule 2.4 may be permitted to occupy the right-of-way.

RULE 4.2 LOCATION

- 4.2.1 Utility installations shall be located to minimize the need for later adjustments, to accommodate future roadway improvements and/or maintenance and to permit access to servicing the installations with minimum interference to roadway traffic.
- 4.2.2 Utility construction projects shall follow the placement standards detailed in Master Plan Utility Locations, RS-21. Any deviations from these standards shall be allowed only with prior approval of the Permit Office.
- 4.2.3 When utility construction placement falls outside existing road right-of-way, but within future road right-of-way, the Permit Office recommends that standard plan RS-21 should be followed, to its maximum possible extent. An easement should be secured from the property owner(s) prior to installation. If it is necessary to occupy the right-of-way during construction, a Wayne County permit shall be required.
- 4.2.4 Facilities owned by a utility company/agency or municipality shall be limited to one (1) service line within the County right-of-way. Additional service lines may be allowed only when approved by the Permit Office.

- a) Storm sewers – shall be located and aligned to best conform to the layout of existing facilities. In roads where no pattern has been established, storm sewers shall be located on the south or east side of the road between the back of curb (or shoulder point) and right-of-way line.
- b) Sanitary sewers – shall be located and aligned to best conform to the layout of existing facilities. In roads where no pattern has been established, sanitary sewers shall be located on the south or east side of the road between the back of curb (or shoulder point) and right-of-way line. Sanitary sewer lines shall not be placed within ten (10') feet of existing or proposed water main lines.
- c) Water mains – shall be located on the north or west side of the road between the back of curb (or shoulder point) and right-of-way line.
- d) Gas mains – shall be located on the east or south side of the road at a three foot (3') offset from the right-of-way line.
- e) Electric – shall be located on the east or north side of the road at a uniform offset between three (3') to five (5') feet from the right-of-way line.
- f) Telecommunications – shall be located on the east or north side of the road at a uniform offset between one (1') to three (3') feet from the right-of-way line.
- g) For joint trench type installations, alternative locations to the specified locations of electric, gas and telecommunications facilities may be considered by Wayne County.
- h) A minimum vertical clearance of eighteen (18") shall be maintained between any utility crossing. If a vertical clearance of less than eighteen (18") is allowed, then it shall be encased in concrete.

RULE 4.3 DEPTH OF COVER

- 4.3.1 The depth of cover is the depth between grade of roadway, ditch or other surface and top of any buried utility pipe, culvert, communication cable or electrical conductor.
- 4.3.2 Unless shown on approved plans, all new or replacement utilities shall be installed to provide a minimum depth of cover for the following:
 - a) Under existing or proposed road surface, not less than seven (7') feet of cover below the gutter line or edge of pavement.
 - b) When constructed across a County drain, not less than six (6') feet below the existing bottom of the drain or three (3') feet below the original bottom elevation of the drain, unless otherwise directed by the Permit Office.
 - c) When constructed in, or in close proximity to, or across a drainage ditch, the cover depth shall conform to Rule 4.3.2 (a) above or Rule 4.3.2(b) above, unless otherwise directed by the Permit Office.
 - d) Outside an existing or proposed road surface, County drain or ditches, not less than four (4') feet below existing or proposed ground surface.
- 4.3.3 Where the roadway is superelevated, the minimum depth shall be measured from the lower side of the road surface.

RULE 4.4 MATERIALS STORAGE

- 4.4.1 The road surface may not be used for the storage of materials or any other construction purpose without prior approval of Wayne County. If prior approval is given to store materials within the right-of-way, the materials shall be stored far enough away from the road surface so that they are not a hazard to the traveling public. The Permit Holder shall maintain sufficient clear areas on the shoulder so that a car can park off the road in an emergency. Materials and equipment shall not block the vision of traffic seeking ingress onto the road. Only those materials that will be used by the Permit Holder in their immediate operations can be stored in the right-of-way. All other materials, equipment and trailers must be stored in an area outside of the right-of-way.
- 4.4.2 Loading and unloading operation shall be conducted in a manner that minimizes congestion and delay to the traveling public. Proper traffic control must be in place prior to temporary lane closures to load or unload materials or equipment. The Permit Holder may close through lanes from 9:00 A.M. to 3:00 P.M. only to load or unload materials.
- 4.4.3 The Permit Holder shall remove all surplus materials to an area outside the right-of-way unless the permit otherwise provides. Excavated material and raw materials or equipment shall not be stockpiled or stored so as to not adversely affect the safety of the traveling public nor shall such material be disposed in such a manner that wetlands, floodplains, streams, rivers, drains or other defined watercourses are impacted. Work within wetlands or a wetland fringe is not authorized by the permit, unless accompanied by State or local wetland permit.

RULE 4.5 EXCAVATION

- 4.5.1 It is the sole obligation of the Contractor to conduct his operations in such a manner that the existing road structure integrity is not damaged. The County Engineer shall have the authority to require that trenches or excavations under or adjacent to the road surface or other facilities shall be sheeted, shored, well-pointed and otherwise constructed in such a manner as to prevent caving, loss or settlement of foundation material supporting the pavement or other facilities. All excavation activities shall comply with MIOSHA requirements.
- 4.5.2 Excavated material shall be stockpiled with the approval of the County Engineer in such locations that it does not obstruct vision on the traveled portion of the road. Excavation operations shall be conducted in such a manner that they afford minimum interference with the flow of traffic and do not obstruct existing necessary drainage facilities. The Contractor must dispose of all surplus material outside of the limits of the right-of-way, unless the County Engineer authorizes, in writing, disposal at an approved location(s) within the right-of-way.
- 4.5.3 Any geo-synthetic fabric or geo-grid encountered in the excavation must be restored in a manner that ensures the integrity of the material as it was originally intended. The material and methods of repair and/or installation shall conform to WCDPS Special Provision for Geo-synthetics, WC303(A), or as otherwise directed by the County Engineer.

- 4.5.4 The Permit Holder shall comply with Rule 7.12: *Protection of Plant Life*, when working near vegetation that is not required to be removed.

RULE 4.6 SHEETING AND BRACING

- 4.6.1 At all times the Contractor shall comply with MIOSHA construction requirements. The Contractor shall furnish and install adequate sheeting and bracing to insure the safety of workmen and inspectors during the construction period. Sheeting and bracing shall be installed in trenches and excavations for structures to prevent the caving of the side of such trenches and excavations due to soil characteristics, vibration and saturation by water or from any other cause whatsoever. Where unusual conditions are encountered and where the required excavation is of unusual depth, the Contractor shall furnish and install sheeting and bracing sufficient in amount and size to insure the stability of the walls of the excavation.

RULE 4.7 DUST CONTROL

- 4.7.1 The Permit Holder shall comply with the dust control, cleanliness and hauling rules listed in Rule 7.11: *Dust Control and Cleanliness of Work* and Rule 7.13: *Haul Routes and Normal Weight Restrictions*.

RULE 4.8 DEWATERING

- 4.8.1 The Permit Holder shall not directly or indirectly discharge any water, in excess of normal runoff rates of natural precipitation, into the Wayne County road drainage system or into the right-of-way in such manner as to cause a hazardous condition to either pedestrian or vehicular traffic or to cause erosion, sedimentation or ponding which adversely affects the stability of the roadway or damages adjacent property.
- 4.8.2 The Permit Holder will be required to furnish all equipment, material and labor to operate and maintain an adequate dewatering system for the removal of ground water from trenches or other excavations. Dewatering should be considered when water is known or expected to be encountered. Pumps of sufficient capacity to handle the flow shall be maintained at the site. Pumps in operation shall be constantly attended on a 24-hour basis until the operation can be safely halted.
- 4.8.3 Outlet filters or sediment basins shall be used before discharged water reaches roadside ditches, storm sewer inlets or surface waters. Placement of discharge lines on or across the surface of the traveled portion of any road will not be allowed without advance written permission from the Permit Office. The Permit Holder shall perform all necessary restoration of the road drainage system. If the County Engineer deems it necessary for the Permit Holder to either alter dewatering operations or to cease dewatering operations altogether for reasons of public safety, the Permit Holder shall immediately comply. The Permit Holder shall locate all dewatering facilities as far from the road surface as possible. If, due to extenuating circumstances, these facilities are located closer to the road than the back slope of the ditch, a Type "B" traffic construction sign and a high-intensity, flashing light mounted on a plastic drum shall be required at each location.

- 4.8.4 Dewatering shall be conducted whenever there is a high ground water table level to prevent flooding and facilitate the operation. The water table elevation shall be maintained at least two (2') feet below the bottom of the bore or excavation at all times. When needed, dewatering may be initiated prior to any excavation. The Permit Holder is responsible for any damages as a result of the lowering of the ground water.
- 4.8.5 Minor water seepage or pockets of saturated soil may be effectively controlled through bailing or pumping. This control shall be accomplished without removing any adjacent soil that could weaken or undermine any access pit, its supports or other nearby structure.
- 4.8.6 Larger volumes of ground water shall be controlled with one or more well points or with staged deep wells. Well points and staged deep well pumping systems shall be installed and operated without damage to property or structures and without interference with the rights of the public, owners of private property, pedestrians, vehicular traffic or the work of other Contractors. Any pumping methods used for dewatering and control of ground water and seepage shall have properly designated filters to ensure that the adjacent soil is not pumped along with the water. Well diameter, well spacing and the pump's pumping rate shall provide adequate draw down of the water level. Wells shall be located to intercept ground water that otherwise would enter the access pit excavation and interfere with the work. Upon removal of a well, the hole shall be filled with flowable fill as per WCDPS flowable fill specifications.
- 4.8.7 Existing storm sewers shall only be used to discharge water from the dewatering operation in accordance with a permit obtained from the appropriate storm sewer owner. Filters or sediment control devices shall be required to ensure that the existing system is not adversely affected by construction debris or sediment.
- 4.8.8 If grouting is used to prevent ground water from entering the area of the access pit, the grouting shall be installed without damage to property or structures and without interference with the rights of the public, owners of private property, pedestrians, vehicular traffic or the work of other Contractors. The grout material shall conform to WCDPS flowable fill specifications detailed in Rule 4.13.
- 4.8.9 All drainage shall be directed to an acceptable outlet as directed by the County Engineer.

RULE 4.9 UNDERGROUND SYSTEMS

- 4.9.1 Underground systems include services for water, sanitary sewer, storm sewer and other underground utilities.
- 4.9.2 All materials storage shall comply with Rule 4.4 above.
- 4.9.3 Structures
- a) Drainage and sanitary structures shall be constructed according to WCDPS "S" Series Standard Plans and Notes (see Table 4-1), Wayne County Special Provision for Drainage Structures (WC403A), Section 403 of the current MDOT Standard Specifications For Construction and the specifications detailed in Table 4-1 below. Refer to Rule 2.14 for WCDPS' material inspection and testing requirements.

Table 4-1

WCDPS STANDARD PLANS FOR PERMIT CONSTRUCTION INDEX		
Standard Number	Description	# Sheets
STORM DRAINAGE		
S-1	GENERAL NOTES – STORM DRAINAGE	2
S-2	MANHOLE A	1
S-3	MANHOLE B	1
S-4	MANHOLE C	1
S-5	MANHOLE D	1
S-6	CATCH BASIN A	1
S-7	INLET A	1
S-8	PRECAST MANHOLE A	1
S-9	PRECAST MANHOLE B	1
S-10	PRECAST INLET A	1
S-11	CONNECTION TO EXISTING SEWER 42 INCH AND LARGER	1
S-12	SEWER TRENCH A & B	1
S-13	SEWER TRENCH D CULVERT INSTALLATION	1
S-14	UNDERDRAIN	2
S-15	FRAME AND COVER A , COVER C	1
S-16	FRAME AND COVER S	1
S-17	CONCRETE CRADLE, CAST IRON TRAP	1
S-18	ADJUSTING SANITARY STRUCTURE, DETAIL 1	1
S-19	ADJUSTING SANITARY STRUCTURE, DETAIL 2	1

- b) The top of casting elevation on any structure constructed or reconstructed within the Wayne County right-of-way or drain easement shall be determined as follows:
1. If the structure falls within a paved road or other paved surface including driveways, side roads, sidewalks and non-motorized paths, the top of casting shall be set flush with the finished pavement elevation on all sides.

2. If the structure falls within the roadbed of a gravel road or the unpaved shoulder of a paved road, the top of casting shall be eight (8") inches below the finished gravel surface.
 3. If the structure falls within a ditch, the top of casting elevation shall be set at the top of the ditch slope elevation and a culvert including end sections of adequate length and size shall be installed in order to carry storm water past the structure. If a culvert cannot be installed, the ditch shall be relocated around the structure and away from the road with a stable earth berm around the structure as directed by the County Engineer.
 4. No structure shall protrude into the ditch.
- c) In the event that a structure cover falls within a traveled lane, turn lane or taper, the final pavement restoration shall take place within a minimum of thirty (30) days after the temporary pavement repair, unless approved by the County Engineer. The structure cover shall be set flush with the temporary surface or the first course of asphalt and then adjusted at the time of final surface restoration.
- d) Structure covers shall not be placed within the wheel path, unless otherwise directed by the County Engineer.

4.9.4 Methods

- a) Backfilling around structures shall not begin any sooner than twelve (12) hours after the structure has been completed, except pre-cast structures which may be backfilled immediately. In all cases, structures shall be approved by the County Engineer prior to backfilling. The backfill material shall be deposited evenly around the structures as follows:
1. Structure excavations under road surfaces, pavement, shoulders, sidewalk, curb, driveways and where the edge of the excavation is within three (3') feet of the pavement shall be backfilled entirely with sand meeting the requirements for Porous Backfill Class III, unless otherwise shown on the approved plans. The material shall be placed by the Controlled Density Method and shall be compacted to ninety-five (95%) percent of its maximum unit weight.
 2. All other structure excavations shall be backfilled as above, except that the Porous Backfill Class III shall be placed a minimum of five (5') feet from the outside wall of all structures and shall be carried to within one and one-half (1½') feet of finished grade. The remaining one and one-half (1½') feet of backfill shall be suitable excavated material as approved by the County Engineer.

4.9.5 Storm Sewer Pipe

- a) Within the County right-of-way, all storm sewers shall be placed with a minimum twelve (12") inch C-76, Class IV Concrete Pipe.
- b) Trench excavation shall begin at the downstream end of the sewer. The trench shall be excavated to the line and grade shown on the plans, unless otherwise directed by the County Engineer. Trench excavation shall be performed according to the following standards: General Notes on Storm Drainage (S-1), Sewer Trench A, B (S-12) or Sewer Trench D and Culvert Installation (S-13). The bottom of the trench shall be shaped so that the pipe is uniformly supported. Where rock or hardpan is encountered, excavate the trench to a minimum of six (6") inches below the proposed bottom of the pipe, backfill and compact with Granular Material Class III.
- c) Surplus excavated material from sewer trenches becomes the property of the Permit Holder and must be removed from any Wayne County right-of-way, easement, drain or property.
- d) The Contractor shall support and protect any residential connections, water mains, sanitary sewers, gas mains, conduits, storm sewers, drains and etc., encountered in the trench excavation. If a connection is damaged during the course of construction, the Contractor shall immediately repair or replace the damaged connection as directed by the County Engineer or by the owner of the utility. Any repair or replacement costs shall be paid at the Permit Holder's expense.
- e) Service interruptions should be kept to a minimum. If a service interruption is necessary, the Contractor shall coordinate with any local municipalities or utility companies subject to a service interruption.
- f) Storm sewer pipe is to be installed in a trench to the line and grade as called for on the approved plans. The bell end of the pipe shall face in the direction of the pipe installation. The bell and spigot of the pipes are to be clean and aligned before homing the joint. Placed pipe that is damaged or showing signs of settlement or poor alignment shall be removed and re-laid as directed by the County Engineer.
- g) The trench shall be backfilled as detailed in Rule 4.13.

4.9.6 Underdrain

- a) The trench shall be excavated to the line and grade shown on the plans, unless otherwise approved or directed by the County Engineer. The trench, including width and required excavation below the pipe, shall be excavated and backfilled in accordance with the standard plan, Underdrain (S-14).
- b) All outlet endings that outlet into a ditch or drain shall have installed either a steel end section or a concrete end section with rodent screens.
- c) All pipe is required to be tested by the WCDPS Testing Office. Refer to Rule 2.14 for information about WCDPS' testing requirements.
- d) Any physical damage, cracking due to shipping, handling or the manufacturing process may lead to the rejection of that material.

RULE 4.10 UNDERGROUND DETENTION SYSTEMS

- 4.10.1 The Permit Holder shall design, test and install underground detention systems as detailed in Chapter 8.1.3 in the Wayne County Storm Water Management Manual, under "Specific Design Standards and Guidance for Best Management Practices".
- 4.10.2 The WCDPS shall test, inspect and approve all construction components and materials used from the pre-treatment structure out to the point of discharge. A pre-treatment structure is the last structure in the collection system leading into the treatment system. Refer to Rule 2.14 for material testing requirements.

RULE 4.11 FOREBAY AND OPEN/RETENTION BASINS

- 4.11.1 The Permit Holder shall design, test and construct forebays and open detention systems as detailed in Chapter 8.1.1 in the Wayne County Storm Water Management Manual, under "Specific Design Standards and Guidance for Best Management Practices". Retention basins are detailed in 8.1.2 in the above referenced site.
- 4.11.2 The WCDPS shall test, inspect and approve all construction components and materials used from the pre-treatment structure out to the point of discharge. Refer to Rule 2.14 for material testing requirements.
- 4.11.3 Refer to Rule 2.14 for testing requirements regarding forebays and open detention basins.

RULE 4.12 BIORETENTION AND VEGETATIVE SWALES

- 4.12.1 The Permit Holder shall design, test and install underground detention systems as detailed in Chapter 8.2.2 in the Wayne County Storm Water Management Manual, under "Specific Design Standards and Guidance for Best Management Practices".
- 4.12.2 Certifications will be required for all materials, except drainage structures and underdrain.

RULE 4.13 BACKFILL

- 4.13.1 For backfilling utility repairs, flowable fill shall be used unless otherwise approved by the Engineer. (See Rule 4.13.3, g-n)
- 4.13.2 Trench Backfill standards are shown in standard plans, Sewer Trench A, B (S-12) or Sewer Trench D and Culvert Installation (S-13).
- 4.13.3 All trenches, holes and other excavations shall be filled with suitable earth or with porous backfill material conforming to the current requirements of the WCDPS. Compaction shall be performed by mechanical tamping and subject to Controlled Density Method checks conducted by the WCDPS Testing Office.

- a) Sewer Trench "A": All other trenches shall be backfilled with sand meeting the requirements for Porous Backfill Class III to a point six (6") inches above the pipe for diameters less than thirty (30") inches and up to the spring line for diameters thirty (30") inches and larger. This portion of the backfill shall be placed by the Controlled Density Method or other effective means having the approval of the Permit Office and compacted to ninety-five (95%) percent of its maximum unit weight. The remainder of the backfill shall be made with suitable excavated materials, excluding blue clay, placed in one (1') foot layers, or a thickness approved by the County Engineer, with each layer being thoroughly compacted by approved mechanical methods to ninety-five (95%) percent of its maximum unit weight.
- b) Sewer Trench "B": Trenches under pavements, proposed pavements, shoulders and other road surfaces, sidewalks, curbs, existing or proposed utilities, driveways or where the edge of a trench excavation is within three (3') feet of the pavement shall be backfilled with sand meeting the requirements for Porous Backfill Class III, unless shown otherwise on the approved permit plans. The materials shall be placed by the Controlled Density Method or other effective means having the approval of the County Engineer and compacted to ninety-five (95%) percent of its maximum unit weight.
- c) Backfilling of transverse and longitudinal trenches under aggregate shoulders shall be as specified under Trench "B". Backfilling shall be carried to within the proposed bottom of the aggregate shoulder and the remaining depth backfilled with six (6") inches of compacted 22X or 23A aggregate mixed with calcium chloride.
- d) Backfilling of trenches crossing driveways shall be carried to the subgrade as specified under Trench "B". Gravel driveways shall be deemed as extending to the edge of the traveled roadway and shall include the shoulder area. The remaining depth shall be backfilled with a minimum of six (6") inches of compacted 21AA aggregate. Concrete driveways shall be replaced with Grade S2 concrete (3500 PSI at 28 days). Concrete or asphalt driveways shall be replaced in kind to the County's minimum driveway standards or to the removed thickness, whichever is greater.
- e) Backfilling of trenches crossing gravel roads or streets shall be carried to within twelve (12") inches of the existing surface as specified under Trench "B". The remaining depth shall be backfilled with two (2) layers of five (5") inches of compacted 21AA aggregate topped with two (2") inches of compacted 22A aggregate mixed with calcium chloride.
- f) The compaction shall be performed by a pneumatic-tired roller or a vibratory compactor until the material forms a stable surface and meets the density requirements.
- g) Flowable fill shall be placed as indicated on the approved plans or as directed by the County Engineer. All requirements for flowable fill and related work will conform to MDOT Standard Specifications for Construction and Wayne County Special Provision for Flowable Fill (WC206A). Flowable fill shall consist of a mixture of Portland Cement Concrete (Type 1), granular material (fine aggregate), fly ash (Class F) and water mixture utilized as a controlled density fill.

- h) Granular material shall meet the requirements of Class IIA material as specified in the MDOT Standard Specifications for Construction, except that one hundred (100%) percent shall pass the three-quarter (3/4") inch sieve. The fly ash shall meet ASTM requirements C-618 Class F with no limit on the loss of ignition.
- i) The flowable fill mix proportions shall consist of the following:

Table 4-2

FLOWABLE FILL MIX PROPORTIONS		
MATERIAL	POUND PER CUBIC YARD	ASSUMED SPECIFIC GRAVITIES
PORTLAND CEMENT (TYPE 1)	50	3.15
FLY ASH (CLASS F)	500	2.40
GRANULAR MATERIAL	2,850	2.60
WATER	SUFFICIENT WATER TO PROVIDE THE DESIRED FLOWABILITY (APPROXIMATELY 40 GALLONS)	1.00

- j) The flowable fill mix proportions may be adjusted by the County Engineer.
- k) The temperature of the flowable fill mixture as manufactured and delivered shall be at least 50°F and transported to the point of placement in a revolving drum or agitator.
- l) The batching equipment shall have devices designed to measure the specified quantities of each component material and mixing shall be of sufficient duration to insure uniform consistency of the mixture. No water may be added to the flowable fill mixture after batching. Water content shall be maintained so that compressive strengths are achieved and a uniform, flowable mixture is developed that is essentially self-leveling when placed.
- m) During trench flowable fill placement operations, care shall be used to avoid dislocating any pipes due to fluid pressure from the flowable fill. All pipes within the backfill area shall be secured to avoid a buoyant effect of flowable fill. Pipelines, manholes and other areas not intended to receive flowable fill shall be sealed tightly to prevent infiltration of fill material.
- n) Upon completion of a casing filling operation, the casing ends shall be sealed with a minimum one (1') foot thick bulkhead of commercial grade concrete or approved alternate.

RULE 4.14 TRENCHLESS UNDERGROUND CONSTRUCTION

- 4.14.1 All underground utility crossings of any roads under Wayne County jurisdiction shall be accomplished by trenchless and non-destructive methods, unless otherwise approved by the Permit Office. Approved trenchless installation methods are described in the section below. Crossings that involve a cable or duct larger than two (2") inches shall utilize either a directionally drilled pipe method or an augering method to place an underground utility. The use of water jetting or air jetting, air rams, missiles, thumpers or hole hogs are prohibited.

RULE 4.15 SQUEEZE BORING

- 4.15.1 Small diameter bores of two (2") inch nominal diameter or less can be accomplished by "squeeze" boring using a compaction auger or hydraulic push rod. The use of any directionally controlled augering device shall be approved by the County Engineer on individual project basis. Where "Heads" are used to develop the conduit opening, holes greater than two (2") inches in size shall be developed by increasing the head size in one (1") inch increments. All pipes greater than four (4") inches in diameter shall use one of the following methods described in this section.

RULE 4.16 HORIZONTAL DIRECTIONAL DRILLING (HDD)

- 4.16.1 The Horizontal Directional Drilling (HDD) method consists of augering, jacking or drilling a "steerable" rod with a device that also senses the location of the head. The head is then pulled out of the hole with a cone, reamer or wing cutter that provides the desired diameter. Underground utility installations utilizing this operation shall use an approved directionally-drilled method that shall ensure the safety of the right-of-way facilities and provide minimal inconvenience to vehicular traffic.
- 4.16.2 For Directional Drilling, the following requirements must be followed:
- a) Equipment
 1. Shall be of type with radio location boring head.
 2. Location equipment shall be used to track bore head location.
 3. Back reaming by approved methods only.
 4. Compactor back reaming is not allowed.
 5. Proper drilling lubricant shall be provided.
 6. Only steerable type boring is allowed
 7. Hammer moles are not allowed.

b) Materials

1. Approved material for direction drilling include: medium density polyethylene (MDPE) high density polyethylene (HDPE), steel, fusible PVC, restrained joint PVC and ductile iron pipe, and shall conform to the current ASTM Standards. Alternate materials shall be approved by the County Engineer.
2. Plastic pipe for directionally-drilled pipe shall meet the requirements of ASTM D 2513; SDR 11. Plastic pipe may be used for medium pressure gas pipelines (pressure less than 100 PSI), as a carrier pipe or as a casing for other utility facilities. The minimum plastic pipe wall thickness, pipe joining methods, and testing requirements for a gas pipeline installation shall meet the requirements of the Michigan Gas Safety Code.
3. Steel pipe for directionally-drilled pipe shall meet the requirements identified in the MDOT Standard Specifications for Construction, and, when applicable, the Michigan Gas Safety Code.
4. Flowable Fill material shall conform to the specification indicated in Rule 4.13.
5. A drilling fluid of water and bentonite or a polymer shall be used to lubricate and line the drilled hole.

c) Operations

1. Alignment of the utility shall be installed as indicated in the plans or permit. The path of the proposed bore must be marked in advance of the boring to check for conflicts with utility and structures.
2. All shafts or pits shall be located at least ten (10') feet off the edge of pavement or behind the curb on primary roads and five (5') feet off the edge of pavement or behind the curb on residential streets. All access pits, open excavations, equipment and supplies within the right-of-way shall be protected with suitable fencing and plastic drums to prohibit access to the work site. Equipment shall not be used in lieu of fencing to protect access pits.
3. The required piping shall be assembled in a manner that does not obstruct adjacent roadways or public activities.
4. Sufficient space shall be allocated to fabricate and layout the product pipeline into one continuous pipe length, thus enabling the pull back to be conducted during a single operation.
5. When boring near electrical supply cables, proper care shall be taken to protect the operator, locator and others from shock hazards.
6. The drill path alignment shall be as straight as possible to minimize the frictional resistance during pullback and maximize the length of the pipe that can be installed during a single pull.
7. The minimum radius of curvature of the directional drill should be 1,200 times the nominal diameter of the pipe to be installed.
8. Directionally drilled pipe shall serve as a carrier pipe or as a casing for a carrier pipe.

9. The ends of each section of MDPE and HDPE pipe shall be inspected and cleaned as necessary to be free of debris immediately prior to joining the pipes by means of thermal butt-fusion. The polyethylene pipe shall be of the same type, grade and class of the polyethylene compound used in the process.
10. The handling of the joined pipeline shall be in such a manner that the pipe is not damaged by dragging it over sharp or jagged objects. Sections of the pipes with cuts and gouges exceeding ten (10%) percent of the pipe wall thickness or kinked sections shall be removed and the ends rejoined.
11. Pipe rollers, skates or other protective devices shall be used to prevent damage to the pipe, eliminate ground drag, reduce pulling force and reduce the stress on the pipe and joints.
12. Pipe diameters greater than twenty (20") inches, an intermediate pre-reaming is required before pulling the utility into place.
13. Where "heads" are used to develop the conduit opening, holes with diameters larger than two (2") inches shall be developed by increasing the head size in one (1") inch increments.
14. The diameter of the cone, reamer or wing cutter shall not exceed the diameter of the carrier pipe by more than one and one-half (1½) times. An approved flowable fill shall be pumped into the void between the carrier pipe and drill hole displacing the drilling fluid when the cone, reamer or wing cutter exceeds the pipe diameter by two (2") inches.
15. When back reaming pilot holes and dragging product, the use of compaction type cutter heads is prohibited. The Contractor shall use a cutting lead suitable to cutting a hole large enough to accommodate the product and lubricating fluid.
16. Trace wire is required for all non-metallic pipe installation for post construction location purposes.
17. The drilling fluid in the annular region outside of the pipe shall not be removed after installation and remain in place to provide support for the pipe and neighboring soil. Plain water will not be used as a lubricating fluid on bores exceeding two (2") inches in diameter.
18. To monitor possible heaving or settling of pavement, a survey along the centerline of the bore shall be performed one (1) day prior to initiating the operation. All elevations shall be taken at ten (10') foot intervals and recorded to the nearest one hundredth (.01') of a foot. Thirty (30) days after completion of the bore, a second survey shall be performed, comparing all elevations to the check for any heaving or settling of the pavement. A copy of each survey shall be provided to the Permit Office.
19. After boring operations and connections are completed, the Contractor shall backfill all excavations with a suitable material approved by the Permit Office and restore all disturbed areas to the same or better than original conditions.
20. The Contractor shall provide the Permit Office with a log of the bores on all conduits over two (2") inches in diameter showing the final depth and path of the conduit under the roadway.

d) Failure

1. Should anything prevent completion of the directionally-drilled operations, the remainder of the pipe shall be constructed by methods approved by the County Engineer or the partially completed directionally-drilled pipe shall be abandoned in place, and the carrier pipe shall be backfilled completely with flowable fill.
2. In the event of damage to the pavement or roadside due to drilling operations, the Contractor shall repair the pavement or roadside as directed by the County Engineer before further boring operations may continue.
3. If any settlement or other change in grade of the roadway, curbs or ditches occurs, the road and/or drainage facilities shall be repaired or reconstructed as directed by the County Engineer.

RULE 4.17 HORIZONTAL AUGER BORING (HAB)

4.17.1 A Horizontal Auger Boring (HAB) method consists of the jacking of steel pipe to serve as a carrier pipe or as a casing for a carrier pipe. Underground utility installations utilizing this operation shall use an approved Horizontal Auger Boring (HAB) method that will ensure the safety of the right-of-way facilities and provide minimal inconvenience to vehicular traffic.

a) Equipment:

1. Jacking Frame - A jacking frame shall be constructed of guide timbers, backstop and a pushing or jacking head. Guide timbers or rails shall be constructed to the exact line and grade of the pipeline and shall be anchored in such a manner as to be capable of maintaining the alignment and gradient throughout the jacking operations.
2. Backstop - The backstop shall be constructed as to provide a bearing area capable of supporting no less than two hundred (200%) percent of the estimated maximum jacking pressure and shall be perpendicular to the alignment of the pipe. It shall be anchored and braced in a manner to insure that the position will be maintained throughout the jacking operation.
3. Jacking Head - The pushing or jacking head shall be constructed to fit the pipe to be jacked and to assure that the pressure developed by the jacks will be evenly distributed on the pipe. An opening large enough to permit the entrance of workers and materials shall be left and maintained in the jacking head.

4.17.2 Materials:

- a) Steel and concrete pipe for HAB operations shall meet the WCDPS requirements.
- b) Steel pipe shall have a roundness tolerance so that the difference between the major and minor outside diameters shall not exceed one (1%) percent of the specified nominal outside diameter or 0.25 inch, whichever is less. Likewise, concrete pipe, centrifugally cast, fiberglass reinforced, polymer mortar (CCFRPM) and plain concrete pipe (PCP) shall have a similar roundness tolerance.

- c) Pipe shall have square and machine beveled ends. The pipe end maximum out-of-square tolerance shall be 0.04 inch (measured across the diameter).
- d) Pipe shall be straight.
- e) Pipe shall be without any significant dimensional or surface deformities. All pipes shall be free of visible cracks, holes, foreign material, foreign inclusions, blisters, or other deleterious or injurious faults or defects. Any section of the pipe with a gash, blister, abrasion, nick, scar or other deleterious fault greater in depth than ten (10%) percent of the wall thickness shall not be used.
- f) Refer to Table 4-3 below for WCDPS recommended case sizing for utilities under roads or railroads. These specifications shall be utilized for all Wayne County owned facilities placed within the right-of-way.

Table 4-3

CASING SIZE FOR UTILITIES					
NOMINAL SIZE OF UTILITY	SMOOTH WALL STEEL PIPE ¹	CORRUGATED STEEL PIPE (HELICAL WELDED 2-2/3" X 1/2" CORRUGATIONS)		DUCTILE IRON	CONCRETE (PLAIN OR REINFORCED)
	MINIMUM CASING SIZE	MINIMUM CASING SIZE	MINIMUM GAGE	MINIMUM CASING SIZE	MINIMUM CASING SIZE
6"	18"	18"	#16	18"	18"
8"	20"	20"	#16	20"	20"
10"	24"	24"	#16	24"	24"
12"	30"	30"	#16	24"	30"
14"	30"	30"	#16	30"	30"
15"	30"	30"	#16	30"	30"
16"	30"	30"	#16	30"	30"
18"	36"	36"	#14	30"	36"
20"	36"	36"	#14	36"	36"
21"	42"	42"	#14	42"	42"
24"	42"	42"	#14	42"	42"
27"	42"	42"	#14	42"	42"
30"	-	-	-	48"	48"
36"	-	-	-	60"	60"
43"	-	-	-	60"	60"

¹ See Chart Below to Determine the Minimum Required Wall Thickness for Smooth Wall Steel Casing Pipes

For facilities not owned by Wayne County, the casing size shall be determined by the owner of the facility. All smooth wall installations shall conform to Table 4-4 below to determine the minimum required wall thickness.

Table 4-4

REQUIRED MINIMUM WALL THICKNESS FOR SMOOTH WALL STEEL CASING PIPES			
CASING SIZE	MINIMUM WALL THICKNESS	CORROSIVE ALLOWANCE	*MINIMUM WALL THICKNESS (W/CORROSION PROTECTION)
12"	3/8"	1/16"	5/16"
18"	3/8"	1/16"	5/16"
20"	13/32"	1/16"	11/32"
22"	7/16"	1/16"	3/8"
24"	15/32"	1/16"	13/32"
26"	1/2"	1/16"	7/16"
28"	17/32"	1/16"	15/32"
30"	17/32"	1/16"	15/32"
32"	9/16"	1/16"	1/2"
34"	19/32"	1/16"	17/32"
36"	19/32"	1/16"	17/32"
38"	5/8"	1/16"	9/16"
40"	5/8"	1/16"	9/16"
42"	5/8"	1/16"	9/16"

g) Operations:

- All pipes greater than four (4") inches in diameter shall be bored using an auger.
- Where the roadway is superelevated, the bore shall be started from the lower side of the road surface.
- Alignment of the utility shall be installed as indicated in the approved plans and permit. The path of the proposed bore must be marked in advance of the boring to check for conflicts with utilities and structures.
- All shafts or pits shall be located at least ten (10') feet off the edge of pavement or behind the curb on primary roads and five (5') feet off the edge of pavement or behind the curb on residential streets. All access pits, open excavations, equipment and supplies within the right-of-way shall be protected with suitable fencing and plastic drums to prohibit access to the work site. Equipment shall not be used in lieu of fencing to protect access pits.
- If the shaft or pit must be closer to the road than the above dimensions due to the location of the utility to be tapped, sheeting or shoring must be used on all sides of the excavation which are closer to the road than the above requirements. Sheeting and bracing shall be required pursuant to the current MDOT Standard Specifications for Construction when boring or receiving pits are located within the one-on-one slope from the edge of any

paved surface or back of curb. Bracing shall be immediately strengthened at the first notice of any earth movement.

6. The Contractor shall dewater the pit excavation in a manner appropriate for the conditions.
7. Bored installations shall have a bored hole diameter essentially the same as the outside diameter of the casing pipe to be installed.
8. Boring and jacking of the casing pipe shall be accomplished by the dry auger boring method without jetting, sluicing or wet boring.
9. Bentonite can be used as a casing lubricant in the event of excessive frictional forces jeopardizing the successful completion of the casing installation.
10. The cutting head shall not be advanced ahead of the casing pipe, except for the distance necessary to allow the cutting teeth to cut clearance for the casing. If necessary, mechanical arrangements or devices may be required to prevent the cutting head and auger from leading the pipe so that there won't be unsupported excavation ahead of the casing.
11. Efforts shall be made to avoid loss of earth near the cutting head. Excavated material shall be removed from the conduit as excavation progresses with no accumulation of such material within the conduit.
12. If unstable soil is encountered during the boring procedure, the cutting head shall be retracted into the casing to maintain a balance between the pushing pressure and the ratio of pipe advancement.
13. The leading section of the pipe shall be equipped with a jacking head securely anchored to prevent any wobble or variation in alignment during the operation.
14. As the casing is installed, the Contractor shall check the horizontal and vertical alignment frequently; making corrections prior to continuing operations. For casing pipe installations over one hundred (100') feet in length, the cutting head and augers shall be removed and the alignment and grade checked at intervals not to exceed sixty (60') feet.
15. After the excavation is completed, the placing and jacking of the pipe shall follow immediately to avoid unnecessarily disturbing the stability of the embankment and roadbed.
16. The void between the casing and the carrier pipe shall be filled with flowable fill. Upon completion of the filling operation, the ends of the casing shall be sealed with a one (1') foot thick bulkhead of commercial grade concrete or approved alternate. Refer to Rule 4.12 for WCDPS flowable fill specifications.
17. The driving end of the pipe shall be properly protected against damage and the intermediate joints shall be similarly protected by the use of sufficient bearing shims to properly distribute the jacking stresses. Any section of pipe showing signs of damage shall be removed, repaired or replaced.
18. Once the jacking operation has commenced, it shall be continued uninterrupted, 24 hours a day / 7 days a week, until the pipe has been jacked between the specified limits.

19. Should loss of soil around the outside of the casing pipe occur during the boring operations, the voids shall be promptly filled with flowable fill immediately upon completing the bore.
 20. To monitor possible heaving or settling of pavement, a survey along the centerline of the bore shall be performed one day prior to initiating the operation. All elevations shall be taken at ten (10') foot intervals and recorded to the nearest one hundredth (.01') of a foot. Thirty (30) days after completion of the bore, a second survey shall be performed comparing all elevations and to check for any heaving or settling of the pavement. A copy of each survey shall be provided to the Permit Office.
 21. After boring operations and connections are completed, the Contractor shall restore the bore pit areas to the same or better than original conditions.
 22. The Contractor shall provide the County Engineer with a log of the bores on all conduits over two (2") inches in diameter showing the final depth and path of the conduit under the roadway.
- h) Failure
1. Should anything prevent completion of the boring operations, the remainder of the pipe shall be constructed by methods approved by the Permit Office or the partially completed jacked-in-place pipe shall be left in place and the casing pipe shall be backfilled completely with flowable fill. If removal of the cutting head and augers will cause voids to form at the casing head, the cutting head and augers must be abandoned.
 2. In the event of damage to the pavement or roadside due to HAB operations, the Contractor shall repair the pavement or roadside, as directed by the County Engineer, before further boring operations may continue.
 3. If any settlement or other change in grade of the roadway, curbs or ditches, occurs, the road and/or drainage facilities shall be repaired or reconstructed to proper grade as directed by the County Engineer.

RULE 4.18 PIPE JACKING (PJ)

4.18.1 Pipe Jacking (PJ) is a method of directly installing pipes behind a Shield Machine by hydraulic jacking from a drive shaft in such a way that the pipes form a continuous string in the ground. Usually personnel are required inside the pipe to perform the excavation or spoil removal process.

a) Equipment:

1. Jacking Frame - A jacking frame shall be constructed of guide timbers, backstop and pushing or jacking head. Guide timbers or rails shall be constructed to the exact line and grade of the pipeline and shall be anchored in such a manner as to be capable of maintaining the alignment and gradient throughout the jacking operations.
2. Backstop - The backstop shall be constructed as to provide a bearing area capable of supporting no less than two hundred (200%) percent of the estimated maximum jacking pressure and shall be perpendicular to the alignment of the pipe. It shall be anchored and braced in a manner to assure that this position will be maintained throughout the jacking operation.
3. Jacking Head - The pushing or jacking head shall be constructed to fit the pipe to be jacked and to assure that the pressure developed by the jack will be evenly distributed on the pipe. An opening large enough to permit the entrance of workers and materials shall be left and maintained in the jacking head.

b) Materials:

Steel pipe and concrete pipe for jacking-in-place shall meet WCDPS requirements listed below:

1. The type of pipe used for the pipe jacking method shall be capable of transmitting the required jacking forces from the thrust plate in the jacking shaft to the jacking field or Tunnel Boring Machine.
2. The allowable jacking strength capacity of pipe shall be capable of withstanding the maximum jacking forces imposed by the operation.
3. Steel pipe shall have a roundness tolerance so that the difference between the major and minor outside diameters shall not exceed one (1%) percent of the specified nominal outside diameter or 0.25 inch, whichever is less. Likewise, concrete pipe, CCFRPM and PCP shall have a similar roundness tolerance.
4. Pipe shall have square and machine beveled ends. The pipe end maximum out-of-square tolerance shall be 0.04 inch, measured across the diameter.
5. Pipe shall be straight. Pipe shall be without any significant dimensional or surface deformities.
6. All pipes shall be free of visible cracks, holes, foreign material, foreign inclusions, blisters, or other deleterious or injurious faults or defects. Any section of the pipe with a gash, blister, abrasion, nick, scar or other deleterious fault greater in depth than ten (10%) percent of the wall thickness shall not be used.

c) Pipe Joint Cushion

1. A cushioning material shall be used between pipe segments to assist in distributing jacking loads evenly across the section of the pipe and to prevent chipping or breaking of the pipe ends due to concentrated pressure caused by any slight irregularity of the pipe ends.

d) Operations

1. All pipes greater than four (4") inches in diameter shall be bored using an auger.
2. Where the roadway is superelevated, the bore shall be started from the lower side of the road surface.
3. Alignment of the utility shall be installed as indicated in the approved plans and permit. The path of the proposed bore must be marked in advance of the boring to check for conflicts with utilities and structures.
4. All shafts or pits shall be located at least ten (10') feet off the edge of pavement or behind the curb on primary roads and five (5') feet off the edge of pavement or behind the curb on residential streets. All access pits, open excavations, equipment and supplies within the right-of-way shall be protected with suitable fencing and plastic drums to prohibit access to the work site. Equipment shall not be used in lieu of fencing to protect access pits.
5. If the shaft or pit must be closer to the road than the above dimensions due to the location of the utility to be tapped, sheeting or shoring must be used on all sides of the excavation which are closer to the road than the above requirements. Sheeting and bracing shall be required pursuant to current MDOT Standard Specifications For Construction when boring or receiving pits are located within the one-on-one slope from the edge of any paved surface or back of curb. Bracing shall be immediately strengthened at the first notice of any earth movement.
6. The Contractor shall dewater the pit excavation in a manner appropriate for the conditions.
7. During construction, continuous monitoring and plotting of boring progress shall be undertaken to ensure compliance with the proposed installation alignment and allow for appropriate course corrections to be made.
8. After the excavation is completed, the placing and jacking of the pipe shall follow immediately to avoid unnecessarily disturbing the stability of the embankment and roadbed.
9. The leading section of the pipe shall be equipped with a jacking head securely anchored to prevent any wobble or variation in alignment during the operation.
10. The driving end of the pipe shall be properly protected against damage and the intermediate joints shall be similarly protected by the use of sufficient bearing shims to properly distribute the jacking stresses. Any section of pipe showing signs of damage shall be removed and replaced or repaired.

11. Efforts shall be made to avoid loss of earth near the cutting head. Excavated material shall be removed from the conduit as excavation progresses thus leaving conduit without accumulation of such material.
 12. Once the jacking operation has commenced, it shall be continued uninterrupted, 24 hours a day / 7 days a week, until the pipe has been jacked between the specified limits.
 13. Should appreciable loss of soil occur during the operation, the voids shall be packed promptly to the greatest extent practicable with flowable fill. Refer to Rule 4.13 for WCDPS flowable fill specifications.
 14. The allowable overcut is one (1") inch greater than the outside diameter of the pipe.
 15. Water tight pipe joints are required to ensure the integrity of the roadbed. Pipe shall be constructed to prevent water leakage or earth infiltration throughout its entire length.
 16. Lubrication fluids are required for this method of pipe installation to reduce jacking forces.
 17. To monitor possible heaving or settling of pavement, a survey along the centerline of the bore shall be performed one day prior to initiating the operation. All elevations shall be taken at ten (10') feet intervals and recorded to the nearest one hundredth (.01') of a foot. Thirty (30) days after completion of the bore, a second survey shall be performed comparing all elevations and to check for any heaving or settling of the pavement. A copy of each survey shall be provided to the Permit Office. After boring operations and connections are completed, the Contractor shall restore the bore pit areas to the same or better than original conditions.
 18. The Contractor shall provide the County Engineer with a log of the bores on all conduits over two (2") inches in diameter showing the final depth and path of the conduit under the roadway.
- e) Failure
1. Should anything prevent completion of the boring operations, the remainder of the pipe shall be constructed by methods approved by the Permit Office or the partially completed bore shall be backfilled with flowable fill.
 2. If any settlement or other change in grade of the roadway, curbs or ditches occurs, the road and/or drainage facilities shall be repaired or reconstructed as directed by the County Engineer.
 3. In the event of damage to the pavement or roadside due to the boring operations, the Contractor shall repair the pavement or roadside as directed by the County Engineer before further boring operations may continue.

RULE 4.19 MICROTUNNELING (MT)

4.19.1 Microtunneling (MT) is a trenchless construction method using a remote controlled Micro Tunnel Boring Machine (MTBM) which is operated from a control panel that is normally located on the surface. A laser beam guidance system is used allowing the MTBM to simultaneously install pipe as soil is being excavated and removed. Microtunneling is capable of installing gravity sewers or other types of pipeline to the required tolerance for line and grade.

a) Equipment

1. The Microtunneling Boring Machine (MTBM) shall be mechanically articulated to enable steering of the shield and shall be capable of incremental adjustments to maintain face stability for the soil conditions encountered. A remotely controlled steering mechanism shall be provided which allows for the operation of the system without the need for personnel to enter the tunnel.
2. The control equipment shall integrate the method of excavation, removal of soil and simultaneous placement of pipe. Line and grade shall be controlled by a guidance system that relates the actual position of the MTBM to a design reference; e.g., by a laser beam transmitted from the drive shaft along the centerline of the pipe to a target mounted in the shield. As each pipe section is jacked forward, the control system shall synchronize spoils removal, excavation and jacking speeds. The MTBM display equipment shall continuously show and automatically record the position of the shield with respect to the project design line and grade.
3. The measuring and balancing of earth and groundwater pressure shall be achieved by use of a slurry system. The MTBM cutter face shall at all times be capable of supporting the full excavated area without the use of ground stabilization and have the capability of measuring the earth pressure at the face and setting a calculated earth balancing pressure.
4. The MTBM shall be advanced by jacks mounted in a jacking frame and located in the drive shaft. The MTBM shall be moved forward by the jacks advancing a successive string of connected pipes toward a receiving shaft.

b) The MTBM shall meet the following minimum performance requirements:

1. Capable of providing positive face support, regardless of the MTBM type
2. Articulated to enable controlled steering in both the vertical and horizontal direction to a tolerance of plus or minus one (1") inch from design alignment
3. All functions are controlled remotely from a surface control unit
4. Capable of controlling rotation, using a bi-directional drive on the cutter head or by using anti-roll fins or grippers
5. Capable of injecting lubricant around the exterior of the pipe being jacked
6. Indication of steering direction

- c) For slurry type MTBM, the following is also required:
1. Measurement of the volume of slurry flow in both the supply and return side of the slurry loop
 2. Indications of slurry bypass valve position
 3. Indication of pressure of the slurry in the slurry chamber
- d) Materials
- All pipe shall conform to the following characteristics:
1. The allowable jacking strength capacity of pipe shall be capable of withstanding the maximum jacking forces imposed by the operation.
 2. Pipe shall be specifically designed and certified for microtunneling by the pipe manufacturer and shall comply with ASTM and ASCE (ASCE Standard Construction Guidelines for Microtunneling) Specifications for use in Microtunneling.
 3. All joints shall consist of an elastomeric sealing element, sleeve and a compression cushion ring as required by applicable ASTM and ASCE Standards.
 4. Steel pipe shall have a minimum wall thickness of 1/4 inch or as specified on the plans.
 5. Pipe shall be round. Steel pipe shall have a roundness tolerance so that the difference between the major and minor outside diameters shall not exceed one (1%) percent of the specified nominal outside diameter or 0.25 inch, whichever is less. Likewise, concrete and other types of pipe shall have similar roundness tolerances.
 6. Pipe shall have square and machine beveled ends. The pipe end maximum out-of-square tolerance shall be 0.04 inch, measured across the diameter.
 7. Pipe shall be straight. The maximum allowable straightness deviation over any ten (10') foot length of steel pipe is 1/8 inch.
 8. Pipe shall be without any significant dimensional or surface deformities. All pipes shall be free of visible cracks, holes, foreign material, foreign inclusions, blisters, or other deleterious or injurious faults or defects. Any section of the pipe with a gash, blister, abrasion, nick, scar or other deleterious fault greater in depth than ten (10%) percent of the wall thickness shall not be used.
- e) Operations
1. All pipes greater than four (4") inches in diameter shall be bored using an auger.
 2. Where the roadway is superelevated, the bore shall be started from the lower side of the road surface.
 3. Alignment of the utility shall be installed as indicated in the plans and permit. The path of the proposed bore must be marked in advance of the boring to check for conflicts with utilities and structures.

4. All shafts shall be located at least ten (10') feet off the edge of pavement or behind the curb on primary roads and five (5') feet off the edge of pavement or behind the curb on residential streets. All access pits, open excavations, equipment and supplies within the right-of-way shall be protected with suitable fencing and plastic drums to prohibit access to the work site. Equipment shall not be used in lieu of fencing to protect access pits.
5. If the shaft is closer to the road than the above dimensions due to the location of the utility to be tapped, sheeting or shoring must be used on all sides of the excavation which are closer to the road than the above requirements. Sheeting and bracing shall be required pursuant to current MDOT Standard Specifications For Construction when boring or receiving pits are located within the one-on-one slope from the edge of any paved surface or back of curb. Bracing shall be immediately strengthened at the first notice of any earth movement.
6. The Contractor shall continuously monitor and compare the actual volume of spoil recovered to the theoretical volume.
7. The Contractor shall dewater the drive and receiving shafts in a manner appropriate for the conditions.
8. Shaft and tunnel excavation shall be performed in a manner that will minimize the movement of the ground in front of and surrounding the excavation and minimize subsidence of the surface, structures and utilities above and in the vicinity of the excavation. The ground shall be supported in a manner to prevent loss of ground and keep shafts stable. Pit excavation shall be supported by positive means and as necessary during all shutdown periods.
9. During construction, continuous monitoring and plotting boring progress shall be undertaken to ensure compliance with the proposed installation alignment and allow for appropriate course corrections to be undertaken.
10. Pipe ends shall be temporarily sealed until the drive and receiving shafts are made permanent or other manholes are installed to prevent water or earth infiltration.
11. Overcut is the annular space between the excavated bore and the outside diameter of the pipe. When using this method, the allowable overcut shall not exceed the outside pipe radius by more than one (1") inch.
12. Water tight pipe joints are required to ensure the integrity of the roadbed. Pipe shall be constructed to prevent water leakage or earth infiltration throughout its entire length.
13. Lubrication shall be used to reduce necessary jacking forces in cohesive soil. The most common lubrication is bentonite.
14. The pumping rate, pressures, viscosity and density of the slurry shall be monitored to ensure adequate removal of spoil. The excess slurry at entry and exit points in pits shall be contained until they are recycled or removed from the site. All slurry fluids shall be disposed of or recycled in a manner acceptable to the appropriate local, State or federal regulatory agencies.

15. At completion of the MT operation, the installed pipe shall be inspected by means of a Closed Circuit Television (CCTV) camera and/or a pressure test. Damaged pipe shall be jacked through to the receiving shaft and be removed. Other methods of repairing the damaged conduit may be used as recommended by the manufacturer and approved by the County Engineer.
 16. To monitor possible heaving or settling of pavement, a survey along the centerline of the bore shall be performed one (1) day prior to initiating the operation. All elevations shall be taken at ten (10') foot intervals and recorded to the nearest one hundredth (.01') of a foot. Thirty (30) days after completion of the bore, a second survey shall be performed comparing all elevations and to check for any heaving or settling of the pavement. A copy of each survey shall be provided to the Permit Office.
 17. After boring operations and connections are completed, the Contractor shall restore the bore pit areas to the same or better than original conditions.
 18. The Contractor shall provide the Wayne County Engineer with a log of the bores on all conduits over two (2") inches in diameter showing the final depth and path of the conduit under the roadway.
- f) Failure
1. Should anything prevent completion of the boring operations, the remainder of the pipe shall be constructed by methods approved by Wayne County or the partially completed bore shall be backfilled completely with flowable fill.
 2. If any settlement or other change in grade of the roadway, curbs, or ditches occurs, the road and/or drainage facilities shall be repaired or reconstructed to proper grade as directed by the County Engineer.
 3. In the event of damage to the pavement or roadside due to the boring operations, the Contractor shall repair the pavement or roadside as directed by the County Engineer before further boring operations may continue.

RULE 4.20 OPEN CUT UNDERGROUND ROAD CROSSINGS

- 4.20.1 Open cut crossings of Wayne County roads are only considered on an individual basis and are allowed only due to large pipe size, conflicts with existing utilities, subsoil unsuitable for trenchless installation methods, lack of depth, connections to be made within the roadway, etc. Unless otherwise indicated on the approved permit plans, open cut construction shall be accomplished as follows:
- a) If a crossing cannot be installed by an approved trenchless installation method due to extenuating circumstances, an open-cut crossing may be approved by the Wayne County Permit Office. The Permit Holder shall comply with all provisions for handling traffic as specified in Section 7: *Maintaining Traffic and Traffic Control Devices*. All expenses, including, but not limited to, signing, pavement marking and traffic control shall be borne by the Permit Holder.
 - b) Open-cut crossings shall be accomplished on weekends between the hours of 9:00 A.M. – 3:00 P.M., unless otherwise directed or authorized by Wayne County. Lane closures may not commence before 9:00 A.M. and must be completed and normal traffic flow restored before 3:00 P.M., unless otherwise directed or authorized by Wayne County. Lane closures will not be authorized on major holidays or the Friday before major holidays such as Memorial Day, Fourth of July and Labor Day. All equipment and material necessary for restoration, including, but not limited to, compaction equipment and granular backfill material, shall be on site prior to beginning excavation or pavement removal. Material which cannot be stored, such as hot mix asphalt, shall be immediately available. Open-cuts will not be allowed to begin if inclement weather is threatening which may impede the Contractor's ability to restore the traveled way in a timely manner.
 - c) No road shall be closed without prior approval of Wayne County. Approval of road closures will require that detours be installed in accordance with Section 7: *Maintaining Traffic and Traffic Control Devices*, and the rules established in Rule 7.5: *Road Closures and Detours*. Requests for road closures must be made in writing and include the location, length of time the road will be closed, approximate starting and completion dates, reasons for the request and a signing plan showing all detour signing.
 - d) If a road closure is not approved, through-traffic must be maintained at all times. Sheeting and bracing of the excavation may be required to protect the road if conditions warrant as described in Rule 4.7. If necessary, steel plating shall be utilized in compliance with Section 4.22 below. The road surface may not be used for the storage of materials or any other construction purpose without prior approval of Wayne County. Depending on traffic volumes and other conditions, Wayne County may require the Permit Holder to provide temporary lanes (either paved or unpaved), may allow one lane traffic properly controlled or may require some combination of the two. Traffic control shall be in accordance with Section 7: *Maintaining Traffic*.
 - e) Temporary pavement shall be in accordance with Section 6: *Restoration*, of this manual.

RULE 4.21 PAVEMENT REMOVAL

- 4.21.1 This work shall consist of removing existing concrete pavement or base course with HMA surface, regardless of overall thickness. The removal work shall be in accordance with the applicable provision of Section 204 of the MDOT Standard Specifications for Construction, Wayne County Special Provision WC204(A) and specifications detailed below.
- 4.21.2 The pavement, whether finished concrete or concrete base course concrete, shall be removed to an existing joint or cut to a straight line with a vertical face parallel to existing transverse and longitudinal joints by sawing through the full depth of the pavement, unless otherwise approved by the County Engineer. In removing a concrete base course, the HMA surface shall be sawed the full depth to a distance of one (1') foot beyond the concrete base course removal limits. The pavement shall be removed in such a manner as to not disturb or damage those sections of pavement that are to remain in place. All damaged or undermined pavement resulting from the Contractor's operation shall be removed and replaced at the Permit Holder's expense.
- 4.21.3 When construction requiring pavement removal involves an existing road pavement less than twenty years old, remove and replace the pavement as per standard plan, Pavement Removal and Repair (Patching) (PR-1).
- 4.21.4 When construction requiring pavement removal involves an existing road pavement that is twenty or more years old, remove and replace the pavement as per standard plan, Pavement Removal and Repair (Patching) (PR-2).
- 4.21.5 When construction requiring pavement removal involves an existing road pavement on a local road that is less than ten years old, remove and replace the pavement as per standard plan, Pavement Removal and Repair (Patching) (PR-3).
- 4.21.6 When construction requiring pavement removal involves an existing road pavement on a local road that is greater than ten years old, remove and replace the pavement as per standard plan, Pavement Removal and Repair (Patching) (PR-4).
- 4.21.7 When work the above standard plans for pavement removal and repair, use notes for Pavement Removal and Repair (Patching) (PR-5).
- 4.21.8 If the pavement is asphalt, the pavement cut shall be made by sawing prior to excavation, unless otherwise indicated on the approved plans. The pavement removal shall be a minimum of one (1') foot wider than the trench in all directions. Cuts in driveways or road approaches may require a resurfacing of the entire driveway or road approach as determined by the County Engineer.
- 4.21.9 The use of crane-and-ball type breaking equipment will not be permitted. Pavement removal shall be accomplished with slab lifting methods, a rubber-tired hydraulic ram or other equipment meeting the approval of the Permit Office.
- 4.21.10 If the Contractor operations remove or damage the road surface/facilities beyond the work area or if it is determined that any open cut will result in substantial surface deterioration or loss of pavement integrity, the entire influenced section of roadway and/or facilities shall be resurfaced, rehabilitated or reconstructed as required by the County Engineer.

RULE 4.22 STEEL PLATING

- 4.22.1 The use of steel plates will only be allowed when no other option is available and must be approved in advance by Wayne County.
- 4.22.2 Steel plates shall not be used in winter.
- 4.22.3 Whenever possible, all excavations shall be backfilled and repaired before the road is opened for traffic. When small openings such as “window cuts” are made in a section of pavement that must remain open to traffic during the time there is no work activity, steel plates of sufficient size and thickness shall be furnished and installed by the Permit Holder to cover small pavement cuts and to provide crossings over trenches up to four (4') feet in width. The steel plates shall overlap existing pavement by at least one (1') foot on all sides of the excavation for trenches six (6') feet deep or less and two (2') feet on all sides of the excavation for trenches deeper than six (6') feet. The following provides the minimum size and thickness required for a range of excavation sizes:

Table 4-5

PLATING DIMENSIONS		
HOLE AREA	MINIMUM PLATE SIZE	MINIMUM PLATE THICKNESS
UP TO 3' X 4'	5' X 6'	¾"
UP TO 4' X 6'	6' X 8'	¾"
UP TO 4' X 10'	6' X 12'	1"

- 4.22.4 The plates shall be bedded in HMA patching material of an approved type to avoid rocking and noise and anchored into the existing pavement. Spikes, when used, shall be of sufficient length and spaced as to anchor the plates against movement under anticipated traffic conditions. HMA patching material shall be used at the ends of the plates in traffic lanes to eliminate bumps. All trenches shall be sheeted or braced and supported with trench jacks to maintain the trench sides. For trenches wider than four (4') feet, the Permit Holder shall submit a method of bridging to the Permit Office for approval. Bridging shall be of a design that will satisfactorily carry all road traffic across the opening smoothly, safely and without undue noise.
- 4.22.5 Side by side plating may be used to cover cuts longer than ten (10') feet provided the abutting edges are supported by a steel beam of adequate strength, firmly supported on sound earth for at least one (1') foot on each end. Steel plates shall be bedded in cold patch and held in position by bolts or pins at least three (3") inches long. Cold patch ramps shall be used along all edges of the plates. Upon removal of the steel plates, all cold patch shall be removed from the pavement and disposed of outside the road right-of-way. The necessary steel plates must be on the jobsite before the pavement is removed.

RULE 4.23 GRAVEL ROADS

- 4.23.1 In cases where the Permit Holder's activities result in increased traffic on existing gravel roads or gravel shoulders, the Permit Holder shall be required to provide for dust control and grading which may require additional 22A gravel. After completion of the Permit Holder's activities, the Permit Holder shall restore gravel roads and shoulders in compliance with Wayne County Standard Typical Cross Section Existing Gravel Road Restoration with Open Ditches (RS-22), or as directed by Wayne County.
- 4.23.2 For gravel road open-cut construction, all trenches shall be backfilled with porous materials as specified in Rule 4.13. The road surface shall be restored in accordance with the approved plans and as directed by the County Engineer.

RULE 4.24 DITCH CLEANOUT

- 4.24.1 Ditch cleanout requires the removal of silt, roots, stumps, trees and other objectionable materials in the slopes and bottom of the ditch, or as otherwise directed by the County Engineer. Refer to the standard plan, Ditch Cleanout (M-2) for information on WCDPS ditch cleanout specifications.
- 4.24.2 The Permit Holder shall be responsible for maintaining positive drainage and restoration per Section 6 of this manual and providing soil erosion control as detailed in Wayne County's Department of Environment - Land Resource Management Division webpage.

RULE 4.25 REMOVAL, RELOCATION AND ADJUSTMENTS

- 4.25.1 If the proposed work is in conflict with an existing facility(s), the Permit Holder shall
- a) Relocate, remove or adjust that facility(s) as recommended by the facility owner and approved by the County Engineer, at no expense to Wayne County, or
 - b) Submit an alternate design for review and approval by the Permit Office.
- 4.25.2 Any facility located in the right-of-way, except where the facility is dedicated solely to providing traffic signals, may be subject to possible removal, relocation or adjustment as required by future Wayne County projects at no expense to Wayne County.

RULE 4.26 ABANDONMENT

- 4.26.1 Abandonment of existing underground facilities within the right-of-way is prohibited. However, at the sole discretion of Wayne County and under extreme circumstances, abandonment of existing underground facilities may be approved on a case-by-case basis. A request to abandon existing underground facilities must be submitted in writing and requires the following conditions:
- a) In any such case the utility owner shall maintain ownership and responsibility for the abandoned facility.

- b) At the discretion of Wayne County, the owner of any abandoned facility may be required to remove its facility and restore all areas to conditions satisfactory to Wayne County.
- c) All abandoned pipes, structures or conduits shall be filled with flowable fill material.
- d) The utility owner shall maintain detailed records of the abandoned facility including, but not limited to, location, depth, size and type of material. A copy of these records shall be submitted to the Permit Office attached to the request.

4.26.2 A utility owner proposing to cease operation of an asbestos pipe system shall remove the abandoned system from the right-of-way and shall properly dispose of the materials pursuant to applicable laws and regulations.

RULE 4.27 OVERHEAD UTILITIES

- 4.27.1 Single pole construction and joint use of the pole by utility owners is desirable and should be utilized whenever practical.
- 4.27.2 In the event of pole relocation, replacement or removal, all utilities using the original pole shall transfer to the new pole within three (3) months of the pole installation. The owner of the pole shall remain responsible for coordinating or completing the transfers within the three (3) month time period.
- 4.27.3 The minimum vertical clearance of wires, conductors and cables over Wayne County roads shall conform to the National Electrical Safety Code. The under-clearance between any wire, conductor or cable, under any temperature or loading condition shall not be less than eighteen (18') feet. Vertical clearance shall be measured using the elevation of the lowest portion of the wire, conductor or cable and the highest elevation of the road; i.e., centerline (crown), high point of superelevated curve, etc.

SECTION 5: RIGHT-OF-WAY IMPROVEMENTS

RULE 5.1 GENERAL CONDITIONS

- 5.1.1 Typically, before creating plans for the road improvement portion of the project, the Applicant shall first establish a geometric design that is approved by the Permit Office. The geometric design process (refer to Section 3: *Driveway Design and Construction*) will determine the critical design layout and location for proposed access point(s) and may identify other pavement components including auxiliary lanes and tapers required for the proposed work. This section provides WCDPS standards and specifications for the design and construction of permit projects involving driveway approaches, pavement widening and other improvements within the right-of-way.
- 5.1.2 All plans shall conform to Rule 2.5: *Plan Requirements*.
- 5.1.3 When working with this section, the Applicant/Permit Holder shall comply with all relevant construction rules and guidelines provided in Section 3: *Driveway Design and Construction*, Section 4: *Underground Construction*, Section 7: *Maintaining Traffic and Traffic Control Devices*, Section 6: *Restoration* and in Rule 2.14: *Inspection and Testing of Materials*.
- 5.1.4 Placement of concrete and HMA facilities covered in this section, including, but not limited to, driveway approaches, lane and road widenings and sidewalks shall be constructed conforming to the following construction rules and specifications in Rule 5.13: *Concrete Pavement Standards* and Rule 5.14: *HMA Pavement Standards*.

RULE 5.2 DESIGN ELEMENTS

- 5.2.1 The elements listed below provide a guide for the preparation of design plans for road widening and driveway construction. When working with major road projects or for more in depth information on Wayne County road design requirements, the Applicant shall reference the WCDPS Road Design Guidelines when preparing road design plans.
- 5.2.2 Road Right-of-way
- a) It is the applicant's responsibility to research the existing road right-of-way within the project limits. The WCDPS has established a Master Plan for Road Rights-of-Way within its jurisdiction. If the existing road right-of-way is other than what is required by the Master Plan, the Permit Office shall request a dedication of the additional right-of-way. In the event that the proposed road improvements cannot be contained within the existing right-of-way, it may be necessary to require the dedication of the additional right-of-way.
 - b) The permit process includes a program that may require property owner(s) to dedicate the road right-of-way for the road improvements' purposes, in exchange for a waiver of the permit fee and plan review fee for the project, the WCDPS will provide all deed preparation and recording at no expense to the property owner(s). Refer to Rule 2.23: *Right-of-Way Dedication*.

5.2.3 Survey Requirements

- a) A complete topographic and level survey is required to provide the Applicant with the information necessary to develop workable construction plans. In a road widening project, the Applicant shall establish a survey control line using:
 1. Stationing - Standard Wayne County convention is to station from south to north and west to east.
 2. Angles - Show the deflection angles from the back tangent line produced forward and denote right or left deflection.
 3. Witnesses – Provide witnesses for survey control points. Select permanent topographical features that are well outside the proposed construction area for witness tie references.
 4. Benchmarks - Benchmarks for construction should be as permanent as possible. Avoid placing them on objects that may be destroyed or relocated because of future construction. Whenever possible, benchmarks shall be established using USCGS datum.

5.2.4 Removals

- a) The Applicant/Permit Holder shall be responsible to resolve and remove existing encroachments in the right-of-way as directed by the County Engineer.
- b) Plans shall detail the limits of clearing within the right-of-way. All trees, stumps and brush, including the roots thereof, shall be removed from within the limits of the proposed construction or as directed by the County Engineer.
- c) On curbed roads, when an existing drive approach is required to be removed, the curb shall be restored to full height as per the standard plan, Curb Detail A, B C (D-7)

5.2.5 Utility Identification and Resolution

- a) The area that provides the potential for difficulties in the design of a road project is that of utilities. It is the Applicant's responsibility to determine the exact location and depth of existing utilities and to provide a resolution for each potential utility conflict on the plans. The Permit Holder is responsible for all costs associated with the resolution of any utility conflicts.
- b) Utility resolutions typically involve either relocating the existing utility in conflict or may require a re-design of the proposed work site.
- c) When determining where to place proposed utilities within the road right-of-way, it is desired that the utility be placed in accordance with the Master Plan Utility Locations (RS-21).
- d) At the sole discretion of the Permit Office, the Applicant may be required to relocate any existing utility within the proposed work site.

5.2.6 Typical Cross Sections

- a) Table 5-1 lists typical cross sections belonging to the Wayne County Standard Plans for Permit Construction. The Applicant shall utilize these typicals when preparing a project plan.

Table 5-1

STANDARD PLANS CROSS SECTIONS		
STANDARD NUMBER	DESCRIPTION	# SHEETS
P-1	PRIMARY ROAD CLASS "A" CROSS SECTION	1
P-2	TYPICAL CONCRETE TAPER	1
P-3	CLASS "B" PRIMARY ROAD FOR 66' RIGHT-OF-WAY	1
P-4	CLASS "B" PRIMARY ROAD FOR 120' RIGHT-OF-WAY	1
RS-13	TYPICAL 27' AND 31' CONCRETE PAVEMENT CROSSSECTION	2
RS-17	TYPICAL 39' CONCRETE PAVEMENT CROSS SECTION	1
L-1	HOT MIX ASPHALT (HMA) LOCAL ROAD W/CURB& GUTTER ON NEW AGGREGATE BASE, OPEN SHOULDER, SPECIAL ASSESSMENT DISTRICT	1
L-2	HOT MIX ASPHALT (HMA) LOCAL ROAD W/CURB & GUTTER ON NEW AGGREGATE BASE, OPEN SHOULDER, SPECIAL ASSESSMENT DISTRICT	1
RS-19	HOT MIX ASPHALT (HMA) PAVEMENT SECTIONS	4
RS-22	TYPICAL CROSS SECTION GRAVEL ROAD WITH OPEN DITCHES	1
IS-1	TYPICAL INDUSTRIAL STREET CROSS SECTION	1

- b) The Applicant shall provide typical detailed cross sections for the proposed work. Different cross sections shall be provided to depict the changes in geometric design and/or materials. Cross sections should be drawn to a proper proportional scale and in such a manner that they are not difficult to read. Current WCDPS standard scales are one (1") inch = five (5') feet horizontal and one (1") inch = one (1') foot vertical.
- c) Detailed cross sections shall include, but are not limited to, right-of-way lines, sidewalks, storm sewer/ditch lines, pavement, subbase, earth excavation limits, embankment, underdrain, shoulder, slopes, dimensions and material type and thickness. They shall include a reference grid with elevations and distances indicated and all proposed control elevations noted on each section.

5.2.7 Plan and Profile

- a) The Applicant shall provide all the necessary profiles to properly define the proposed work. For an example, refer to standard plan, Typical Plan and Profile (RS-16). Depending on the size and scale of the proposed work, the applicant shall provide existing and proposed profiles for centerline and edge of pavement, gutter line, right-of-way line and ditch line/storm system.
- b) All profiles shall be drawn to scale. Typically, profile scales shall be one (1") inch = fifty (50') feet horizontal and one (1") inch equals five (5') feet vertical. Profiles shall be provided at intervals of fifty (50') feet. Within a vertical curve, profiles shall be provided every twenty-five (25') feet.
- c) Detailed grades may be required in instances where the profile may not be sufficient to depict the proposed work.
- d) Any existing or proposed utility crossing shall be included on the profiles.
- e) Utility facilities such as water main and/or sanitary sewers shall have its own profile sheet provided.

RULE 5.3 DESIGN REQUIREMENTS

- 5.3.1 The following is a brief outline of information and design requirements required by the Permit Office that may be included in the project plans. The WCDPS has established these design standards as a basis on which the integrity of road system is built and maintained. However, alternate design solutions may be required when necessitated by sound judgment and accepted engineering principals.
- 5.3.2 Soil Recommendations
- a) The Permit Holder may be required to provide soil boring reports within the proposed construction limits from an independent testing company. The soil boring report shall include:
 1. Boring number
 2. Location (station and distance (left, right) of survey line)
 3. Approximate existing/proposed ground elevation of boring
 4. Soil depths and descriptions.
 - b) After testing is completed, subbase recommendations will be provided by the Testing Office. A preliminary plan and profile is required in order to provide the recommendations.
- 5.3.3 Drainage – The following list of items detail components of the road drainage system. Depending on the design of the road some or all may be required.
- a) Ditches
 1. Ditches will be provided; 38' centerline in 120' R.O.W., 27' centerline in 66' R.O.W. Refer to Master Plan Utility Locations (RS-21).
 2. Minimum depth, foreslope/backslope, will vary based on the design standard of the road. Refer to appropriate cross section standard in the above table.
 3. Minimum width of bottom - 2'
 4. Minimum longitudinal slope - 0.1% (0.2% is typical)
 - b) Underdrains
 1. Underdrains shall be required as detailed in standard plan, Underdrain (RS-14). Underdrain shallower than 4.5' shall utilize corrugated metal pipe (CMP).
 - c) Sewers
 1. Design flow – The Applicant shall apply the “Rational Method” as detailed in “General Design Methods” of the Wayne County Storm Water Management Program Manual.
 2. Minimum velocity - 2.5 fps (3.0 fps preferred)
 3. Maximum velocity - 8.0 fps
 4. Minimum 12” diameter, reinforced concrete-pipe (C76-IV) shall be used. Refer to Table 4.1 in Section 4: *Underground Construction*, for a list of Drainage/Sewer Systems component standards.

d) Drainage Structures

Refer to Table 4-1 for a complete list of Wayne County Standard Plans for drainage and sanitary structures

1. Use a catch basin at the beginning of a sewer run. Catch basins are specified to accept inletting sewers or edge drains. Refer to the standard plan, Catch Basin (S-6).
2. The maximum distance between manholes and catch basins may not exceed 300 feet plus 100 additional feet for every one (1') foot of diameter for closed conduits over 36 inches in diameter.

e) Alignment (Vertical and Horizontal)

1. Generally, proposed pavement centerlines will coincide with the section line and/or the center of the right-of-way.
2. Use vertical curves when the change in grade is 0.8% or greater.

f) Pavements

1. Minimum longitudinal grades
 - i. Curbed – 0.4%. Desired 0.6%.
 - ii. Uncurbed - 0.2%
2. Minimum transverse grades
 - iii. Concrete – 1.5%. Desired 2.0%.
 - iv. Bituminous Aggregate – 2.0%.
 - v. Gravel – 3.3%.
3. Minimum Widths
 - i. Paved lane width - 12 feet.
 - ii. Gravel lane width - 10 feet.
 - iii. Paved shoulder width – 3 feet (Concrete or HMA)
 - iv. Gravel shoulder width - 5 feet (Aggregate)

g) Surface Restoration

1. The ground surface with construction are shall be restored as provide in Rule 6.13: *Landscaping*.

RULE 5.4 EXCAVATION AND GRADING

- 5.4.1 The work within the road right-of-way will generally include such items as storm sewers, sanitary sewers, water and other utilities, edge drain, ditch/drain grading and/or relocations. Refer to Section 4 of this manual for specific standards and specifications regarding these items.

RULE 5.5 DUST CONTROL

- 5.5.1 The Permit Holder shall comply with the dust control, cleanliness and hauling rules listed in Rule 7.11: *Dust Control and Cleanliness of Work*.

RULE 5.6 SUBGRADE

- 5.6.1 The Permit Holder shall perform all subgrade undercutting according to construction methods detailed in Wayne County's Special Provision, "Subgrade Undercutting", WC205(B).
- 5.6.2 Wayne County may perform a subgrade inspection and recommend specific limits, depths and type of backfill to be utilized. The Permit Holder shall be required to perform all corrective measures to the subgrade as recommended by the Permit Office. Corrective measures may include, but are not limited to, the excavation of unsuitable materials, the installation of edge drain and geo-textile fabrics, etc.

RULE 5.7 AGGREGATE BASE COURSE

- 5.7.1 This work shall consist of placing an aggregate base course on an approved subgrade, subbase or existing gravel roadway. All work shall conform to Wayne County's Special Provision, "Aggregate Base Courses", WC302(A).

RULE 5.8 PAVEMENT WIDENINGS

- 5.8.1 A clean edge preparation is required for any pavement widening. Full depth vertical saw cut should be utilized to remove curb, shoulder, taper or lane.
- 5.8.2 On resurfaced roads with concrete base, saw cut to the edge of the concrete base.
- 5.8.3 On integral curbed roads, saw cut at twelve (12") inches from back of curb.
- 5.8.4 On roads with curb and gutter sections, saw cut at the edge of pavement.
- 5.8.5 Saw cuts that create partial lane widths shall only be allowed at the discretion of the Permit Office.
- 5.8.6 Saw cut line shall be either parallel or perpendicular to the centerline.

- 5.8.7 All existing tapers shall be entirely removed when placing the pavement widening.
- 5.8.8 The joints for the pavement widening shall match the joints of the existing pavement. Refer to Joint Standards in Table 5-2 below.

Table 5-2

STANDARD PLANS FOR PAVEMENT JOINTS		
STANDARD NUMBER	DESCRIPTION	# SHEETS
P-5	JOINT LAYOUT	1
RS-2	PAVEMENT JOINTS	7
RS-11	TYPICAL APPROACH AND JOINT LAYOUT AT PRIMARY ROAD	1
RS-14	TYPICAL PLAIN CONCRETE JOINT LAYOUT FULL WIDTH OR TWO POUR CONSTRUCTION	1
RS-18	TYPICAL APPROACH & JOINT LAYOUT OF RESIDENTIAL ¼ LINE OR COLLECTOR ROAD AT PRIMARY	1
IS-3	TYPICAL INDUSTRIAL STREET RETURN AND JOINT LAYOUT AT PRIMARY RD	1
PR-1	PAVEMENT REPAIR DETAILS	6

- 5.8.9 The cross section of the pavement widening shall be as described in Section 5.2.6. However, for safety considerations, it is required to match the existing pavement surface.
- 5.8.10 When placing a pavement widening along an existing Class "A" road, the thickness of new pavement will generally match the thickness of the existing pavement. Typically, older roads have a minimum pavement thickness of nine (9") inches of reinforced concrete. Newly constructed roads have a minimum pavement thickness of ten (10") inches of non-reinforced concrete.
- 5.8.11 When placing a pavement widening along an existing HMA Class "B" road, an eight (8") inch thickness of non-reinforced concrete base pavement shall be utilized.
- 5.8.12 Tapers shall conform to the standard plan, Typical Concrete Taper (P-2)

RULE 5.9 DRIVE APPROACHES

- 5.9.1 All driveways, except residential drives to uncurbed pavements, shall be constructed from the edge of the traveled way to the right-of-way line with a material which is equal to or better than the surface of the traveled way which it joins. The Permit Office shall determine whether or not any specific material is equal to or better than the surface of the traveled way.
- 5.9.2 Commercial Driveways
- a) Commercial driveways serve commercial establishments, industry, churches, condominiums, governmental or educational institutions, hospitals, apartment buildings, manufactured housing communities or any other facility not included within the definitions of residential, field or utility structure driveways.

1. When placing a commercial drive approach, use the standard plan, Commercial Driveway Approach (D-6) with the appropriate curb drop treatment:
 2. Along an existing integral curb pavement, the existing curb shall be sawcut full depth of twelve (12") inches from the back of curb and removed. Place the curb drop as per the standard plan, Curb Detail A,B,C (D-7).
 3. Along an existing curb and gutter section of pavement, sawcut the existing curb and gutter section at the pavement edge. Place the curb per the standard plan, Curb and Gutter Details (RS-3). The curb shall be dropped to one (1") inch above the gutter line.
 4. Along a new pavement widening, the curb drop shall be furnished during construction of the pavement widening. The driveway opening shall be placed as per stand plan, Commercial Driveway Approach (D-6).
- b) When replacing a residential drive in an associated commercial widening, the drive shall be replaced in kind or better. Gravel drives shall be replaced with a minimum two (2") inches of HMA surface on six (6") inches of aggregate base.

5.9.3 Residential

- a) Utilize the following standard plans for residential driveway construction:
1. Residential Drive on Primary Curbed Road (D-1).
 2. Residential Drive on Primary Uncurbed Road (D-2)
 3. Residential Drive on Local Curbed Road (D-3).
 4. Residential Drive on Local Uncurbed Road (D-4)
 5. Residential Drive Approach on Gravel Road (D-5)
- b) Refer to standard plan Curb Details A,B,C (D-7) for curb cut details and General Notes (RS-1), when utilizing the above residential standard plan sets.
- c) The above driveway standards shall be used with the appropriate curb drop treatment below:
1. Along an existing curb pavement, the existing curb shall be sawcut horizontally as per standard plan Curb Details A,B,C (D-7).
 2. Along an open shoulder pavement, remove the gravel shoulder and construct the drive approach to the existing paved shoulder.
 3. Along a new pavement widening, the curb drop shall be furnished during construction of the pavement widening. The driveway opening shall be placed as per Commercial Driveway Approach (D-6).
- d) On uncurbed, open shoulder paved County roads, the Permit Holder may elect to install a paved driveway surface up to an abutting road pavement. Any permit work utilizing this design shall be subject to a special condition in which the Permit Holder acknowledges and agrees that Wayne County shall have no liability or responsibility of any kind for damage done to the paved driveway surface as a result of road maintenance operations including shoulder grading, road ditch clean out or culvert repair. The Permit Holder shall further

acknowledge and agree that the County will have no obligation to restore the paved driveway surface if it is altered or removed for necessary road purposes.

- e) Decorative drive approaches may be placed. Any permit work utilizing a decorative drive approach shall be subject to a special condition in which the Permit Holder acknowledges and agrees that Wayne County shall have no obligation to replace the decorative driveway if a future County road improvement project requires removal of the driveway. If the driveway is ever required to be removed, it shall be replaced with a standard drive approach.

RULE 5.10 SIDEWALKS AND RAMPS

- 5.10.1 Place a thickened concrete sidewalk within the drive approach limits as per standard plan Concrete Sidewalk (RS-5) and Special Provisions, WC803(A) and WC803(B), unless otherwise directed by the Wayne County Engineer.
- 5.10.2 Ramping of the sidewalk to the drive approach is not allowed.
- 5.10.3 Sidewalks shall meet ADA slope requirements.
- 5.10.4 A sidewalk ramp not in compliance with ADA requirements shall be removed and replaced with a ramp conforming to the current ADA specifications. Sidewalk ramp inserts shall be brick red unless otherwise required the local municipality.
- 5.10.5 On primary roads, and within a project's limits, sidewalks that are perpendicular to the main line road and that are not at a signalized intersection shall be removed and the vacated area restored.
- 5.10.6 When placing a sidewalk ramp at a signalized intersection, an opposing sidewalk ramp shall be required across the street
- 5.10.7 Decorative sidewalks shall not be allowed unless required by a governing body. A sidewalk resolution shall be required.

RULE 5.11 SHOULDERS

- 5.11.1 The paved shoulders adjacent to a right-turn lane and tapers shall be of the same material as the road shoulder and conform to paved shoulder specifications detailed in the standard plan Typical Concrete Taper (P-2).
- 5.11.2 Aggregate shoulders adjacent to all uncurbed pavement widenings and tapers shall conform to aggregate shoulder specifications detailed in the standard Typical Concrete Taper (P-2). Aggregate shoulders shall be constructed with six (6") inches of 22X or 23A aggregate and stabilized with liquid calcium chloride applied to the surfacing course. No crushed concrete shall be allowed.
- 5.11.3 In the event that a proposed commercial driveway has no existing HMA shoulder along the road, the Applicant shall pave a three (3) foot HMA shoulder within property frontage.

- 5.11.4 If the distance between adjacent commercial driveways is less than three hundred and forty (340') feet (centerline to centerline), the Applicant shall be pave a three (3') foot HMA shoulder between the driveways. The shoulder paving may extend beyond the property frontage as directed by the County Engineer.

RULE 5.12 DRAINAGE

- 5.12.1 Storm water or any other effluent from private property shall not be permitted to outlet either directly or indirectly by enclosed sewer, ditch or any other means into any County road right-of-way, storm sewer or ditch. Road ditches and road storm sewers are for drainage of the road right-of-way. Natural undisturbed surface storm drainage from undeveloped areas or storm drainage from areas incorporated in the road storm sewer design shall be accepted at an agricultural runoff rate. Storm Water Management Detention facilities may be permitted if limitation of discharge into the County drain or storm sewer meets the required discharge rate. The Permit Holder shall ensure that road drainage is not adversely affected by proposed driveways. The drainage and the stability of the roadway subgrade shall not be altered by driveway construction or roadway development.
- 5.12.2 Road drainage shall not be diverted onto private property without the dedication of a drainage easement by the affected property owner(s).
- 5.12.3 All culverts, catch basins, drainage ditches and other drainage structures required within the road right-of-way, including culverts under driveways, must be reinforced concrete pipe (RCP) or galvanized corrugated metal pipe (CMP) with end sections and shall be installed as per current Drainage Construction (S1 - S19) standards.
- 5.12.4 Culvert pipe shall be of a size adequate to carry the anticipated natural flow of the ditch. The culvert shall be no smaller than the nearest upstream culvert nor less than twelve (12") inches inside diameter. A culvert, catch basin, drainage channel and other drainage structure required within the right-of-way shall be manufactured or constructed and installed as per current Drainage Construction (S1 - S19) Standards.
- 5.12.5 The minimum length of the culvert may be determined as the sum of the distance between driveway edges, measured along the ditch line plus the distances needed to accommodate an embankment slope, not to exceed one (1') foot vertical for six (6') feet horizontal on both sides of the driveway. For driveways that are setback, the culvert shall extend from midpoint of taper to midpoint of taper.
- 5.12.6 Sod, grouted rip-rap or other suitable material shall be placed around all culvert end sections to prevent erosion as directed by the Permit Office. Headwalls are permitted on rare occasions and will be considered on an individual basis.
- 5.12.7 The Wayne County Storm Water Ordinance may require additional drainage improvements. Refer to the Storm Water Management Program web page for additional information.
- 5.12.8 Sump pumps are not permitted to outlet/connect to the road ditch or enclosed storm sewer system.
- 5.12.9 Site swales/ditches are not permitted to outlet or extend into the road right-of-way.

RULE 5.13 CONCRETE PAVEMENT STANDARDS

- 5.13.1 Placement of concrete facilities covered in this section, including, but not limited to, driveway approaches, lane and road widenings and sidewalks shall be constructed conforming to the following concrete construction rules and specifications.
- 5.13.2 Materials
- a) Concrete pavement shall consist of a jointed Portland cement concrete pavement that is either a reinforced or non-reinforced, finished or base course pavement, with or without load transfer devices.
 - b) Load transfer assemblies shall conform to Section 914 of the current MDOT Standard Specifications for Construction and the MDOT Standard Plan R-40 Series, except that the Side Support Wire Detail "J-Leg Option" will not be allowed.
 - c) Details for pavement joints are shown in standard plans General Notes (RS-1) (for Pavement Joints) and Pavement Joints (RS-2).
- 5.13.3 Concrete
- a) Concrete mix designs shall conform to Sections 601 and 701 of the current MDOT Standard Specifications for Construction, Wayne County Special Provision, "Concrete Mixture Requirements", WC601(A) and shall be approved by the Wayne County Testing Office.
 - b) Prior to production, the Wayne County Testing Office shall approve all concrete plants stationary or portable before producing concrete for the road improvements placed within the County right-of-way. For information on approved concrete plants, contact the Wayne County Testing Office at (734) 595-6504, extension 2014.
- 5.13.4 Equipment
- a) Slip-Form paving equipment with automatic horizontal and vertical controls or a Self-Propelled paving equipment on fixed forms are required for paving either finished or base course concrete pavement when paving any full width lane with a minimum length of two hundred (200') feet or when paving multiple lanes with a minimum length of one hundred (100') feet. Paving equipment shall be equipped with augers to distribute concrete and internal vibrators to consolidate the concrete. The internal vibrators shall automatically start with the forward movement of the paving equipment and automatically stop when the forward movement stops and uses sufficient weight to strike off each layer and finish the top layer of concrete.
- 5.13.5 Method
- a) A transverse end of Pour Joint, Symbol (H), shall be constructed when there is an interruption in concrete paving for more than ½ hour. Transverse end of Pour Joint, Symbol (H), shall be constructed in accordance with current MDOT Standard Plan R-39 Series (Reinforced Concrete Pavement) and R-39P Series (Plain Concrete Pavement). This note applies to both concrete base and finished concrete pavement.

- b) When it is anticipated that construction traffic will be using the pavement, endings will be protected by means of a temporary concrete header as shown in standard plan, End Header & Concrete Routing Details (RS-4).
- c) The expansion joint foam rod shall be a solid, round, heat-resistant polyurethane foam capable of withstanding the temperature of the sealant. Density of the foam shall be two (2) to four (4) pounds per cubic foot.
- d) Concrete Temperature Limitations:
 - 1. The temperature of the concrete at the time it is placed on the grade shall not be less than 50° F and no more than 85° F.
 - 2. No concrete shall be placed when the predicted high temperature is to be below 35° F.
 - 3. No concrete shall be placed if any portions of the base, subbase or subgrade are frozen.
 - 4. Cold weather protection measures shall conform to Wayne County's Special Provision, "Cold Weather Protection, Concrete Pavement", WC602(C).

5.13.6 Finishing

- a) Screed and consolidate concrete pavement to the final cross section. Machine methods that avoid material segregation are required when placing one lane width of pavement that is over fifty (50') feet in length. When placing one lane width of pavement with a maximum length of fifty (50') feet, manual methods may be used to screed the consolidated concrete.
- b) Screed or extrude the finished surface to a smooth, sealed, uniformed appearance conforming to the final cross section. Hand floats and straightedges that are ten (10') feet long and are rigid and free from warping, with handles long enough to finish over half the width of the pavement placed. Box or channel hand floats shall have a minimum six (6") inch wide floating face.
- c) Texturing/Curing: Wayne County's Special Provision, "Concrete Pavement, Concrete Shoulders and Concrete Base Course", WC602(A).

5.13.7 Sawing Joints

- a) Saw joints in accordance with Wayne County Standard Plans, Pavement Joints (RS-2).
- b) The concrete saw is allowed on the pavement to saw the joints, but the saw truck or any other equipment will be allowed on the pavement until the pavement has reached at least eighty-five percent (85%) of the design strength.

5.13.8 Cleaning Joints

- a) Clean all joints, including the surface of the pavement next to the joint. Use the appropriate tools and equipment to remove slurry, stones or other foreign objects from the joint.
- b) Joints, longitudinal and transverse, shall be blast cleaned with an oil-free, dry abrasive then, just before sealing, give all joints a final cleaning with a jet of compressed air, minimum pressure of 90 PSI, that is free of oil and water.

5.13.9 Sealing Joints:

- a) Seal longitudinal joints before sealing the transverse contraction and the transverse expansion joints with a hot-poured sealant.
- b) Seal the joints immediately after cleaning. Joint surfaces must be dry when sealed. Apply low modulus, hot-poured asphalt joint sealant with a pressure applicator having a nozzle that extends into the joint. Remove any sealant from the surface of the pavement. Completely cure the sealant before allowing traffic over the sealed joint.
- c) Joints sealed when the temperature is less than 50°F will be temporary.
- d) Within seven (7) days of the final sawing the permanent seal or the temporary seal should be installed. The joint shall have either the permanent or temporary seal before allowing construction equipment or vehicles over the joints.

5.13.10 Testing

- a) The strength of concrete shall be determined by the use of compressive strength cylinders. Curing and transportation of the cylinders shall be performed by Wayne County inspectors and shall conform to current ASTM Standards. The Contractor shall provide the concrete for all required testing.
- b) Wayne County inspectors shall perform additional testing such as, but not limited to slump, air content and temperature measurement.

5.13.11 Acceptance Criteria

- a) Acceptance for Concrete Pavements: Before final acceptance of concrete pavement by the County, the following acceptance criteria will be enforced:
 1. Concrete Mixture, Strength, and Fiber Reinforcement – Wayne County's Special Provision, "Concrete Mixture Requirements", WC601A shall govern.
 2. Concrete Thickness and Depth of Reinforcement - Wayne County's Special Provision, "Determination of Pavement, Shoulder and Base Course Thickness and Depth of Reinforcement", WC602B shall govern.
 3. Cracking - Wayne County's Special Provision, "Pavement Acceptance for Jointed Plain Concrete Pavement", WC602(E) shall govern.
 4. Ride Quality – Wayne County's Special Provision, "Pavement Ride Quality", WC602(F) shall govern.
 5. Cores - Wayne County's test methods shall govern.

5.13.12 Failure

- a) Pavement that fails to meet the minimum acceptance criteria shall be subject to the corrective actions and/or penalties detailed for in the appropriate special provision listed above.
- b) Penalties may include the assessment of damages to be deducted from the bond and/or corrective action including up to removal and replacement of the deficient pavement.

RULE 5.14 HMA PAVEMENT CONSTRUCTION

- 5.14.1 Placement of concrete facilities covered in this section, including, but not limited to, driveway approaches, lane and road widenings and sidewalks shall be constructed conforming to the following concrete construction rules and specifications.
- 5.14.2 Cold Milling
- a) HMA Surfaces: This work shall be in accordance with Section 502 of the current MDOT Standard Specifications for Construction, Wayne County Special Provision WC502(A) and Wayne County Standards.
 - b) Concrete Surfaces: This work shall consist of removing portions of an existing concrete surface in order to improve longitudinal/transverse grades, surface texture, or to prepare a foundation for the placing of surfacing courses, this work shall be in accordance with Wayne County Special Provision WC502(B).
- 5.14.3 Preparing Pavement
- a) This work shall consist of preparing a pavement prior to placing HMA surfacing, all in accordance with Section 502 of the current MDOT Standard Specifications for Construction and Wayne County Special Provision WC502(C).
- 5.14.4 Base Repair
- a) This work shall consist of filling all holes and depressions in the pavement surface, any voids created in the removal of underlying loose or deteriorated concrete base and constructing full depth base repairs.
 - b) This work shall be in accordance with Section 502 of the current MDOT Standard Specifications for Construction, Wayne County Special Provision WC502(D) and Wayne County Standard Plans.
- 5.14.5 HMA Pavements
- a) This work shall consist of furnishing and placing HMA paving materials in accordance with Section 502 of the current MDOT Standard Specifications for Construction, Wayne County Special Provision WC502(E) and Wayne County Standard Plans.
- 5.14.6 HMA Pavements with Polymer Modified Asphalt Cement
- a) This work shall consist of furnishing and placing HMA paving materials in accordance with Section 502 of the current MDOT Standard Specifications for Construction, Wayne County Special Provisions WC502(H), WC502(E) and Wayne County Standard Plans.
- 5.14.7 HMA Superpave Pavements
- a) Paving of Roadways: This work shall consist of furnishing and placing HMA paving materials in accordance with Section 502 and 904 of the current MDOT Standard Specifications for Construction, Wayne County Special Provision WC502(J).
 - b) Conditioning of Roadway & Paving of Driveways: This work shall consist of furnishing and placing HMA paving materials in accordance with Section 502 of the current MDOT Standard Specifications for Construction, Wayne County

Special Provision WC502(L) and Wayne County Standard Plans.

5.14.8 HMA Acceptance Criteria

- a) Before final acceptance of HMA pavement by the County, the following acceptance criteria will be enforced:
 1. HMA Mixtures - Wayne County Special Provisions, "HMA Pavements", WC502(E), "HMA Paving Mixtures Subject to Rejection or Penalty", WC502(F), "Superpave HMA Pavements", WC502(J), and "HMA Pavements", WC502(L) shall govern.
 2. Bond Coat - Wayne County's Special Provisions, "HMA Pavements", WC502(E), "Superpave HMA Pavements", WC502(J) and "HMA Pavements", WC502(L) shall govern.
 3. Compaction Density Tests - Wayne County Special Provisions, "HMA Pavements", WC502(E), "Superpave HMA Pavements", WC502(J) and "HMA Pavements", WC502(L) shall govern.
 4. Cores - Wayne County's test methods shall govern.

5.14.9 Failure

- a) Pavement that fails to meet the minimum acceptance criteria shall be subject to corrective actions and/or penalties detailed in the appropriate Special Provision listed above.
- b) Penalties may include the assessment of damages to be deducted from the bond and/or corrective action including removal and replacement of the deficient pavement.

SECTION 6: RESTORATION

RULE 6.1 GENERAL INFORMATION

- 6.1.1 The Permit Holder shall restore, at its expense, all public and private property damaged in consequence of acts or omissions by the Permit Holder and/or the Contractor(s) to a condition similar and equal to that existing before the damage was done. If the Permit Holder neglects to make restoration, Wayne County, after a 48 hour notice to the Permit Holder, may proceed to complete the restoration. The cost of restoration shall be paid by the Permit Holder.
- 6.1.2 No permit shall be released until all required restoration is completed.

RULE 6.2 PAVEMENT

- 6.2.1 The Permit Holder shall restore any pavement within the County road right-of-way, easements or public land damaged due to the permitted work or indirectly due to material handling, trucking, equipment or the placement of temporary roads.

RULE 6.3 TEMPORARY PAVEMENT PLACEMENT

- 6.3.1 Temporary pavements must be placed immediately after utility installation is completed. If temporary pavement repairs are not completed immediately after the utility installation, steel plates shall be used as specified in Section 4.22: *Requirements for Steel Plating*.
- 6.3.2 If the Permit Holder neglects to place the temporary pavement or steel plating as required above, Wayne County, after a 48 hour notice to the Permit Holder, may proceed to complete the restoration. The cost of restoration shall be paid by the Permit Holder.
- 6.3.3 Any pavement removed or damaged as a result of the activities of the Permit Holder shall be temporarily replaced with the following.
- a) Between May 1st and October 31st, a minimum of two (2") inches of HMA on 21AA aggregate base course compacted to a minimum density of 100%. See the note below to determine the minimum thickness of the 21AA aggregate base course.
 - b) Between November 1st and April 30th, if HMA is not available, a minimum of two (2") inches of cold patch on 21AA aggregate base course compacted to a minimum density of 100%. These dates are approximate. If HMA is reasonably available between November 1st and April 30th, it shall be used if weather allows. See the Note below to determine the minimum thickness of the 21AA aggregate base course.

NOTE: 21AA aggregate base course is required from the existing subgrade to the base of the concrete, HMA or cold patch used on the temporary patch.

- 6.3.4 The Permit Office may require six (6") inches non-reinforced high early concrete to be used in place of HMA or cold patch on temporary patches. This will be based on expected traffic volumes and predicted maintenance requirements.
- 6.3.5 All concrete used for temporary patches or final pavement repairs shall use a 35HE mix design approved by the County's Testing Office, unless otherwise directed by the Permit Office. Lane ties and appropriate load transfer assemblies shall be used.
- 6.3.6 All temporary pavements shall be maintained in good condition by the Permit Holder and/or the Contractor until the final pavement replacement has been completed.

RULE 6.4 FINAL PAVEMENT PLACEMENT

- 6.4.1 The surface of all final pavement repairs shall match the surface of the surrounding existing pavement, unless otherwise approved by the County Engineer.
- 6.4.2 Final pavement placement shall be completed within four (4) months of the temporary repair within the current construction season (May 1st through October 31st). If the pavement cannot be placed due to the end of the construction season, it shall be placed within thirty (30) days following the start of the next construction season, unless otherwise directed by the Permit Office. Under some conditions, where size and depth of the excavation may affect settlement, the Permit Office may require a longer period before the final pavement placement is made.
- 6.4.3 The final area of any pavement to be replaced and/or overlaid shall be determined and marked out by the County. Any deviations in pavement design or materials must be approved by the Permit Office.
- 6.4.4 The final paving shall be completed in accordance with the current MDOT Standard Specifications For Construction. The Permit Holder shall notify the Permit Office a minimum of two (2) working days prior to starting any paving activities. The Permit Office requires that the Wayne County Testing Office inspect all materials used in the pavement construction. If the Permit Holder does not provide adequate notification, the Permit Holder may be required to reschedule the work.
- 6.4.5 Pavement materials may be inspected either on site or at the point of origin. During and after construction, the Permit Office will provide the Permit Holder with testing results. If tests conducted by the Wayne County Testing Office demonstrate that the pavement is out of specification or is deficient, the Permit Holder may be required to pay penalties and/or replace the deficient pavement.

RULE 6.5 PAVEMENT REPAIRS ON PRIMARY CLASS "A" ROADS AND INDUSTRIAL STREETS

- 6.5.1 Finished concrete shall be constructed with ten (10") inches of non-reinforced concrete pavement including load transfer devices over a minimum of nine (9") inches of 21AA aggregate base course compacted to 95% of the maximum unit weight.

- 6.5.2 HMA over base course concrete shall be constructed with two (2") inches of HMA Wearing Course on ten (10") inches of non-reinforced concrete pavement including load transfer devices over a minimum of nine (9") inches of 21AA aggregate base course compacted to 95% of the maximum unit weight.
- 6.5.3 If resurfacing or repairing curbed pavement, and the curb height is less than 2 ½ inches, then the Permit Holder shall provide curb capping as per standard plan, Concrete Curb Capping (D-7).

RULE 6.6 PAVEMENT REPAIRS ON PRIMARY CLASS "B" ROADS AND LOCAL ROADS

- 6.6.1 Finished concrete shall be constructed with seven (7") inches of non-reinforced concrete pavement over a minimum of nine (9") inches of 21AA aggregate base course compacted to 95% of the maximum unit weight
- 6.6.2 HMA over base course concrete shall be constructed with two (2") inches of HMA Wearing Course on seven (7") inches of non-reinforced concrete pavement over a minimum of nine (9") inches of 21AA aggregate base course compacted to 95% of the maximum unit weight.
- 6.6.3 All roads with HMA pavement which have excavated or bedding and backfill materials placed thereon during construction shall be swept to remove all such materials. All required repairs will be marked out by the Wayne County Permit Office, HMA pavement shall be milled and resurfaced with two (2") inches of HMA wearing course.
- 6.6.4 Place #6 X 18 inch long epoxy anchored lane ties on thirty-six (36") inch centers (minimum two per side) on all longitudinal joints and on eighteen (18") inch centers for non expansion transverse joints.
- 6.6.5 Pavement repairs shall be cured by applying one coat of white membrane curing compound at the rate of 0.05 gallons per square yard of surface on finished concrete surfaces; use clear curing compound on base course concrete. The curing compound shall be fully dry prior to opening the repairs to traffic. If white membrane curing compound is used on any concrete surface where HMA is to be placed, it shall be completely removed as directed by the Permit Office.
- 6.6.6 Pavement restoration shall include wedging with suitable asphalt as necessary to restore pavement cross-slope, superelevation or transitions, including adjustments to driveways, side roads and paved shoulders. The Permit Holder is responsible for any necessary adjustments to shoulders, including adding material if needed to achieve a smooth and uniform cross-slope. Special care shall be taken to maintain positive drainage at all locations including driveway aprons. The Permit Office requires three (3') foot paved shoulders on primary roads.
- 6.6.7 All traffic shall be kept off the newly cast concrete until the concrete has obtained a minimum compressive strength of 3000 PSI. All joints shall be sealed with hot-poured, rubber sealant prior to opening to traffic.

RULE 6.7 ACCEPTANCE FOR HMA AND CONCRETE PAVEMENT

- a) Concrete pavement acceptance shall follow the standards detailed in Rule 5.13.11: *Concrete Acceptance Criteria*.
- b) HMA pavement acceptance shall follow the standards detailed in Rule 5.14.8: *HMA Acceptance Criteria*.

RULE 6.8 GRAVEL ROADS

- 6.8.1 All gravel roads which have excavated or bedding and backfilling materials placed, or are otherwise damaged or contaminated due to construction operations, shall be graded to remove all such materials and top-dressed with a minimum of two (2") inches of 22A aggregate and stabilized with liquid calcium chloride applied to the surfacing course.
- 6.8.2 All excavations within the limits of the roadbed shall be backfilled with porous material conforming to standard plan Sewer Trench A,B (S-12).
- 6.8.3 Immediately after the excavation is backfilled and compacted, the affected portion of the road and ditches shall be rough graded to the appropriate gravel road cross section, conforming to standard plan, Typical Cross Section Existing Gravel Road Restoration with Open Ditches (RS-22) and the affected portion of the road surface shall be stabilized with a minimum of ten (10") inches of compacted 21AA limestone.

RULE 6.9 SHOULDERS

- 6.9.1 All HMA shoulders which have excavated or bedding and backfill materials placed during construction shall be swept to remove all such materials. If directed by the Wayne County Engineer, sections of the HMA shoulder shall be milled two (2") inches and resurfaced with a Wayne County approved HMA wearing course.
- 6.9.2 All gravel shoulders which have excavated or bedding and backfilling materials placed, or are otherwise damaged or contaminated due to construction operations, shall be graded to remove all such materials and top-dressed with a minimum of two (2") inches of 22X aggregate or 23A limestone and stabilized with liquid calcium chloride applied to the surfacing course.
- 6.9.3 The Permit Holder shall construct or replace aggregate shoulders adjacent to all uncurbed pavement widening and tapers conforming to Rule 5.11: *Shoulders*.

RULE 6.10 CONCRETE SIDEWALKS AND ADA SIDEWALK RAMPS

- 6.10.1 All sidewalk and ADA sidewalk ramp construction shall conform to Rule 5.10: *Sidewalks and Ramps*, unless otherwise directed by the Wayne County Engineer.

RULE 6.11 DRAINAGE SYSTEM

- 6.11.1 All structures, enclosures, culverts and ditches damaged or removed shall be repaired or replaced to meet the current Wayne County Standards and Specifications, or as directed by the Wayne County Engineer. Grading or ditching may be required to establish positive drainage, which may require additional work not shown on the approved plans.
- 6.11.2 All damaged or removed structures, enclosures or culverts not shown on the approved plans shall be repaired or replaced by the Permit Holder.
- 6.11.3 All road drainage and drains impacted by the permit construction activities shall be restored as soon as possible following construction. Ditches, ditch slopes and other areas within the right-of-way shall be restored to the current Wayne County Standards and Specifications.
- 6.11.4 The Permit Holder shall provide grade stakes at one hundred (100') feet maximum intervals to re-establish proper ditch line and grade and at fifty (50') feet maximum intervals to restore enclosed drainage systems. The Permit Holder shall re-ditch or establish new ditch elevations based on changes to culverts or other structures in order to ensure a stable, maintainable ditch is established. If the velocity of water is great enough that erosion of the ditch may occur, rip-rap or other structural elements may be required in order to prevent erosion of ditches, drains or their outlets. Wayne County will notify the Permit Holder and/or the Contractor if additional soil erosion and sedimentation control measures are required.
- 6.11.5 In order to provide adequate drainage, the Permit Holder shall be responsible to clean all drainage facilities that require cleaning.

RULE 6.12 TRAFFIC SIGNS, MARKINGS AND TRAFFIC CONTROL DEVICES

- 6.12.1 The Permit Holder shall be responsible for placement of all lane line markings, traffic control devices and street name signs called for on the approved permit plans, or as otherwise directed by the Permit Office.
- 6.12.2 All temporary or regulatory traffic control signs, markings and devices shall conform to the specifications and standards listed in Section 7: *Maintaining Traffic and Traffic Control Devices*.
- 6.12.3 Neither a County road nor a street approach to a County road shall be opened to traffic without the required signage and/or traffic control devices.

RULE 6.13 LANDSCAPING

- 6.13.1 All areas within the road right-of-way beyond the shoulders, curbs or edge of gravel of the road which are disturbed as the result of the Permit Holder's activities shall be restored as soon as possible during the first growing season. Where necessary, temporary measures may be required prior to the growing season to minimize erosion. Restoration shall not be delayed until project completion. Failure to comply with this specification shall be just cause for the Permit Office to stop the remaining construction work until the required restoration is completed. The ground cover specified on approved plans shall be maintained until final settlement of excavated or disturbed areas has occurred and growth is established.
- 6.13.2 All disturbed areas within the road right-of-way, outside of the pavement or gravel shoulders, or within park property or drain easements shall be restored with three (3") inches of topsoil, seed mix, THM and mulch or with Excelsior Erosion Control Blankets. Seed and mulch will be distributed mechanically. Slopes steeper than one (1) on three (3) and ditch bottoms shall be restored with two (2") inches of topsoil and sod. All sod shall be staked in place when installed in a ditch, drain or on any slope.
- 6.13.3 Sod may be required by the Permit Office in areas where topsoil, seeding and mulching cannot, or has not, provided the effective ground cover required because of steep slopes or grades, velocity or volume of water or other conditions. Sod may be required in areas of established, maintained lawns. All sod shall be placed on three (3") inches of topsoil following preparation of the surface per the MDOT Standard Specifications For Construction. The Permit Holder is responsible for the establishment and growth of vegetation. The permit will not be released until the Permit Office is satisfied that vegetation has been re-established.
- 6.13.4 All removed trees as directed by the Wayne County Engineer will be replaced with two (2") inches to two and one-half (2 ½") inches balled and burlapped trees, unless otherwise noted. The species required is to be designated by the County Engineer. Where the County Engineer determines equipment may damage adjacent trees, a protective plank covering will be attached to the trees. The trees and shrubs shall be protected from unnecessary top and root damage. Boring will be required in accordance with the current Wayne County Standards and Specifications. Trees and shrubs damaged during construction shall be repaired. This shall include the trimming of the tree tops to reestablish a proper top and root balance. Trees and shrubs damaged beyond repair or removed without authorization shall be replaced.
- 6.13.5 In County parks, a work area will be designated by the County Engineer and will be delineated by the use of snow fence or other satisfactory substitute. The County Engineer will provide restoration requirements in keeping with the park's design where the replacement of plant material is difficult to ascertain prior to construction.
- 6.13.6 The Permit Holder must observe any rights of abutting property owners resulting from tree trimming or tree removal. All limbs, logs, stumps and litter must be disposed of in a manner acceptable to the County Engineer. The Permit Holder will also comply with any additional published governmental regulations.

SECTION 7: MAINTAINING TRAFFIC & TRAFFIC CONTROL DEVICES

RULE 7.1 GENERAL GUIDELINES

- 7.1.1 Traffic shall be maintained at all times unless a road closure is approved by the Permit Office.
- 7.1.2 The Permit Holder shall maintain local vehicular and pedestrian traffic and access to all properties within the influence of necessary lane or road closures.
- 7.1.3 If the Permit Holder chooses to employ more than one construction crew at a time, the work shall be scheduled so that neither undue nor unnecessary traffic congestion is caused by such multiple operations. Any interruption of normal traffic patterns requires notification of and approval by the Permit Office.

RULE 7.2 TRAFFIC MAINTENANCE PLAN DESIGN REQUIREMENTS

- 7.2.1 The Permit Holder shall provide all watchmen and flagmen, barricades, signs and lights necessary for the safety and convenience of the public. The Permit Holder shall furnish all such personnel and warning devices in accordance with the procedures and standards established in the Manual of Uniform Traffic Control Devices (MUTCD).
- 7.2.2 All temporary traffic control devices shall meet the design requirements of the MUTCD, Part VI, as well as the "MDOT Standard Specifications For Construction", and the requirements detailed in, "Recommended Procedures for the Safety Performance Evaluation of Highway Features - Report 350" (NCHRP-350).
- 7.2.3 All temporary traffic shall be maintained according to the traffic control plans detailed in the latest MDOT Typical Plans - Work Zones.

RULE 7.3 SIGNS AND SIGNING

- 7.3.1 All signs, sign support standards, barricades, plastic drums, warning lights and traffic control devices necessary for safe and convenient traffic operations shall conform to the current Manual on Uniform Traffic Control Devices as approved by Wayne County. All such devices shall be furnished, installed and maintained by and at the expense of the Permit Holder.
- 7.3.2 Traffic control and road name signs shall be removed, temporarily reset and maintained as necessary by the Permit Holder. Traffic control signs shall be reset in conforming locations where they will continue to serve their intended purposes. Signs shall be mounted so as to be easily visible and legible to traffic.

- 7.3.3 Upon completion of the project, the Permit Holder shall install new traffic control signs and road name signs in their proper positions, unless otherwise directed by the Permit Office.
- 7.3.4 The Permit Holder is responsible for all costs associated with any signs erected or relocated by Wayne County. Any existing signs which are damaged during the course of construction will be replaced at the expense of the Permit Holder.
- 7.3.5 The Permit Holder shall be responsible for the protection of all traffic control devices within the project area from damage due to any activities associated with the project, including hauling operations, construction equipment and materials, storage, equipment moves, staging and parking.
- 7.3.6 Advisory or informational signs may be required by Wayne County in order to direct traffic to commercial or public facilities located within the work area. The Permit Holder, at its expense, shall be responsible for fabrication, installation, maintenance and removal of such signs.
- 7.3.7 Traffic control devices shall be maintained by the Contractor for the duration of the project. The Contractor shall conduct night patrols of the construction area and any detour route.
- 7.3.8 Any temporary traffic control signs not in use shall be completely covered with plywood or aluminum sheeting or taken down as directed by the Permit Office.
- 7.3.9 The Contractor shall stake all construction sign locations and notify Wayne County when the staking is complete. The Contractor shall allow two (2) working days for Wayne County to review, adjust and approve the construction sign staking. The construction sign stakes shall indicate the type (code) and size of the sign to be placed at each location.
- 7.3.10 All M4-9 signs shall be supplemented with D3-2a (road name) panels.
- 7.3.11 Temporary lane markings shall be placed where needed to control traffic immediately after paving has been completed.

RULE 7.4 LANE AND SHOULDER CLOSURES

- 7.4.1 Where a lane or shoulder closure is approved by Wayne County for purposes of open-cut crossings or construction within, immediately adjacent to or parallel to the traveled portion of the roadway, the following requirements shall apply:
- a) Lane closures will be restricted to the hours of 9:00 A.M. to 3:00 P.M., unless specifically authorized by Wayne County.
 - b) All required temporary traffic control devices and temporary improvements shall be in place and shall be completed before the actual lane closure begins.
- 7.4.2 Refer to the MDOT Typical Plans regarding lane and shoulder closures.

RULE 7.5 ROAD CLOSURES AND DETOURS

- 7.5.1 Pursuant to state statute, Wayne County must approve any road closure and assign appropriate detour routes before closing a road. In order to construct a facility covered by a permit which will require any road closure, Wayne County must first approve the time, date and section of road to be closed.
- 7.5.2 Before commencing any work which will require closing a road, the Applicant or Permit Holder must submit a written request to close the road in question no less than three (3) weeks prior to the anticipated road closure date, and
- a) State the beginning and ending dates and times of the proposed road closure;
 - b) Submit a proposed detour route, showing all signing requirements in accordance with the current Manual on Uniform Traffic Control Devices;
 - c) If the proposed detour route involves roads not under the jurisdiction of Wayne County, submit written evidence of request for approval of the current jurisdictional agency to use such roads as detour routes;
 - d) State in writing the party responsible for fabricating and installing road closure and detour route signing, with acknowledgment that all costs associated with road closure and detour signing shall be borne by the Permit Holder; and
 - e) Submit all of the above information no less than three (3) weeks prior to the anticipated road closure date.
- 7.5.3 The Permit Office may change detour routes if it is deemed necessary.
- 7.5.4 The Permit Holder shall notify the appropriate local officials including police department, fire department and schools of the closure one (1) week before the date of closure.
- 7.5.5 The Permit Holder shall install and maintain all signing for approved detours unless other arrangements are approved in advance by Wayne County. The Permit Holder shall give Wayne County at least three (3) weeks advance notice of erection of any detour signing, not including Saturdays, Sundays or holidays. Special information signs, including closure dates, shall be posted at least one (1) week prior to closure.
- 7.5.6 When the detour is no longer needed, the Permit Holder shall notify the Permit Office that the road has been reopened and that the detour is no longer in effect.
- 7.5.7 If Wayne County determines that the detour must be altered, the Permit Holder shall make the necessary changes as directed by the Permit Office. The Permit Holder shall be responsible for any costs of such change.
- 7.5.8 Upon reopening of the closed road and discontinuance of the detour, Wayne County will make a final inspection of the detour route. The Permit Holder shall repair any damage resulting from use of the detour before the terms and conditions of the permit will be released.

RULE 7.6 OPEN CUT CONSTRUCTION

- 7.6.1 Unless otherwise indicated on the approved plans, open cut construction shall be accomplished as follows:
- a) Pavement crossing work shall be accomplished between the hours of 9:00 A.M. and 3:00 P.M., unless otherwise directed or authorized by the Permit Office.
 - b) Temporary pavement shall consist of sixteen (16") inches of 21AA aggregate and two (2") inches of HMA Leveling, allowing RAP.

RULE 7.7 STEEL PLATING

- 7.7.1 Refer to Rule 4.22: *Steel Plating*.

RULE 7.8 TRAFFIC CONTROL DEVICES AND EQUIPMENT

- 7.8.1 If working in the vicinity of any traffic control device under Wayne County jurisdiction, the Permit Holder shall notify and receive approval from the Wayne County Traffic Office at least three (3) business days prior to construction. Calling "MISS DIG" does not relieve the Permit Holder of this obligation.
- 7.8.2 The Permit Holder shall protect from damage or interference all traffic control devices and equipment, including, but not limited to, hand holes, conduit, wiring, detectors, cabling, supports, cameras, beacons, signals, control boxes and any other equipment associated with the control of traffic signals, signs and warning devices. The Permit Holder may not remove, adjust, relocate, tamper with or interfere with the operation of these traffic control devices without the express permission of the Wayne County Traffic Office, unless specifically indicated on the permit and on the approved plans. The Permit Holder shall pay the cost and expense of any and all necessary repairs, restorations or adjustments to these systems as determined by Wayne County.

RULE 7.9 GUARDRAIL

- 7.9.1 The Permit Holder shall remove or protect from damage any guardrail, guardrail posts, guideposts or end treatment which conflicts with the proposed work or the operations of the Permit Holder. No guardrail may be removed without prior permission from Wayne County. If guardrail is removed with permission, high-intensity, flashing light mounted plastic drums shall be placed and the guardrail shall be restored as soon as the conflict no longer exists. The Permit Holder may elect, at its sole expense and with the permission of Wayne County, to eliminate guardrails by flattening slopes, removing obstacles or other measures which result in the guardrail no longer being warranted by the current AASHTO Standards. If any guardrail or posts are removed or damaged, the Permit Holder shall restore them to the current MDOT Standards for height, type, construction and end treatment. If the height of the guardrail is changed in relation to the roadway or shoulder as a result of the work performed by the Permit Holder, the guardrail must be upgraded at the direction of Wayne County and at the expense of the Permit Holder.

RULE 7.10 PAVEMENT MARKINGS

- 7.10.1 Unless otherwise stated on the approved plans or on the permit, the Permit Holder shall protect, restore or replace as necessary any pavement markings, including lane lines, pedestrian crossings, legends, symbols and stop bars which are disturbed or damaged by the work or the Contractor's operations.
- 7.10.2 Permanent pavement markings shall be placed immediately after the installation of pavement. Temporary markings may be used on temporary pavements, but must be replaced before November 1st with permanent markings if the permanent pavement will not be installed until the following year. Temporary markings will not be allowed during the winter season. The Permit Holder is responsible for regular inspection of temporary pavement markings and repair or restoration of damaged or disturbed markings.

RULE 7.11 DUST CONTROL AND CLEANLINESS OF WORK

- 7.11.1 The Permit Holder shall maintain all work areas in the right-of-way in a safe, dust free condition until all work in a given area is completed, including the hauling of materials. Dust control at a frequency determined by Wayne County shall be provided on any unpaved detour, bypass, or shoulder which is to be used by traffic. Dust control shall be provided in compliance with Section 107.15 of the MDOT Standard Specifications For Construction.
- 7.11.2 In cases where the Permit Holder's activities result in increased traffic on existing gravel surface roads, the Permit Holder shall be required to provide for additional dust control and grading.
- 7.11.3 Trucks hauling excavated materials, cement, sand, stone or other loose materials from or to the site shall be tight so that no spillage will occur on adjacent streets or haul routes. Additionally, truck tires shall be cleaned to avoid tracking.
- 7.11.4 Power-driven sweeping equipment shall be available daily to adequately clean all areas which become a nuisance, hazardous and/or a source of complaint due to the operations of the Contractor or material suppliers to the project, or as directed by the County Engineer. A rotary sweeper (or equivalent) may be used. However, when the use of a rotary sweeper is not feasible, due to its inadequacy in keeping dust laid or for any other objectionable feature, a power-driven, truck mounted, regenerative air system sweeper (vacuum), or equivalent, will be required.
- 7.11.5 The Permit Holder shall at all times keep the roadway, and any public or private premises temporarily occupied for purposes of work, free from accumulations of waste material or rubbish caused by the construction work. This shall also include any areas in the vicinity of the work which are affected by the Contractor's construction or hauling operations. If the Contractor fails to keep the above noted areas clean of dust or debris, and thereby creates any public nuisance, the Contractor shall be notified by the County Engineer. If, within two (2) hours after receipt of such notice, the Contractor fails to clean such areas satisfactorily, the County Engineer shall have the WCDPS, Division of Roads, or such other agency, perform the work. All costs shall be the responsibility of the Permit Holder.

RULE 7.12 PROTECTION OF PLANT LIFE

- 7.12.1 Vegetation not required to be removed shall be protected during the course of the work. Any trees or vegetation damaged as a result of the Contractor's operations shall be repaired or replaced as directed by the County Engineer. All costs shall be the responsibility of the Permit Holder.

RULE 7.13 HAUL ROUTES AND NORMAL WEIGHT RESTRICTIONS

- 7.13.1 The Contractor shall secure prior permission from the authorities having jurisdiction for the use of a particular road as a haul route. Loading restrictions, as established by law, shall be observed.
- 7.13.2 Normal weight restrictions will be in effect at all times, except during the period when reduced seasonal load limitations are in effect. If, due to the high volume of trucking, damage to the roads is threatened, the Permit Holder shall reduce loads carried on the roads as necessary to avoid damage, as directed by Wayne County. The use of tracked or crawler mounted equipment on road pavements shall not be permitted unless specifically authorized in writing by Wayne County. Written authorization for such use will usually require complete replacement or resurfacing of the entire pavement so used.

SECTION 8: SUBDIVISION RULES & REGULATIONS

RULE 8.1 RULES AND REGULATIONS FOR RESIDENTIAL AND COMMERCIAL PLATS

8.1.1 Purpose

- a) Act 288 of the Public Acts of 1967, as amended by the State of Michigan, is known as the Land Division Act of 1967 (also known as the Subdivision Control Act and the Plat Act). All plats intended to be recorded with the Register of Deeds must be in conformity with this Act. The following rules, regulations and specifications which are issued in compliance with said Act will serve to guide land developers interested in subdividing land and will provide a uniform method for preparing plats submitted to the County for processing in accordance with the Act.
- b) The County, through legislative enactment, has under its jurisdiction all subdivision streets and alleys in regularly recorded plats located outside of the corporate limits of any city or village in Wayne County. The County also has jurisdiction of many of the primary roads within the boundaries of cities and villages in the County. Whenever a Proprietor wishes to plat any lands located outside of an incorporated city or village, or lands located adjacent to any highway under the jurisdiction of the County, a proposed plat must be submitted to the County for approval. In accordance with the provisions of the Land Division Act, the County has the right to require that all highways, streets, alleys and private roads shown within or abutting the plat shall be improved to the County's standards and specifications before approval is given. The Act also makes it possible for the Proprietor to record a plat before the required improvements are made, provided a security deposit is posted with the County to insure completion of the required improvements.

RULE 8.2 PRELIMINARY PLAT REQUIREMENTS

8.2.1 Submission of Preliminary Layout

- a) The Land Division Act requires the Proprietor to prepare a preliminary plat on a topographic map showing the proposed layout of the area intended to be platted. This plat shall be prepared under the direction of a professional engineer or a registered land surveyor registered in the State of Michigan and shall be drawn to a scale not smaller than one (1") inch = two hundred (200') feet. The Proprietor is advised to submit a pre-preliminary plat with comments for review.
- b) The preliminary plat shall give the name of the plat and the location of the proposed subdivision with reference to the section and part of section in which the parcel is situated and the name of the township, city or village. The plat shall show the proposed street and alley layout, lot and plat dimensions, all pertinent factors such as adjoining roads and subdivisions, rivers, railroads, high tension tower lines or underground transmission lines, cemeteries, parks, natural water courses, County drains, sewers, easements or any other feature, the existence, location or description of which might be of value in determining the overall requirements for the subdivision.

- c) The streets shall be named and their width clearly designated. All highways and streets within the proposed plat shall be designated by name, except in the case of State Trunk Line Highways which shall be identified by name and route number; e.g., Ford Road M-153. Highways or streets which are extensions of existing public highways or streets shall carry the name now in use as recognized by the County. Any new highway or street which does not come under the above category may be given such a name as the Proprietor may choose, subject to the approval of the County. The objective sought is to avoid confusion and duplication of names.
- d) Easements for public utilities shall also be shown. In the event easements are required for road drainage, either within the subdivision or beyond its borders, such information shall be submitted with the preliminary plat. Since an improper utility easement location can result in a change in plat layout, the Proprietor is advised to consult with the respective utility companies before presentation of the preliminary layout for the County's approval. The Land Division Act requires formal submission of the preliminary plat to the public utilities serving the area for informational purposes.
- e) In the case where the Proprietor wishes to subdivide a given total area, but wishes to begin with only a portion of the total given area, the original preliminary plat shall include the proposed general layout for the entire area. The portion which is proposed to be subdivided and platted first shall be clearly superimposed upon the overall plan in order to illustrate clearly the method of development which the Proprietor intends to follow. Each subsequent portion shall follow the same procedure until the entire area controlled by the Proprietor is subdivided. If the Proprietor wishes to revise the layout of any portion of the total area not yet platted, he shall submit a revised preliminary plat of the total area included in the original preliminary plat, including both platted and unplatted portions. When approved, the revised preliminary plat shall replace the original for the remainder of the development.
- f) Three (3) prints of the preliminary plat layout, with applicable fees, prepared in accordance with the above requirements shall be forwarded to the County together with a letter of transmittal requesting that the plat be reviewed and, if found satisfactory, approved. The names of the Proprietor and engineering or surveying firm, with mailing addresses and telephone numbers for each, shall be included with the transmittal.
- g) Within thirty (30) days of receipt, if the proposed plat as submitted meets with all the requirements, one approved copy of the preliminary plat will be returned. Approval of the preliminary plat is required before proceeding with the preparation of road and drainage plans. If the proposed plat is not approved as originally submitted, the County will notify the Proprietor in writing within thirty (30) days of receipt of the preliminary plat, setting forth the reasons for withholding approval, and requesting that the necessary changes be made and the revised layout resubmitted.
- h) The Proprietor is reminded that approvals of the preliminary plat by the local governing body and the Wayne County Drain Commissioner are also required under the Land Division Act. Should any changes be required by such approving authorities, such changes shall be incorporated in a revised layout and the revised preliminary plat resubmitted for approval even though the original layout may have already been approved by the County. The Proprietor is further reminded that under certain conditions, the Michigan Departments of Transportation, Environmental Quality, Natural Resources and the Wayne

County Health Department are also required to give their approvals to the preliminary plat.

- i) Under the Land Division Act, the Proprietor receives a tentative and a final approval of the plat from the governing body. For purposes of the final approval, the Proprietor is required to submit to the governing body the County's approved copy of the preliminary plat, along with approved copies of the other approving authorities. When received, the final approval of the governing body confers upon the Proprietor for a period of two (2) years from date of approval the conditional right that the general terms and conditions under which preliminary approval was granted will not be changed. The following conditions shall govern the County's approval of the preliminary plat:
 1. The Proprietor will be required by the County to resubmit the preliminary plat for a new approval if the governing body has not given its final approval before one year after the date of the County's approval.
 2. The County's approval shall be conditioned on the premise that the Proprietor shall start construction of the road improvements in the subdivision as required by the County within two years after the date of final approval of the preliminary plat by the governing body. Should such construction not begin within the said two-year period, the County may require compliance with such general terms and conditions as the County may have adopted since giving its approval or require the deposit or additional securities resulting from an increase in the projected cost of construction.

8.2.2 Right-of-Way Requirements

- a) The following minimum right-of-way widths are required:
 1. Expressways or superhighways shall be of such width as the current plans of the highway authorities require.
 2. Section line roads and primary diagonal highways shall be 120 feet wide.
 3. Quarter section line roads and collector roads shall be 86 feet wide with a minimum centerline radius and a minimum tangent section in conformance with current AASHTO guidelines. Refer to "AASHTO – A policy on Geometric Design of Highways and Streets".
 4. Residential streets shall be 60 feet wide.
 5. Industrial roads shall be 60 feet wide if approved for 27 foot pavement; 80 feet wide if approved for 44 foot pavement.
 6. Cul-de-sacs and eyebrows shall be designed according to the standard plans, Typical Cul-de-sacs (RS-7) and Typical Eyebrow (RS-8).
 7. Where service roads parallel to and abutting County roads are permitted, they shall have a minimum width of 35 feet.
- b) The above widths shall govern generally. However, if the County Engineer determines that additional right-of-way is required for proper construction of any of the above roads because of special circumstances such as grading operations, requirements for horizontal sight distance, or the location of open channels or permanent structures occupying portions of the right-of-way, such facts shall be made known to the Proprietor after a review of the preliminary

layout by the County Engineer, whenever possible. The Proprietor and his engineer are cautioned and forewarned that the need for additional right-of-way may not become clearly apparent until construction plans are prepared.

- c) In general, section line and quarter section line roads shall be centered on said lines. Any exception to this practice must be approved by the County Engineer. The location of new pavements within a road right-of-way shall be in accordance with the Residential Street Standards contained herein and shall be subject to approval by the County Engineer.

8.2.3 Conformity

- a) The proposed subdivision shall take into consideration the surrounding conditions in the immediate area bordering on the Proprietor's property. Any existing highways, streets or alleys that terminate at the boundaries of a proposed plat must be connected to provide a continuous circuit for travel. No subdivision will be approved if the layout imposes unreasonable restrictions on the future development of adjoining properties.
- b) Short street sections which are required to provide access to such property shall be dedicated to the public in the same way as other roads in the subdivision, whether or not the Proprietor requires same for access to any lots. Outlots for such purposes will not be permitted.
- c) In case a connecting street also provides access to lots in the proposed subdivision, the Proprietor may be required to dedicate sufficient land at its terminus to serve as a temporary turn around until such time as the street is extended to provide for a continuous circuit for travel. Permanent cul-de-sacs will be allowed if the lands proposed to be subdivided are limited in area or are subject to a natural barrier. Cul-de-sacs shall be designed in accordance with standard plan, Typical Cul-de-sacs (RS-7).
- d) The connection of a subdivision road, which is under the jurisdiction of Wayne County, to a privately owned road is prohibited.
- e) In contemplating the street layout in the subdivision, the Proprietor is reminded that it is of prime importance that subdivision streets which intersect with existing primary highways must make provisions for adequate and safe sight distances. Minimum sight distances at such locations in urban areas shall conform with current ASHTO specifications. Offset intersections are undesirable. Streets which intersect primary highways at less than 90 degrees are undesirable. Where a street intersects a divided highway at a point where no crossover has been provided, it shall be the responsibility of the Proprietor to provide such crossover if deemed necessary by the County. Width and spacing of crossovers shall be determined by the County Engineer. If it is necessary to close a crossover which does not serve a public street, in order that a crossover can be provided at the public street, it shall be the responsibility of the Proprietor to remove such existing crossover if deemed necessary by the County Engineer.
- f) The policy of fronting residential lots on the internal street system is required for safety's sake.
- g) The number of lots allowed in a cul-de-sac street shall not exceed 20.
- h) The length of lots allowed in a cul-de-sac street shall not exceed 700 feet.

RULE 8.3 IMPROVEMENTS REQUIRED

- 8.3.1 Before preparation of construction plans begins, the Developer should be aware of exactly what types of improvements are required by the County. The following is an outline of the improvements most often required. The Proprietor and his engineer are cautioned and forewarned that the need for additional improvements to resolve special situations may not become apparent until detailed construction plans have been reviewed by the County Engineer.
- 8.3.2 Clearing Within Road Right-of-Way
- a) All trees and brush, including the roots thereof, shall be removed from the proposed right-of-way of the streets within the limits of the subdivision, unless otherwise permitted by the County Engineer. Any and all unauthorized encroachments in the road right-of-way shall be removed before the street will be accepted by the County.
- 8.3.3 Grading and Drainage
- a) In the event the proposed subdivision is a partial development of a larger area and has certain streets terminating at its borders which will be extended when additional portions of the area are subdivided, it will be necessary for each subdivision to be self sufficient from the standpoint of surface drainage and not be dependent upon work planned to be performed in the next subdivision.
 - b) In order to provide adequate surface drainage of the proposed subdivision, it is often necessary to do work outside the limits of the subdivision and to acquire easements across private property. If drainage easements are required beyond the limits of the subdivision, these easements shall be acquired by the Proprietor in the name of the local governing body, Drain Commissioner or the County, whichever agency is to assume jurisdiction over the drainage facility requiring the easement. The jurisdictional arrangements for road drainage easements shall have the prior approval of the County Engineer. Construction of offsite storm sewers requiring easements shall not be accomplished until the easement documents have been given to and accepted by the body assuming jurisdiction thereof.
 - c) Where the subdivision is located adjacent to an improved County road, the Proprietor will be required to meet the County's existing construction standards for such roads. The work within the road right-of-way will normally include such items as intersection widening, shoulder widening, deepening and/or relocating existing ditches and developing an approved grading cross section along the limits of the subdivision. All existing or proposed culverts for established or relocated County drains or natural watercourses shall be extended beyond the road right-of-way line for a distance which is sufficient to allow the Developer to establish the required grading cross section.
 - d) Under the Wayne County Storm Water Management Ordinance, the Proprietor shall be responsible to comply with all requirements of the Wayne County Storm Water Management Program.

8.3.4 Paving of Streets and Local Roads Wholly Within the Plat

a) General

1. The Proprietor will be required to construct paved roadways with curbs and complete storm sewer drainage facilities meeting the County's standards and specifications.
 2. Minimum and maximum longitudinal gradients of 0.5% and 7.0%, respectively, will be required. Vertical curves are required if the algebraic sum of the gradients are 2.0% or greater. In cul-de-sacs or areas where hand-finishing is required, the minimum gradient shall be 0.6%. The radii at intersections shall be as shown on the standards attached hereto. (Storm sewers with all necessary appurtenances are an essential part of the paving construction and shall be incorporated in the improvement.) Grade P1 concrete having a compressive strength of 3500 PSI at 28 days shall be used. The requirements for concrete pavement construction shall be in accordance with the County's specifications.
- b) Concrete pavement on residential streets shall have a minimum width of 27 feet or 31 feet measured back-to-back of curbs. Refer to Standard Plan, Typical 27' & 31' Wide Concrete Cross Section (RS-13). Residential Quarter Line roads and Collector roads shall have a minimum width of 37 feet measured back-to-back of curbs. Non-Residential Quarter Line and Collector roads shall have a minimum width of 44 feet measured back-to-back of curbs. Residential streets approaching primary roads shall have a width of 37 feet back-to-back of curb, extending from primary road to the alley or to a point a minimum distance of 100 feet back from the primary road right-of-way line. Refer to standard plan, Typical Approach and Joint Layout at Primary Road (RS-11). Where cul-de-sac and eyebrow pavement designs are used, they shall conform to the County's standards.
- c) HMA Paving with Concrete Curb and Gutter Section shall be designed in accordance with standard plan, HMA Pavement with Curb and Gutter (RS-19), – The Hot Mix Asphalt (HMA) section shall be a total of 8 ½ inches full-depth asphalt for the 27 foot pavement and the 37 foot wide approach from a 27 foot pavement to a primary road. A total of 9 ½ inches full-depth Hot Mix Asphalt (HMA) shall be used for the 37 foot (Collector road) pavement. In each case, the top 1½ inches shall be the HMA Top (F). The remaining thickness, which is referred to as the base or binder shall be in accordance with the County's specifications.
- d) Placement of Top Course - In order to avoid damage to the HMA top course during home construction, the placement of the one and one-half (1½") inch top course will be delayed until 80% of the home construction is completed and contingent on the approval of the County Engineer.
- e) The base course is placed in a manner that conforms to standard plan HMA Pavement Standards (RS-19), which raises the base at the gutter to allow the pavement to drain into the catch basins prior to placing the top course. The raised base course is to be removed by milling prior to placement of the top course.

8.3.5 Paving of Streets and Local Roads Abutting the Plat

- a) Quarter Line Roads and Collector Roads - In the event the Proprietor is dedicating 43 feet of right-of-way on the side of the quarter line nearest his plat and the other half of the dedication has not yet been made, sufficient right-of-way is not available to construct a County road. No half width right-of-way roads will be approved.
- b) If the full width right-of-way is available, the Proprietor shall pave the roadway across the frontage of the property. This paving may extend beyond the property limits as directed by the County.
- c) Other Local Roads - All local roads abutting the plat, except quarter line roads and collector roads, shall be paved 27 or 31 feet wide measured back-to-back or curbs using seven (7") inches of non-reinforced concrete with integral curbs or eight and one-half (8½") inches of HMA pavement with concrete curb and gutter.

8.3.6 Paving of Primary Roads

- a) Where the subdivision is located adjacent to a paved County primary road, the Proprietor will be required to meet the County's current construction standards for primary roads. The work within the primary road right-of-way will normally include such items as intersection widenings and shoulder widenings. The Proprietor may also be required to construct acceleration, deceleration and/or passing lanes on the County primary road, as determined by the County Engineer.
- b) If the Proprietor of the subdivision is to construct a pavement on the primary or potential primary road, included within the new subdivision, he shall be required to construct a concrete pavement to the standard plan, Primary Road Class "A" Cross Section (P-1).
- c) If there is presently no improved roadway on the primary or potential primary artery or if there is a road improved to the County's standard for a gravel road, the Proprietor shall be required to construct a concrete pavement to the County's standards and specifications for a Class "A" road or Class "B" as approved by the County. The limits of paving will be determined by the County Engineer.

8.3.7 Basis of Acceptance for HMA and Concrete Pavements

- a) For acceptance criteria for concrete pavements, refer to Rule 5.13.11 of this manual.
- b) For acceptance criteria for HMA pavements, refer to Rule 5.14.8 of this manual.
- c) Approach Sidewalk - Where sidewalks are contemplated for the proposed subdivision, approach sidewalks at each intersection, including ADA ramps for the handicapped, shall be considered a necessary part of the street improvement. Final acceptance of the improvement will not be given until such approach walks are in place. Approach sidewalks shall be constructed to the standard plan Concrete Sidewalk (RS-5). Since sidewalks are under local jurisdiction, the Proprietor should adhere to the requirements established by that governing body. The grade elevation for approach sidewalks shall be approved by the County Engineer. Materials and construction methods shall be in accordance with the County's specifications. If the governing body does not require sidewalks within the subdivision, the Proprietor shall provide the County

Engineer with a letter from the governing body to that effect. When sidewalks are required, the Proprietor shall be responsible for all frontage walks in abutting roads, in easements for County drains, in dedicated public walkways and in areas adjacent to parks.

- d) Materials - All materials in the work shall meet the requirements of their respective specifications and, upon delivery of the project, must be accompanied by the appropriate test slip. The County Engineer shall, at all times, have access to all materials intended to be used in the work. At the request of the County Engineer, samples shall be made available for testing by the County's Testing Office, at no additional cost to the County.
- e) Final Cleanup - The Proprietor shall be responsible for cleaning all sewers, manholes, catch basins, storm water management facilities and other structures affected by the operations in the subdivision before final release. This shall also include the sweeping of all pavement areas and the removal of all excess materials including soil erosion and sedimentation control devices no longer needed, rubbish, equipment, or any other unnecessary deposits or encroachments within the right-of-way of the road. At such time as the final grading and cleanup is conducted and sidewalks, if any, are in place, all structure castings and monuments within the road right-of-way shall be checked for proper grade and, if adjustments are found necessary at this time, the Proprietor shall promptly accomplish same to the satisfaction of the County Engineer. Some of the above items of work may constitute restoration. The Proprietor will be held responsible for repairing or replacing any new work which has been damaged by his operations or the operations of any of his Contractors notwithstanding that his Contractor may originally have constructed some in accordance with approved plans.

8.3.8 Sodding, Seeding and Mulching

- a) Sodding, seeding, and mulching where required shall be done in accordance with the requirements of the County's specifications. Refer to Rule 6.13: *Landscaping*. This work shall be performed only after prior approval by the County Engineer as to time of year of performance and as to the acceptability of the finished grade. This work must be performed under the inspection of the County Engineer.
- b) The grading, seeding, fertilizing and mulching of island areas in cul-de-sacs, eyebrows or divided roadways shall be performed as directed by the County Engineer. The exact time of performance shall also be determined by the County Engineer.

8.3.9 Signs

- a) The Proprietor shall place street name signs at each intersection as per standard plan Street Name (D3-1) Signs (RS-6). The signs shall be the County's standard, or equal, mounted on a post made of square galvanized tubing.
- b) The Proprietor shall place traffic control signs as determined necessary by the County, at locations specified by the County Engineer. Such signs shall be in accordance with the Manual on Uniform Traffic Control Devices. Traffic control signs shall be in place before the road is opened to traffic. The cost of these signs shall be borne by the Proprietor.

- 8.3.10 Guard Rail - Wherever guard rail is required, it shall be constructed in accordance with the County's specifications. A guard rail will normally be required at the stub ends of streets which are temporarily dead-ended at the subdivision limits and shall extend across the entire width of the road right-of-way. At such dead-end street locations, the Proprietor will also be required to place such signs as the County Engineer specifies, informing the public that the street is not a through street.
- 8.3.11 Contingencies - It is not the intent of the above requirements to cover every foreseeable item of work which may be necessary in order to complete the street improvements to the satisfaction of the County Engineer. If it should become necessary, in the opinion of the County Engineer, that certain work omitted from the plans should be performed as part of the improvement, it shall be the Proprietor's obligation to do so upon direction of the County Engineer. Any disagreements between the Proprietor and the County Engineer as to the obligations of the Proprietor shall be presented to the County for its decision in the matter.

RULE 8.4 FINAL PLAT REQUIREMENTS

- 8.4.1 How a Final Plat is Approved - The Land Division Act requires that the final plat be delivered to the County after it has been approved by the Drain Commissioner (or representative). The final plat must be prepared in accordance with the requirements of the Land Division Act which sets forth the size, scale, material and reproduction process. Within fifteen (15) days after receipt of the final plat, the County shall approve or reject the plat. If the County approves the plat, it will transcribe thereon its Certificate of Approval and deliver the plat to the Proprietor. If the County rejects the plat, written notice of the rejection and reasons for the rejection are given to the Proprietor.
- 8.4.2 What is Required Before Approval - Prior to approval of the final plat, the County requires that the highways, streets, alleys and private roads shown on the plat be improved in accordance with the construction standards of the County, including any bridges or culverts where necessary. Such improvements shall be made prior to submission of the final plat for the County's approval. However, the County may approve the plat prior to the making of the necessary improvements, provided the Proprietor files a security deposit with the County to guarantee the improvements after the approval of the plat. The amount of the security deposit will be determined by the Division Permit Engineer, or his designated representative, after a review of the subdivision layout. Such deposit shall be posted prior to submission of the final plat for County approval.
- 8.4.3 Procedures When Street Improvements are Made Before Submission of Final Plat
- a) If the Proprietor desires to make the necessary road improvements required in the proposed subdivision before submission of the final plat, his engineer shall prepare pavement and drainage plans in accordance with *Section 8.5: Construction Plans*, showing in detail the work which will be performed.
- Since the County will not have jurisdiction of the streets in the proposed subdivision under this procedure until after the street improvements have been completed and accepted, it is necessary that the Proprietor make satisfactory arrangements with the Permit Office to provide for the inspection of the project by the County Engineer prior to commencing any work in the subdivision.

These arrangements shall include, among other things, the submission of six (6) sets of approved pavement and drainage plans, four (4) copies of source of materials report, satisfactory evidence of insurance coverage and a copy of the signed contract between the Proprietor and his Contractor covering the work to be performed. This contract shall show the name of the Contractor, the items of work involved including unit prices, the total cost of the project. After this information is received, the Permit Office shall determine the total amount of all permit and plan review fees, bond and inspection deposit required for the permitted work and, in accordance with the financial rules and conditions listed in *Section 2, Permitting Process*, of this manual. After permit issuance and before work commences, the source of materials must be approved by the County Engineer and provisions shall be made for the necessary inspection by the County. Street Protection bonds are necessary to be posted with the County at this time as a guarantee against damage to the subdivision improvements during home construction activities. Posting of this bond does not relieve the Proprietor of the responsibility of damage to the pavement during home construction.

- b) Should other construction within the proposed street right-of-way be performed prior to pavement construction such as site grading, sanitary sewers or water mains, which may result in settlement within the road right-of-way under pavements, driveways or sidewalks, all such construction must also be performed under the inspection of the County Engineer, who will specify the compaction and or backfill methods to be followed. Where inspection is required for this purpose, the cost shall be borne by the Proprietor. Where underground utilities only cross the proposed roads within the subdivision and are otherwise located in separate easements, the Proprietor will pay for inspection on only those sections of the installation within existing or proposed road rights-of-way, unless their installation affects areas within the proposed rights-of-way.
- c) The Proprietor should take whatever precautions deemed necessary to assure that the work performed by the Contractor meets the approval of the County Engineer. The Proprietor shall be held responsible for the fulfillment of obligations to the County, notwithstanding that his Contractor or consulting engineer may be at fault. Home construction shall not be started until all underground improvements and pavements are completed and accepted by the County, with the exception of Rule 8.3.4 (d) as contained within.
- d) Upon completion of improvements to the satisfaction of the County Engineer, the Proprietor may submit the final plat to the County for approval. The County may specify that damaged or lost road right-of-way monuments be restored and payment of any outstanding billings for inspection charges or penalties for pavement deficiencies be made before the plat is approved.

8.4.4 Procedures When Street Improvements Are Made After Approval of Final Plat

- a) If it is the desire of the Proprietor to have the plat recorded before completing the street improvements, he shall enter into an agreement with the County Engineer to guarantee the completion of all improvements in accordance with the County's specifications.
- b) The time of completion of the street improvements under this arrangement shall generally not extend for a period greater than two (2) years from the original date of the agreement. If, after this period, the improvements are not completed, the County may exercise its right under the terms of the agreement

- to forfeit the bond and proceed to fulfill the Proprietor's obligation under such agreement at such time and in such a manner the County may determine appropriate.
- c) Since the County may have jurisdiction of the streets in the subdivision under this procedure before they are improved, the Proprietor and his Contractor are required to take out permits for any and all construction performed within the right-of-way. Construction plans must be approved by the County Engineer, as described in Rule 8.5. Six (6) sets of approved plans together with four (4) copies of a source of materials report and satisfactory evidence of insurance coverage must be submitted when applying for the construction permit. At this time, it will also be necessary to present a signed copy of the contract between the Proprietor and his Contractor, showing the items of work involved, including unit prices, the total cost of the project and the proposed completion date. Inspection deposits and engineering review fees will be computed at this time and payment of same must be made before a permit will be issued. The Proprietor will be held responsible for the actual inspection costs incurred by the County. Work will not be allowed to commence until the source of materials is approved by the County Engineer and construction inspection has been arranged for the project. Street Protection permits are necessary to be posted with the County at this time as a guarantee against damage to the subdivision improvements during home construction activities. Posting of this bond does not relieve the Proprietor of the responsibility of damage to the pavement during home construction.
 - d) The paragraph under Rule 8.4.3 above pertaining to site grading and placement of underground utilities within street rights-of-way prior to construction of pavement, sidewalks and driveways shall also apply here. Home construction shall not be started until all underground improvements and pavement construction is completed and accepted by the County, with the exception of Rule 8.3.4 (d) as contained within.
 - e) In the event the Proprietor makes a cash deposit and/or letter of credit to guarantee the requirements within the plat, the County shall rebate portions of the original deposit as the work progresses. Reductions in the cash deposit will be made in 25% or greater increments. A maximum of one (1) reduction will be made in a yearly period. However, the amount of deposit retained by the County will at no time be reduced to less than the estimated cost of the work still remaining to be completed and any outstanding billings for inspection charges and penalties for pavement deficiencies.

RULE 8.5 CONSTRUCTION PLANS

8.5.1 Pavement and Drainage Plans

8.5.2 After the preliminary plat of the proposed subdivision has been given final approval by the governing body as outlined heretofore, the Proprietor's engineer may proceed with preparation of the pavement and drainage plans for improvement of the streets in the subdivision. These plans shall show plan, profile, cross sections, location of drainage facilities and structures, soil borings, special details and such other information as may be necessary to complete the work. Construction plans shall be prepared by a civil engineer that is licensed to practice within the State of Michigan. All plans shall be referenced to the Wayne County (N.G.V.D. 29) (National Geodetic Vertical Datum of 1929) Bench Mark System. If the subdivision abuts an existing County road, the improvement plans shall also include profiles and cross section of such abutting road. Three (3) sets of prints of pavement and drainage plans shall be submitted to the Permit Office for review. After the plans have been reviewed by the County Engineer, one (1) set of prints will be returned to the Proprietor's engineer marked with corrections or changes which may be required. If approved, a letter will be provided indicating the plan approval. When the improvement plans have been finally approved by the County Engineer, the Proprietor may proceed to make the final arrangements for placing the work under construction, as outlined in Rule 8.4: *Final Plat Requirements*.

8.5.3 It should be noted at this point that if the information given to the County does not represent the conditions as they exist on the ground, and should any revisions be required as a result of this lack of complete information, such revisions shall be made by the Proprietor notwithstanding that the plans had been approved. The Proprietor's engineer shall submit two (2) sets of prints or one (1) set of reproducible "As Constructed" plans including pavement, storm and sanitary sewers and water mains to the County when all road improvements have been completed. This must be done before a final release will be given by the County.

8.5.4 The plans which are prepared by the Proprietor's engineer shall clearly show how the surface drainage will be disposed of from the streets in the proposed subdivision. Where drainage easements are required, the existing ground elevations shall be shown, together with final proposed ditch or storm sewer profiles. In order to provide adequately for the surface drainage of the proposed subdivision, it is often necessary to do work outside the limits of the subdivision and to acquire easements across private property. At all such locations the plans shall indicate the name of the agency which is to have jurisdiction of the sewer and to whom the easement is to be granted. All drainage easements must be finalized before the start of sewer construction will be permitted. In the event the proposed subdivision is a partial development of a larger area and has certain streets terminating at its borders which will be extended when additional portions of the area are subdivided, it will be necessary for each subdivision to be self-sufficient from the standpoint of surface drainage and not be dependent upon work planned to be performed in the next subdivision. The sewer system is to be designed to flow 0.8 full, unless otherwise approved by the County Engineer.

- 8.5.5 Where storm sewers are to be constructed, the Proprietor's construction plans and profiles shall show the location and size of each sewer line and drainage structure in the drainage system, together with elevations and proposed grades. Storm sewers for road drainage purposes shall be located in road right-of-way. The plan sheets shall clearly show the areas which will be contributing storm water runoff to each inlet in the sewer system. Minimum allowable storm sewer size within the right-of-way is twelve inches in diameter. All concrete sewer and culvert pipe shall be designed on the plans as specified in Section 401.02 of the current MDOT Standard Specifications for Construction. Storm sewers within the right-of-way or which will lie outside of County road right-of-way and will contain road drainage shall have internal rubber gaskets of a type approved by the County Engineer.
- 8.5.6 When necessary for drainage purposes, road culverts and driveway culverts shall be installed at locations shown on the plans or as designated by the County Engineer. The pipe used in culverts may be reinforced concrete culvert pipe or corrugated metal pipe and pipe arch. The pipe furnished shall conform to the Current Specifications for Reinforced Concrete, Storm Drain and Sewer Pipe, A.S.T.M. C76, or to the current Specifications for Corrugated Metal Culvert Pipe A.A.S.H.O. M-36 and current MDOT Standard Specifications For Construction.
- 8.5.7 Where underground utilities including storm sewers, sanitary sewers, water mains and corresponding house services must be placed within road right-of-way, such placement shall precede the grading and paving operations. It is incumbent upon the Proprietor to complete properly all compaction and backfilling operations in order to insure that settlement within highway rights-of-way under pavements, sidewalks, or driveways will not occur as a result of such operations. He will be held responsible for any damage due to settlement or substandard construction which may occur prior to the final release of his agreement with the County. The Proprietor's engineer shall submit "as constructed" plans to the County when all storm sewer, sanitary sewer and water main installations are completed.
- 8.5.8 All inlet and catch basin cross-leads including the connecting sewer to the manhole shall be A.S.T.M. C76 Class IV pipe.
- 8.5.9 Soil erosion and sedimentation control devices will not be permitted on pavement surfaces.
- 8.5.10 Footing or sump pump drains can only be connected to a collector sewer that is located outside the County road right of way. Collector sewers which serve yard surface drains and/or footing or sump pump drains may be connected to the road drainage system only at manholes or catch basins which are three feet or more in diameter and which lie on the side of the roadway nearer the collector.
- 8.5.11 Where the subdivision is located adjacent to an improved County primary road, the Proprietor will be required to meet the County's existing construction standards for primary roads. The work within the primary road right-of-way will normally include such items as intersection widening, shoulder widening, deepening and/or relocating existing ditches, and developing an approved grading cross section within the limits as determined by the County. The Proprietor may also be required to construct acceleration, deceleration, and passing lanes on the County primary road, if traffic and safety conditions warrant such measures as determined by the County.

- 8.5.12 Standard Plans – WCDPS Standard Plans for Permit Construction are available on the Wayne County web site. They include general notes, illustrated plans and typical drawings, construction details and road and drainage standards required for permit construction under Wayne County jurisdiction. The Permit Office recommends that these standards be incorporated, unmodified into plans when they are submitted for review.
- 8.5.13 Utility Plans - If utilities are to be located within existing or proposed road right-of-way, the Proprietor's engineer shall present plans of such utilities to the County for approval as to location. If possible such plans should be presented at the same time as road and drainage plans so that all details of construction and location may be checked and properly oriented with each other. In order to avoid conflict, it is important that a careful investigation be made where underground utilities are in proximity to proposed storm sewers, or where they cross each other. Underground utilities should be placed before any pavement is constructed. If the County has taken jurisdiction of the streets in the subdivision, a permit will be required to place the utilities. For permit purposes, six sets of approved plans must be presented to the County, along with a signed copy of the contract between the Proprietor and Contractor showing the contract unit prices and total cost of the work to be done. If jurisdiction of the streets has not been assumed by the County, it will be necessary for the Proprietor to make arrangements with the County for inspection and acceptance of the work performed within the proposed road right-of-way. Before permission is granted to construct water mains or sanitary sewers within road right-of-way, the Proprietor will have to show proof that the construction plans have been approved by the agency which will have jurisdiction of the facility.

RULE 8.6 SOIL BORINGS

- 8.6.1 The Proprietor's engineer shall furnish soil borings which will reveal the true nature of the subsurface conditions. The following minimum information shall be furnished:
- a) Elevation of water table and the date of observation.
 - b) Classification of the subsoils according to the United States Department of Agriculture Textural Chart.
- 8.6.2 Borings located every 250 feet along the street with the locations clearly defined.
- 8.6.3 Borings extending to a depth of at least 5 feet below the top of proposed pavement or existing ground, whichever is lower.
- 8.6.4 Elevation of proposed pavement at the point of each boring.

RULE 8.7 SUBGRADE INSPECTIONS

- 8.7.1 The Proprietor and his engineer should be cognizant of the fact that after the initial rough-grading is completed for any roadway, the County's Testing Office will perform a "Subgrade Inspection". This inspection will determine the adequacy of the subgrade soils. It may be necessary to excavate unsuitable material and backfill with material as directed by the Engineer. The subgrade under drain shall be placed prior to the subgrade inspection.

RULE 8.8 STAKING REQUIREMENTS

8.8.1 The following are the minimum requirements for construction staking:

- a) Sanitary Sewers and Water Mains
 1. Show offset to utility on stakes or "cut sheet".
 2. Alignment stakes must be furnished every 100 feet on straight lines, every 50 feet on radii over 200 feet, and every 25 feet on radii under 200 feet. (Grade stakes as required by the local authority.)
 3. Set a top of casting grade for all structures. In addition, reference top of casting grade to the flow line.
 4. Each structure should be witnessed by two stakes, with a hub, marking the actual location.
- b) Storm Sewers
 1. Show offset to utility on stakes or "cut sheet".
 2. Alignment stakes must be furnished every 100 feet on straight lines, every 50 feet on radii over 200 feet, and every 25 feet on radii under 200 feet. (Grade stakes as required by the local authority.)
 3. Set a top of casting grade for all structures. In addition, reference top of casting grade to the flow line.
 4. Furnish grade stakes every 50 feet on which the flow line grade is written.
 5. Each structure should be witnessed by two stakes, and the direction and size of all pipe entering the structures should also be clearly indicated by use of stakes.
 6. At each deflection in alignment or change in flow line grade, there must be a minimum of two back sight stakes.
- c) Grading
 1. When grading operations involve only small cuts and fills, the placement of pavement grade stakes as described below will suffice.
 2. If the grading operations involve areas of heavy cut and fill, it will be necessary to furnish "rough" grade stakes for alignment and grade at a minimum of 100 feet intervals. The placement of "slope" stakes at appropriate intervals may be substituted for the "rough" grade stakes.
- d) Concrete Pavement Construction
 1. For the construction of the first half of a residential concrete pavement, it will be necessary to establish alignment and grade at 50 foot intervals and at all high points, low points, changes in grade changes in width and ends and mid-points of all radii. In the construction of irregular areas of concrete; i.e., cul-de-sacs, eyebrows, boulevard transitions, intersections, etc., it will be necessary to provide alignment and grade every 25 foot if any radii are under 200 feet. The maximum offset allowed is 5 feet.
 2. The second half of straight areas and the subsequent pours in irregular areas will require grade stakes at the same intervals as described above.

- These stakes should not be placed until immediately prior to grading and forming these areas. Attention should be given in all cases to the existing elevation of the first pour, and adjustments if necessary and as approved by the County Engineer should be made in the grade of the second pour.
3. For the construction of full width concrete pavement in one pour, the frequency of alignment and grade stakes as outlined in item (1) above will prevail, and grade stakes at the same interval will be required for both curb lines.
 4. Indicate on stakes or on the cut sheet the offset and the reference point for the grade; i.e., "5' off b/c (back-of-curb) - 5' off t/c (top-of-curb)".
 5. Contractors are allowed to submit core samples from concrete pours to the County's Division Testing Engineer as a way of expediting approvals of the pours. Contractors intending to use this procedure shall give the Division Testing Engineer three days notice of such intent.
- e) Curb drops are necessary for the placement of the wheelchair ramps for the sidewalks within the subdivision. The location of the key flag is to be staked with the pavement; additionally the location of the curb drops are to be staked at 3 feet from the back of curb.
- f) Stone Base and Stone Base with HMA Surface Construction
1. It will be necessary to establish alignment and grade at intervals of 100 feet for straight areas and at intervals of 50 feet for radii under 200 feet. These stakes may be placed on only one side of the roadway, with a maximum offset of five feet.
 2. It will be necessary to furnish a complete set of alignment and grade stakes on one side of the roadway at the intervals specified above, just prior to the placing of the HMA surface. These stakes should be placed within 3 feet of the edge of the HMA pavement.
- g) HMA Concrete Construction
1. The frequency of alignment and grade stakes as outlined in Item d(1) above will prevail. The addition of the concrete curb & gutter will require additional alignment and grade stakes as outlined in Item d(1) or as directed by the County Engineer.
- h) Frontage Grading Restoration
1. When the frontage grading involves a change in the typical cross section for grading to the Right-of-way line, stakes should be set at the right-of-way line at intervals not to exceed 100 feet. These stakes should clearly indicate the grade to the most appropriate reference point; i.e., sidewalk, ditch or shoulder point grade.
- i) General
1. Where required, the Proprietor's Contractor must furnish the County's inspector with one copy each of all "cut sheets" prior to starting work.
 2. All the above requirements are the necessary minimum and their fulfillment will be a pre-requisite to any work which requires alignment or grade. These requirements will satisfy normal operations but may have to be modified or expanded for unusual construction operations.

RULE 8.9 SUBDIVISION RULES AND REGULATIONS - INDUSTRIAL PLATS

8.9.1 Rules Governing

8.9.2 The preceding rules, regulations, standards and specifications adopted for residential subdivisions also apply to industrial subdivisions. Right-of-way, as well as certain geometric and design details, will be different as pointed out in this section. However, industrial plats are governed by the same Land Division Act as are residential plats. Consequently, all applicable requirements specified for residential subdivisions will govern the processing of industrial subdivisions through Wayne County, except as noted below.

a) Type of Improvement

1. Roads located in an industrial subdivision shall have a minimum right-of-way width of 60 feet, and the roadway shall be constructed with ten (10") inch non-reinforced concrete. Width of pavement shall be 27 feet, measured back-to-back of curbs. This design width is intended to provide for two moving lanes only. No parking will be permitted on the pavement, and such prohibition will be instituted by the County after the pavement is in place. If the Proprietor wishes to provide for parking on the pavement, a minimum width of 44 feet will be required, and the right-of-way shall be 80 feet wide. However, such parking may be removed at such time as the County deems it necessary for safety and operational reasons to do so. The Proprietor is informed that use of the pavement for parking is discouraged for safety reasons. The Proprietor is therefore urged to provide sufficient off-street parking in order to be assured of a permanent solution to this problem.
2. Approaches to primary roads shall be widened to 44 feet for a minimum distance of 100 feet from the primary road right-of-way line. Intersection radii shall be a minimum of 40 feet.
3. Approaches to private driveways shall be constructed of concrete and be of sufficient width to accommodate the type of commercial vehicle which will be using same. Proposed use will determine design, but concrete shall be not less than 8 inches thick. No part of the driveway shall encroach in front of adjoining property, nor be located closer than ten (10') feet from the right-of-way line of an intersecting street.
4. Construction plans shall be prepared in a manner similar to that shown on Typical Plan and Profile (RS-16), for residential streets. Minimum and maximum grades of 0.5% and 5.0%, respectively, will be allowed. Intersection radii shall be 40 feet.

SECTION 9: STORM WATER MANAGEMENT SYSTEMS

RULE 9.1 INTRODUCTION

- 9.1.1 The Wayne County Storm Water Management Ordinance (SWMO) (Enrolled Ordinance No. 2006-1114A) and Administrative Rules (Resolution No. 2006-1114B) assist in compliance with the mutual requirements of the County, local government, and other public agencies under the Federal Phase 2 NPDES storm water regulations. These requirements include the development, implementation and enforcement of programs to manage storm water from new development and re-development. Managing storm water will help to minimize flooding problems, erosion, and loss of or damage to natural resources. A partnership between the County, local government and other agencies that influence development and storm water management will ensure that such a program is effective.

RULE 9.2 APPLICABILITY

- 9.2.1 The following planned or existing developments are subject to the Wayne County Storm Water Management Ordinance:
- a) Residential, commercial and industrial subdivisions
 - b) Mobile and manufactured home parks
 - c) Projects that impact storm water runoff into or around new or existing:
 - 1. Wayne County road rights-of-way
 - 2. County road drainage facilities
 - 3. Storm sewer systems owned, operated or controlled by the County
 - d) Projects that impact storm water into or around a Wayne County drain
 - e) Projects that impact storm water into, on or through properties owned by Wayne County; e.g., County parks.
 - f) Projects developed, designed or constructed by Wayne County
 - g) Multi-unit residential development; e.g., condominium, projects that impact storm water runoff in, around or to watersheds that are included in the County's general permit for municipal storm water discharges.
- 9.2.2 Single unit residential homes are not subject to the requirements of the Wayne County Storm Water Management Program.
- 9.2.3 When renovations, redevelopments or expansions are proposed for sites with existing storm water management systems, these sites shall be subject to the ordinance provisions and may be required to implement improvements to the most practical extent. Each site shall be individually evaluated to determine the scale and scope of required improvements. The change or lack of change to the runoff discharge will not solely determine the need for improvements as mandated by the law.

- 9.2.4 Sites without an existing storm water management system that propose redevelopments, renovations or expansions will be required to provide a storm water management in accordance with the current SWMP. It is the intent of the SWMP to provide a storm water management system for the entire development. Each site shall be individually evaluated for the proper measurements to meet the current SWMP to its most practical extent.
- 9.2.5 Individuals or organizations planning renovations, redevelopments or expansions to their site are required to apply for and obtain a storm water construction approval from the Permit Office prior to commencing onsite work.

RULE 9.3 STORM WATER MANAGEMENT PROGRAM

- 9.3.1 The Administrative Rules of the Wayne County Storm Water Management Ordinance call for the implementation of the Wayne County Storm Water Management Program (SWMP) to provide for the administration and implementation of a storm water management program in Wayne County and to provide performance and design standards for storm water management systems.
- 9.3.2 Under the SWMP, storm water management systems (SWMS) must be selected and designed with flood control and water resource protection as the two main objectives.

RULE 9.4 PERFORMANCE STANDARDS

- 9.4.1 Minimum performance standards that storm water management systems must meet are:
- a) Flood Control
 1. For storm water management systems with drainage areas greater than five (5) acres, the peak flow rate of storm water runoff leaving the development site must not exceed 0.15 cfs/acre for a 100-year storm.
 2. For storm water management systems with drainage areas of five (5) acres or less, the peak flow rate of storm water runoff leaving the development site must not exceed 0.15 cfs/acre for a 10-year storm.
 - b) Water Resources Protection
 1. Storm water management systems must be designed and constructed to remove eighty (80%) percent or more of the total suspended solids load from the development site, as determined on an annual average basis.
- 9.4.2 Wayne County has established general design standards to be met by all storm water management systems, and specific design standards to be met by certain components of storm water management systems. These standards help ensure that each component is designed, operated and maintained such that the performance standards are met. Chapters 6, 7, and 8 of the Standards Manual provide detailed information about standards and guidance for designing storm water management system components to satisfy the performance standards.

- 9.4.3 The Wayne County Storm Water Management Ordinance and Administrative Rules were deliberately written as a performance-based program in order to provide developers with flexibility to design storm water management systems to best fit the situation at each site. Multiple options for systems are specified, including open basins, underground and bio-retention systems. Developers and designers of storm water management systems in Wayne County may select any system or combination of storm water management elements which meet the performance standards provided that the designer's selection: (1) complies with other requirements of the Ordinance, Administrative Rules, and Standards, (2) complies with other applicable local, state and federal requirements, and (3) does not conflict with existing local storm water management plans. Wayne County has published the Storm Water Management Standards Manual to provide applicants with information on the variety of management practices available to meet the performance standards of the Wayne County Storm Water Management Ordinance and Administrative Rules.

RULE 9.5 PLAN AND SUBMISSION REQUIREMENTS

- 9.5.1 Detailed instructions for the submission and preparation of plans for a storm water management permit may be found in Chapter 4 of the Wayne County Storm Water Manual.
- 9.5.2 In addition to the information contained in Chapter 4 of the storm water manual, specific instructions for making a permit application may be found in Section 2: *Permit Process*, along with detailed plan requirements listed in Rule 2.5. A critical element of the plan preparation will require the development of a storm water management plan that includes the following elements:
- a) Storm Sewer Table Calculations
 - b) Storm Sewer Profile (Show hydraulic grade line)
 - c) Drainage area map for each catch basin
 - d) Storm Water Calculations (detention/retention volume and flow restrictor calculations) based on Wayne County Storm Water Management Ordinance.
 - e) Details for detention/retention system, treatment system, flow restrictor and cross sections
 - f) Landscaping for Storm Water Management System
 - g) Storm Water Management System Exhibits. Copies of exhibits A and B shall be submitted on legal or letter size paper.

RULE 9.6 PERMIT REQUIREMENTS

- 9.6.1 The Permit Holder is responsible to obtain a resolution from the local municipality to maintain the proposed storm water management system and its facilities, whereby the local municipality:
- a) Assumes jurisdiction over and accepts responsibility for long term maintenance of the storm water management system pursuant to the Wayne County Ordinance, the Administrative Rules, the approved construction plan and the storm water construction plan approved and issued by Wayne County.
 - b) Authorizes a designated local municipality official to sign the permit.

- 9.6.2 A Certified copy of the resolution shall be submitted to the Permit Office as a condition for the release of the permit.
- 9.6.3 An Engineer's Certificate of Construction certifying that the construction of the storm water management facilities have been completed and the improvements are in conformance with the construction plans approved and the permit issued by the WCDPS. The Engineer's Certificate shall be submitted to the Permit Office on an unaltered Wayne County form as a condition for the release of the permit.
- 9.6.4 A final inspection and acceptance of the complete storm water management system shall be required prior to release of the permit. Prior to the inspection, the system shall be cleaned and all sediment removed.

RULE 9.7 STORM WATER OUTLET REQUIREMENTS

- 9.7.1 The outlet for the SWMS shall include adequate storm water outlet.
- a) A storm water outlet shall be deemed inadequate if its capacity exceeds its reasonable share of the maximum capacity of the downstream watercourse or closed conduit, as per SWMP and as determined by the Permit Office in its sole reasonable discretion.
- b) If the outlet passes through a privately owned property(s) prior to discharge to a County drain, watercourse or closed conduit, the Applicant shall be required to secure the outlet. A legal agreement such as a Drainage Easement or Letter of Acknowledgment and Approval shall be obtained from such owner(s).
- 9.7.2 The Applicant may be required to design and construct improvements to the downstream County drain, watercourse or closed conduit. The Permit Office shall determine the extent to which downstream improvements may be required.
- 9.7.3 The allowable discharge shall be as per the SWMP or a local municipality requirement, whichever is the most stringent.
- 9.7.4 The SWMS shall be designed for the entire site. Offsite drainage that cannot be redirected around a site shall be accounted for in the design.

RULE 9.8 MAINTENANCE

- 9.8.1 The Wayne County Ordinance and Administrative Rules require storm water management systems to be maintained in perpetuity to ensure that they function effectively as designed. A public entity, such as a local unit of government or a drainage district established under the Michigan Drain Code, must assume long-term maintenance responsibility for storm water management systems that require a Wayne County storm water construction approval. This maintenance responsibility must be assumed through a legally binding instrument (such as an ordinance, resolution, contract or equivalent instrument approved by the County) as a condition of final project approval.

- 9.8.2 Long-term maintenance generally begins when construction of the storm water system is complete and the storm water construction approval is released. The public entity may perform the long-term maintenance of a storm water management system itself, or it may designate another entity, such as a homeowner's association, condominium association or property owner, to undertake this responsibility. However, even if the responsibility for maintenance activities is designated to another entity, the public entity identified in the long-term maintenance permit remains ultimately responsible for ensuring that the required maintenance is performed.

SECTION 10: ANNUAL PERMITS

RULE 10.1 AUTHORIZED APPLICANTS

- 10.1.1 Authorized Applicants for annual utility permits, for purposes of using County road right-of-way, shall conform to the criteria detailed in Rule 2.4: *Applications by Private and Public Utilities*.

RULE 10.2 GENERAL CONDITIONS

- 10.2.1 Annual permits for public and private utilities are issued for a period of one (1) year and allow a limited scope of activities to be performed within the Wayne County right-of-way, easements or land.
- 10.2.2 The annual permit shall remain in force from January 1st through December 31st of the annual year or until such time as written notice has been received of its cancellation by either party, subject to the payment of all annual fees and monthly billings in accordance with the conditions on or attached to the permit.
- 10.2.3 Once an annual permit is issued by Wayne County, it is renewed in perpetuity; subject to annual authorization and annual payment of any fees and inspection costs charged under the permit. By October 31st of each year, the next year's annual permit shall be sent to current Permit Holders for signature. The permit shall be returned signed by an authorized representative and shall be accompanied by any applicable payment of fees before the permit is deemed executed and valid.
- 10.2.4 All actual inspection costs, including overtime, supervision, testing of materials and emergency work, if required, shall be billed to the Permit Holder.
- 10.2.5 The Permit Holder shall comply with all requirements of the Miss Dig Statute, MCL §460.701 et seq., as amended. The Permit Holder shall call "MISS DIG", at (800) 482-7161, before starting any underground work. The Permit Holder assumes all responsibility for damage to or interruption of underground utilities.
- 10.2.6 The Permit Holder shall call Wayne County Department of Public Services' Traffic Operations Office, at (734) 955-9920, before starting any emergency underground work in the vicinity of any traffic signal equipment owned, operated or maintained by Wayne County. For non emergency work, the Permit Holder shall call (734) 955-2154 at least 72 hours, excluding Saturdays Sundays and holidays, but not more than twenty-one (21) calendar days, before starting work.
- 10.2.7 Traffic shall be maintained in accordance with the current Manual on Uniform Traffic Control Devices and Wayne County Specifications.
- 10.2.8 A current copy of the, "Wayne County Rules, Specifications and Procedures for Construction Permits" shall be incorporated as a general condition of the permit.

RULE 10.3 INSURANCE

- 10.3.1 The general liability insurance coverage shall be in amounts not less than \$1,000,000 each occurrence and \$2,000,000 general aggregate. Proof of automobile liability shall be in amounts not less than \$1,000,000 combined single limit for each accident, bodily injury per accident, and property damage per accident, and in an amount not less than \$1,000,000 for bodily injury each person, each occurrence and property damage liability \$1,000,000 each occurrence.
- 10.3.2 The insurance shall cover a period not less than the term of the permit and shall provide that it cannot be cancelled or reduced without thirty (30) days advance written notice to Wayne County, by Certified mail, first-class, return receipt requested. The thirty (30) days shall begin on the date when the County received the notice, as evidenced by the return receipt.
- 10.3.3 The WCDPS shall be a Certificate Holder on the policy of insurance worded as, "Wayne County, and its officers, agents and employees are named as additional insured parties."
- 10.3.4 Should insurance coverage be cancelled or reduced below acceptable limits, or allowed to expire, the authorization to continue work under the permit shall be suspended or revoked and shall not resume until new insurance is in force and accepted by Wayne County.

RULE 10.4 INDEMNIFICATION

- 10.4.1 The Permit Holder shall defend and hold harmless Wayne County, the Department of Public Services, its officials and employees against any and all claims, suits and judgments to which Wayne County, the Departments, its officials and employees may be subject and for all costs and actual attorney fees which may be incurred on account of injury to persons or damage to property, including County property. The Permit Holder shall provide this indemnity whether the negligence is due to the Permit Holder or to joint negligence of the Permit Holder and the County, arising out of any and all activities performed under the permit or in connection with work not authorized by the permit, or resulting from the failure to comply with the terms of the permit, or arising out of the continued existence of the work product that is subject to the permit.

RULE 10.5 ANNUAL PERMITS FOR AERIAL AND UNDERGROUND

10.5.1 Scope of Work – Annual Utility Permits are limited to the following work:

- a) Maintenance – Tree trimming for trees within the right-of-way; outside of the right-of-way, tree trimming requires the permission of the abutting property owner. Within the right-of-way, no tree shall be removed without Wayne County permission.
- b) Repair of existing underground conduit, buried cable, buried wire and pipe, except under pavement.
- c) Replacement of defective or degraded buried cable sections with like size up to fifty (50') feet in length is allowed. Plans shall be submitted for all cable section replacement. Replacement cable may not be placed outside the immediate area (more than two (2') feet away from existing location centerline) without special permission.
- d) Insertion of plastic pipe inserts or lining through existing mains (gas, water or sewer) in connection with maintenance and renewal programs not requiring pavement cuts.
- e) Installation of buried cable to an existing pole in an existing pole line. This may include crossing of road by squeeze boring or pushing one pipe not more than two (2") inches in diameter. Refer to Rule 4.15: *Squeeze Boring*.
- f) Installation, removal or replacement of load coil case on existing buried cable or wire; including loop from main trench at one location only.
- g) Replacement of up to 1,000 feet open wires, cables, single pair rural wire and/or drop wire with multiple line wire or small cable on same pole line, not extending beyond the present wire. If replacing lengths greater than 1,000 feet, a separate permit shall be required.
- h) Repair and maintenance of open wire, multiple type wire, drop wire and/or aerial cable.
- i) Replacement or addition of up to two (2) poles within or beyond an existing pole line, provided that poles are not relocated laterally and that no tree work is required because of increased pole height.
- j) Repair and/or replacement of leaking, distressed or otherwise damaged sections of up to fifty (50') feet of existing gas main, except under pavement. In such cases, the Permit Holder shall backfill and restore in accordance with Wayne County Specifications.
- k) Addition or replacement of guys and anchors to poles; new or replacement equipment shall run parallel to or away from the road centerline.
- l) Installation of aerial drops which do not require a new pole within road right-of-way outside of the existing pole line, or installation of aerial drops along with an intermediate pole in an existing pole line to facilitate installing an aerial drop.
- m) Crossing beneath paved roads for underground house service. Any such crossing shall be accomplished by squeeze bore, auger or moleing (a single forward boring system without removal of soil and a return pass of reamer or shank with underground cable, water or gas line attachment) as follows:
 1. Maximum diameter of auger shall be 2 ½ inches with no casing
 2. Maximum width of bore trench shall be 18 inches

3. Minimum depth below paved surface shall be 7 feet
 4. Minimum depth below ditch bottom shall be 6 feet
 5. Minimum distance from edge of paved or traveled way surface to bore pit shall be 10 feet, except for subdivision roads which shall be 5 feet from back of curb.
- n) System tie-ins from streets under municipal jurisdiction to near side of gas mains installed per permit within Wayne County's right-of-way, except under pavement.
 - o) Crossing beneath gravel roads for underground house service; such crossings may be made by trenching. In such cases, the Permit Holder shall backfill and restore to Wayne County Specifications.
 - p) Inspection and maintenance of systems, valves and meters and their associated manholes.
 - q) Conduct soil borings and perform survey work outside of the traveled way of the road.
 - r) Installation of gas service lines not more than two (2") inches in diameter to residential and commercial customers (near side only; not under pavement).

10.5.2 All General Conditions listed in Rule 10.2 shall be incorporated as part of the conditions of the Annual Maintenance Permit for Aerial & Underground.

10.5.3 Special Conditions for Aerial and Underground

- a) A brief plan review shall be required for any service connection that serves more than a single residential customer. Plans approved for construction under the annual permit will be stamped approved. Proposed plans exceeding the allowable scope for work under the annual permit will be processed as a general utility review and a separate permit shall be required.
- b) Emergency repairs may be made provided notification is given to the Permit Office as soon as possible, and no later than the next Wayne County business day.
- c) Immediate notification must be given for emergency (public safety, health and welfare) operations which involve cutting of pavement and an individual permit shall be obtained by the Permit Holder as soon as possible.
- d) The Permit Office shall be notified of normal repairs in advance and in writing. The Permit Holder shall provide the approximate location and date of all work to be performed.
- e) Utility companies shall submit reports monthly to the Permit Office listing location, date and type of activity for each activity performed under the blanket permit for that month.
- f) Poles, conductors, lead guy wires and anchors may be added within an existing lead.
- g) An existing lead is defined as an established line or conduit, including poles or appurtenances within the physical limits of that line. If a conductor is extended beyond the existing lead, individual permits are required, except as noted below. It is not intended that changing poles or location of poles within an existing lead necessitates an individual permit. However, a significant reconstruction; i.e., converting poles to towers or replacing several poles for a large overhead utility run, shall not be performed under an annual permit.

Routine maintenance may be performed on all existing aerial facilities.

- h) Service drops requiring a pole across the road and outside the lead may be performed under an annual permit.
- i) Upgrading a two-wire to a three-wire may be performed under an annual permit only if it provides for a single service.
- j) Individual permits shall be obtained if there is parallel work within the right-of-way made from a particular service drop.
- k) The allowable use of an annual permit for underground utility operations is limited and very specific. The annual permit provides for underground individual services only up to three (3") inches in diameter if crossing pavement. Any activities not within the scope of work under the annual permit will require a construction permit. Pavement cuts are not allowed for transverse crossing under an annual permit.
- l) Where two utilities jointly occupy a pole or facility with a bona fide joint use agreement, each party shall be required to secure its own permit.

RULE 10.6 ANNUAL PERMITS FOR PIPELINE UTILITIES

10.6.1 Scope of Work – Annual Utility Permits are limited to the following work:

- a) Excavation within the right-of-way for the purpose of making repairs, inspection and routine maintenance of the utility owned facilities.

10.6.2 All General Conditions listed in Rule 10.2 shall be incorporated as part of the conditions of the Annual Maintenance Permit for Pipeline Utilities.

10.6.3 Special Conditions

- a) Emergency repairs may be made provided notification is given to the Permit Office as soon as possible or no later than the next Wayne County business day.
- b) Immediate notification must be given for emergency (public safety, health and welfare) operations which involve cutting of pavement and a construction permit shall be obtained by the Permit Holder as soon as possible.
- c) The Permit Office shall be notified of normal repairs in advance and in writing. The Permit Holder shall provide the approximate location and date of all work to be performed.
- d) Utility companies shall submit reports monthly to the Permit Office listing location, date and type of activity for each activity performed under the blanket permit for that month.
- e) A separate permit will be required for any operation where pavement must be broken.

RULE 10.7 ANNUAL PAVEMENT RESTORATION PERMIT

- 10.7.1 The Annual Permit authorizes the Permit Holder to occupy the Wayne County road rights-of-way for the purpose of making final pavement repairs on utility cuts due to the repair and routine maintenance of facilities under its jurisdiction listed in Rules 10.5.1 and 10.6.1 above.
- 10.7.2 At least seventy-two (72) hours prior to construction, the permit holder shall submit a written request for final pavement repairs including the date, location, construction plans and annual permit number to the Permit Office.
- 10.7.3 The final area of any pavement to be replaced and/or overlaid shall be determined and marked out by the Permit Office.
- 10.7.4 All General Conditions listed in Rule 10.2 shall be incorporated as part of the conditions of the Annual Permit for Pavement Restoration.

SECTION 11: MUNICIPAL PERMITS EXECUTED BY RESOLUTION

RULE 11.1 AUTHORIZED APPLICANTS

- 11.1.1 Permits issued to municipalities and other governmental agencies, for purposes of using the County road right-of-way, require a resolution from the governing body before the permit is deemed fully executed. An authorized applicant for any annual municipal permit shall be a city, township or village within Wayne County. An authorized applicant for a Maintenance permit may be a municipality or other governmental agency such as a school district or other governing authority.
- 11.1.2 Permits issued to municipalities and government agencies are generally issued for the following activities:
- a) Municipal Maintenance
 - b) Road Closure for special events; i.e., parades, marathons and festivals
 - c) Maintenance: Storm Water Management System, Tower Clocks, etc.
 - d) Banners
 - e) Bike Paths, non motorized paths
 - f) Landscaping (refer to Section 10: *Landscaping*)

RULE 11.2 GENERAL CONDITIONS

- 11.2.1 Municipalities applying for the permit shall execute a resolution by its governing body wherein the governing body:
- a) Agrees to fulfill all permit obligations and conditions
 - b) Indemnifies, hold harmless and defend Wayne County and its officials and employees against any and all damage claims, suits or judgments of any kind or nature arising as a result of the permitted activity.
 - c) Designate and authorize an appropriate official of the requesting municipality to sign the permit on its behalf.
- 11.2.2 A model copy of the resolution, "Model Community Resolution Authorizing Execution of Annual Permits" may be obtained from the Permit Office.
- 11.2.3 A Municipal permit is executed only when it is signed by the person designated on the resolution and returned to the Permit Office with the resolution that was passed by the governing body.
- 11.2.4 Municipal permits are not subject to permit fees or plan review costs except for work conducted under the Pavement Restoration Permit where plan review costs are billed.
- 11.2.5 When County inspection services are required, all inspection costs, including overtime, supervision, testing of materials and any required emergency work or restoration shall be billed to the municipality or governing body on a monthly basis.
- 11.2.6 Traffic shall be maintained in accordance with the current Manual on Uniform Traffic Control Devices and Wayne County Specifications.

- 11.2.7 A current copy of the, "Wayne County Rules, Specifications and Procedures for Construction Permits" shall be incorporated as a general condition of the permit.

RULE 11.3 ANNUAL MUNICIPAL MAINTENANCE PERMIT

- 11.3.1 The Annual Permit authorizes the municipality to occupy Wayne County road rights-of-way for the purpose of inspection, repair and routine maintenance of the facilities listed below that are under its jurisdiction.
- 11.3.2 An Annual Permit for Special Events shall be issued under a blanket resolution passed by the governing body which incorporates the provisions listed in Rule 11.2.1 above. The annual resolution shall cover all maintenance activities occurring on County roads or rights-of way, within the year of the annual permit.
- 11.3.3 The annual permit shall remain in force from January 1st through December 31st of the annual year.
- 11.3.4 Once an annual permit is issued by Wayne County, it is renewed in perpetuity; subject to annual authorization. By October 31st of each year, the next year's annual permit shall be sent to the governing body for signature. The permit is deemed executed only when the permit is signed by the person designated on the resolution, accompanied with the resolution passed by the governing body and is returned to the Permit Office.
- 11.3.5 Scope of Work - The following work is authorized under the Annual Maintenance Permit:
- a) Sanitary Sewers
 - 1. Inspection, repair and routine maintenance of the facilities under its jurisdiction
 - b) Water Main and installation of 2" pipe
 - 1. Inspection, repair and routine maintenance of the facilities under its jurisdiction
 - 2. Water service connection with 2" diameter pipe or less, serving single customer
 - c) Dust Palliative Applications
 - 1. Dust palliative treatment shall be with calcium magnesium chloride in accordance with Wayne County specifications.
 - 2. The municipality shall designate each road to be treated with dust palliative and pay the Contractor for all materials and service.
 - d) Sidewalk
 - 1. Existing sidewalks may be repaired or replaced at existing alignment on existing grade.
 - 2. A separate permit will be required for the construction of a new sidewalk, for the replacement of an existing sidewalk on a new alignment or grade or for the construction of new sidewalk ramps to the County road.
 - e) Street Sweeping
 - 1) Street sweeping within the County road rights-of-way shall be performed during daylight hours only.

- 11.3.6 All General Conditions listed in Rule 11.2 shall be incorporated as part of the conditions of the Annual Permit for Municipal Maintenance.
- 11.3.7 Permit Conditions
- a) A separate permit will be required for final pavement repairs when pavement is broken while making emergency repairs under the annual permit.
 - b) Reports indicating all work performed or that no work was performed under the permit shall be provided to the Permit Office at the end of each month.
 - c) A separate permit will be required for any operations performed under the following conditions for Water and/or Sanitary related work:
 1. For all water service connections larger than a two inch (2") diameter
 2. For any water service connection that serves more than one customer
 3. Whenever work is to be performed in a new subdivision
 4. For any sanitary sewer service connection
 - d) For any water or sanitary service connection where County pavement must be broken, the Permit Holder shall give the Wayne County Roads Division (313-955-9920) seven (7) days prior notice to allow for preparation of the roads to be treated and for inspection of the dust palliative material.
 - e) For non-emergency work, where the County pavement must be broken, a separate permit shall be required.
 - f) Any work not covered under the annual scope of work and conditions above shall require a separate permit. Refer to Section 2: *Permitting Process*, in the Wayne County Rules, Specifications and Procedures Construction Permits.

RULE 11.4 ANNUAL PAVEMENT RESTORATION PERMIT

- 11.4.1 The Annual Permit authorizes the municipality to occupy the Wayne County road rights-of-way for the purpose of making final pavement repairs on utility cuts due to the repair and routine maintenance of facilities under its jurisdiction listed in Rules 10.5.1 and 10.6.1 above.
- 11.4.2 An Annual Permit for Pavement Restoration shall be issued under a blanket resolution passed by the governing body which incorporates the provisions listed in Rule 11.2.1 above. The annual resolution shall cover all final pavement restoration activities occurring on County roads or rights-of way, within the year of the annual permit.
- 11.4.3 The annual permit shall remain in force from January 1st through December 31st of the annual year.
- 11.4.4 Once an annual permit is issued by Wayne County, it is renewed in perpetuity; subject to annual authorization. By October 31st of each year, the next year's annual permit shall be sent to the governing body for signature. The permit is deemed executed only when the permit is signed by the person designated on the resolution, accompanied with the resolution passed by the governing body and is returned to the Permit Office.

- 11.4.5 At least seventy-two (72) hours prior to construction, the Permit Holder shall submit a written request for final pavement repairs including the date, location, construction plans and annual permit number to the Permit Office.
- 11.4.6 The final area of any pavement to be replaced and/or overlaid shall be determined and marked out by the Permit Office.
- 11.4.7 All General Conditions listed in Rule 11.2 shall be incorporated as part of the conditions of the Annual Permit for Pavement Restoration.

RULE 11.5 ANNUAL PERMIT FOR SPECIAL EVENTS (ROAD CLOSURES & BANNERS)

- 11.5.1 The Annual Permit for Special Events, issued only to the governing body of a city, township, or incorporated village, grants permission to
 - a. temporarily close a County road for a reasonable length of time for a parade, marathon, filming productions, festival or similar activity
 - b. use a County road as a detour for traffic around such activity taking place on a non-county road
 - c. place a temporary banner within the County right-of-way
- 11.5.2 An Annual Permit for Special Events shall be issued under a blanket resolution passed by the governing body which incorporates the provisions listed in Rule 11.2.1 above. The annual resolution shall cover all road closures, road detours and banner activities occurring on County roads or rights-of way, within the year of the annual permit.
- 11.5.3 The annual permit shall remain in force from January 1st through December 31st of the annual year.
- 11.5.4 Once an annual permit is issued by Wayne County, it is renewed in perpetuity; subject to annual authorization. By October 31st of each year, the next year's annual permit shall be sent to the governing body for signature. The permit is deemed executed only when the permit is signed by the person designated on the resolution, accompanied with the resolution passed by the governing body and is returned to the Permit Office.
- 11.5.5 As a condition of this Annual Permit for Special Events, the Permit Office requires that each municipality provide a written request at least ten (10) business days prior to the commencement of a road closure and/or banner placement. The request for County road closure and/or detour shall follow the instructions listed in Rule 11.5.6 below and the request for banner placement within the County right-of-way shall follow the instructions listed in Rule 11.5.7 below.

- 11.5.6 **Road Closure/Detour** - The written request to close, partially close or use as a detour a County road for a parade, marathon, filming productions, festival or similar activity shall be made on municipal letterhead and shall include the following information:
- a) The nature of the activity for which the permit is requested;
 - b) The dates and times it is proposed to close and reopen the road to traffic;
 - c) The roads and/or portions of roads to be closed;
 - d) The proposed detour route or routes, including a map if necessary to clearly describe the proposed detour.
- 11.5.7 **Banner Placement** - The written request to erect a banner within the County road right-of-way shall be submitted at least ten (10) days in advance of the proposed installation and contain the following information:
- a) The activity in connection with which the banner is to be placed;
 - b) The location of the proposed installation, including distance to overhead traffic control devices;
 - c) A description of the banner, including any legend or symbol thereon;
 - d) The height of any overhead banner from the road surface to its lowest point;
 - e) The dates the banner will be erected and removed. This period shall not exceed a time specified by the Permit Office. An acceptable period of time for banners to be in place is a total of three (3) weeks, except for Holiday decorations which may be in place for eight (8) weeks;
 - f) Such other information as the Permit Office may deem necessary.
- 11.5.8 Upon approval of the request, the Permit Office shall issue an addendum to the permit authorizing the special event activities and/or banner placements.
- 11.5.9 All General Conditions listed in Rule 11.2 shall be incorporated as part of the conditions of the Annual Permit for Special Events.
- 11.5.10 Permit Conditions
- a) All roads temporarily closed under the permit shall be County local roads, as certified under Act 51, P.A. 1951, with residential frontage exclusive of section line (mile roads), quarter section line (collector roads) and border line roads.
 - b) Road closures authorized under the permit shall not be for the purpose of allowing private commercial activities such as advertising or the sale of goods, wares or produce.
 - c) The Permit Holder, at no expense to the County, shall provide any necessary police supervision.
 - d) Road closures authorized under the permit shall not have the effect of depriving property which is not adjacent to the section of road being closed from continuous uninterrupted access to the main public road system.
 - e) The closure or partial closure of the road and any detour route selected shall allow alternative routes for the reasonably safe and convenient movement of traffic.
 - f) Road closures authorized by the permit shall not exceed the duration entered on the permit, generally between 24 and 72 hours.

- g) The Permit Holder shall, at no expense to the County, install, maintain and remove all traffic control devices required for the temporary road closure and detour routes.
- h) All traffic control devices installed in conjunction with the road closure or partial closure and any detour route shall conform to the provisions of the current Manual on Uniform Traffic Control Devices (MUTCD).
- i) The Permit Holder shall, at its sole expense, immediately following conclusion of the permitted activity clean up and remove any litter, debris, refuse, etc., placed or left in the right-of-way as a result of the permitted activity. In the event that the Permit Holder fails to clean up as required, causing Wayne County to do the cleanup work, the Permit Holder shall reimburse Wayne County any costs incurred to restore the right-of-way.
- j) The Permit Holder acknowledges that the County may, at its sole discretion, deny any road closure proposed under the permit.
- k) The Permit Holder shall provide at least a ten (10) business day notification of each road closure authorized under the permit prior to the commencement of a road closure. The notification shall state the section of road to be closed and describe detour routes. The notification shall also indicate the time and date of the road closure as well as the time and date when the road shall be reopened to traffic. The written notification shall be sent to the following offices:

Wayne County Permit Office 33809 Michigan Ave Wayne MI 48184	Wayne County Division of Roads Traffic Operations Office 29900 Goddard Road Romulus MI 48242
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- l) Any banner shall be designed, installed and located so as to avoid danger to those using the road or undue interference with the free movement of traffic or maintenance operations.
- m) Any banner shall be securely fastened so as to have a minimum bottom height of 18 feet above the surface of the traveled way, shall be placed no closer than 100 feet in advance of flashing beacons or traffic control signals and shall be placed so as to not obstruct a clear view of traffic lights, signals or other traffic control devices.
- n) Banners shall not be attached to trees.
- o) No banner shall have displayed thereon any legend or symbol which may in any way be construed to advertise or otherwise promote the sale of or publicize any merchandise or commodity, or which may be construed to be political in nature.
- p) No banner shall have displayed thereon any device that is or purports to be an imitation of, resembles or may be mistaken for a traffic control device or which attempts to direct the movement of traffic.
- q) No banner shall be above ground figures, signs or other structures, objects or devices whether lit or unlit.
- r) Decorations shall not include flashing lights, reflective materials or other devices that may distract motorists.
- s) Any authorization may be revoked by the Permit Office if erection or installation of a banner becomes dangerous to those using the road or unduly interferes with the free movement of traffic or maintenance operations.
- t) The city, village or township making application shall faithfully fulfill all permit requirements.

RULE 11.6 MAINTENANCE PERMITS

- 11.6.1 Maintenance permits are issued to a municipality or other governing body in conjunction with other permitted work where facilities under the municipality's jurisdiction are constructed. A maintenance permit authorizes the municipality to occupy the County road right-of-way for the purpose of inspection, repair and routine maintenance of specific facilities listed in the permit under its jurisdiction.
- 11.6.2 Maintenance permits are issued for the following facilities:
- a) Storm Water Management Systems
 - b) Decorative sidewalks, bike paths or non motorized paths
 - c) Streetscapes
 - d) Such other facilities as the Permit Office may require
- 11.6.3 A Maintenance permit requires a resolution that is passed by the municipality or governing body agreeing to accept jurisdiction and maintenance responsibilities for the specified facility constructed under a County permit and which incorporates the indemnification provisions listed in Rule 11.2.1.
- 11.6.4 A Maintenance permit may be issued for a privately owned facility; i.e., a pipe crossing under a road right-of-way, if the municipality accepts jurisdiction and maintenance responsibilities and incorporates the indemnification provisions in Rule 11.2.1.
- 11.6.5 Maintenance permits are intended for long-term maintenance purposes and are issued in perpetuity.
- 11.6.6 All General Conditions listed in Rule 11.2 shall be incorporated as part of the conditions of the Maintenance Permit.

RULE 11.7 BIKE PATH PERMITS

- 11.7.1 A right-of-way occupancy permit is required to construct, relocate or resurface a bicycle path within a County road right-of-way.
- 11.7.2 An Authorized Applicant shall be the municipality within which the project is located, the owner(s) of the property abutting the right-of-way where the bike path is proposed or an agent of the abutting property owner(s).
- 11.7.3 Permit Requirements
- a) Engineering plans for the proposed bike path, complying with plan requirements detailed in Rule 2.5 of this manual, shall be prepared and sealed by a registered professional engineer and shall be reviewed by the Permit Office prior to issuance of a permit.
 - b) Bike paths shall comply will AASHTO requirements.
 - c) Unless approved otherwise, bicycle paths shall be located a minimum of six (6') feet from the planned future curb line of the County road. This will generally require the availability of right-of-way to the Master Plan width.
 - d) Bicycle paths shall be located and constructed to (1) avoid interference with the

safe movement of motor vehicles and pedestrians, (2) avoid disruption of road drainage facilities, and (3) not create drainage problems within the right-of-way.

- e) Bicycle paths are permitted in lieu of sidewalks, but not in addition to sidewalks. This must be approved by the city or township.
 - f) Any pavement construction or sign installation which encourages bicycle use on a County road pavement or shoulder is not permitted.
 - g) Traffic control devices; e.g., bike path pavement markings and signs, shall be required at all County road crossings and shall be reviewed and approved by the County prior to issuance of a permit.
- 11.7.4 A Bike Path permit requires a resolution that is passed by the municipality or governing body agreeing to accept jurisdiction and maintenance responsibilities for the specified facility constructed under a County permit and which incorporates the indemnification provisions listed in Rule 11.2.1.
- 11.7.5 All General Conditions listed in Rule 11.2 shall be incorporated as part of the conditions of the Bike Path Permit.

RULE 11.8 NON MOTORIZED PATH PERMITS

- 11.8.1 A right-of-way occupancy permit is required to construct, relocate or resurface a non motorized path within a County road right-of-way.
- 11.8.2 An Authorized Applicant shall be the municipality within which the project is located, the owner(s) of the property abutting the right-of-way where the non motorized path is proposed or an agent of the abutting property owner(s).
- 11.8.3 A Non-Motorized Path permit requires a resolution that is passed by the municipality or governing body agreeing to accept jurisdiction and maintenance responsibilities for the specified facility constructed under a County permit and which incorporates the indemnification provisions listed in Rule 11.2.1.
- 11.8.4 All General Conditions listed in Rule 11.2 shall be incorporated as part of the conditions of the Non Motorized Path Permit.

SECTION 12: ENCROACHMENT PERMITS

RULE 12.1 PROCEDURES

- 12.1.1 An application for an encroachment permit shall be submitted by the owner of record of that property adjoining the right-of-way under which the proposed projection is requested.
- 12.1.2 Signs pertaining only to articles produced or sold or services rendered on the adjoining property shall be allowed. Only one sign for each business establishment shall be considered. No flashing or moving signs shall be allowed.
- a) All encroachments shall be from buildings or other supporting structures located outside the right-of-way.
 - b) All encroachments in existence prior to the adoption by Wayne County of these regulations and standards, which are in violation of Wayne County standards, shall be allowed to continue as non-conforming encroachments until such time as removal or replacement takes place, or at such time as Wayne County has a construction project for the widening and improvement of the road in front of where the encroachment exists. When renewal or replacement takes place or a road construction project is scheduled, the owner will be required to conform to Wayne County's regulations and standards. The following standards shall be adhered to:
 1. **AWNINGS:** Retractable and fixed awnings shall not project more than 8 feet (8') into the highway, but in no case closer than six (6') feet to the curb line or eighteen (18') feet from pavement edge in a case where the pavement is not curbed. The lowest part of the awning shall not be less than seven (7') feet above the sidewalk.
 2. **MARQUEES:** Marquees shall not extend over the sidewalk more than one half the width of the sidewalk or in any case more than eight (8') feet beyond lot line. The lowest part of the marquee shall be at least eight (8') feet above the sidewalk level at the building line.
 3. **ARCHITECTURAL DECORATIONS:** A projection from a building which is meant to enhance the appearance of the building, such as a false mansard roof, may be allowed to extend into the right-of-way by not more than three (3') feet with a minimum under-clearance above the sidewalk of eight (8') feet. Any projection of four (4") inches or less need not be restricted as to height above the sidewalk. The main roof of the building shall not project into the right-of-way. The placement of any facing material on an existing building such as aluminum, brick, plastic, etc., which results in an encroachment of air space of less than two (2") inches need not have Wayne County approval or permit;
 4. **SIGNS AND FLOODLIGHTS ATTACHED TO BUILDINGS:** Signs and floodlights attached to buildings may project not more than six (6') feet into the road right-of-way. They shall have a minimum under-clearance of eight (8') feet above the sidewalk. Wall signs may not project more than eighteen (18") inches and must have a minimum under-clearance above the sidewalk of eight (8') feet. Where the right-of-way margin between the

property line and pavement edge is less than ten (10') feet, only wall type signs will be permitted;

5. **SIGNS AND FLOODLIGHTS ATTACHED TO POLES:** Signs and floodlights projecting from poles shall be located completely outside the right-of-way unless, by so doing, the sign will be obstructed from view by adjacent buildings. In such cases, the sign may be allowed to project beyond the lot line not more than six (6') feet from a pole located completely outside of the right-of-way. A minimum under-clearance of eight (8') feet above the sidewalk must be maintained. Where the right-of-way margin between the property line and pavement edge is less than ten (10') feet, no projections will be permitted.
6. **BARBER POLES:** Barber Poles, when affixed to buildings, may project beyond the lot line not more than eighteen (18") inches with an under-clearance above the sidewalk a minimum of seven (7') feet.
7. **MISCELLANEOUS:** Standards for any street projections not covered above, will be determined on an individual basis by the Permit Office.

12.1.3 Wherever more restrictive requirements are imposed by State statute or by local ordinances other than those adopted by Wayne County, the owner shall comply with such other provisions of law or ordinances.

12.1.4 An application for an encroachment permit must be submitted to the Permit Office on a Wayne County Permit Application form. The Applicant shall attach the following to the encroachment permit application:

- a) A copy of the title, showing proof of ownership of the property
- b) A sketch detailing the vicinity, location and dimensions of the encroachment object(s)

12.1.5 Applicant returns application, sketch and proof of ownership of the property. All should be checked for accuracy. If no deed is provided, the Permit Office is requested to conduct a title search and no further action is taken until ownership is confirmed. If a title search is necessary, the permit fee is \$500.00

RULE 12.2 SPECIAL CONDITIONS FOR SIDEWALK CAFÉ PERMITS

12.2.1 The permit Applicant shall provide the Wayne County Permit Office with a sketch identifying the layout and portion of the proposed sidewalk café that will be located within the road right-of-way.

12.2.2 A clear area shall be maintained for pedestrian traffic and to facilitate maintenance and/or transportation use activities in accordance with local, State and federal requirements.

12.2.3 The permit Applicant shall not trim trees, hang signs on the existing lampposts nor otherwise modify the public property within the right-of-way.

12.2.4 Neither permanent fencing nor structures of any type shall be allowed to isolate tables and chairs for the sidewalk café.

- 12.2.5 The sidewalk café permit shall expire on December 31st of the year the permit is issued. The permit Applicant shall request in writing to renew their permit. The permit Applicant shall annually submit all the necessary documents and a permit fee in accordance with the construction permit fee schedule.
- 12.2.6 Wayne County reserves the right to require removal of all or any portion of the sidewalk café placed in the road right-of-way by this permit as needed for highway maintenance or for road construction purposes without replacement or reimbursement of any costs incurred by the permit Applicant or any other party. The permit Applicant will defend, indemnify and hold harmless Wayne County from any claims whatsoever resulting from the construction, maintenance or removal of the sidewalk café authorized by this permit.
- 12.2.7 The Applicant shall meet all applicable Governmental Agencies' requirements and ordinances.

SECTION 13: MISCELLANEOUS PERMITS

RULE 13.1 TREE REMOVAL, TRIMMING OR TUNNELING

- 13.1.1 A permit is required for any tree removal, trimming, tunneling or boring of trees within the right-of-way. A separate permit will not be required if the tree removal, trimming, tunneling or boring is performed in conjunction with other permitted activities. Such other permitted activities may include the construction of approaches, road improvements, or utilities, provided that the tree removal, trimming, tunneling or boring is shown on the approved plans.
- 13.1.2 The Permit Holder shall show on the construction plans the location, size and species of all trees which may be affected by the proposed construction.
- 13.1.3 The Permit Holder shall dispose of all stumps, limbs, litter and logs outside of the road right-of-way. The abutting property owner shall be entitled to the wood. The Permit Holder shall be responsible for notifying and coordinating delivery of wood to the property owner(s).
- 13.1.4 Any tunneling or boring under trees must be below the major root system and must extend a distance of one (1') foot on either side of the tree for each two (2") inches of trunk diameter. All voids around the tunneled or bored facility shall be backfilled with excavated material and thoroughly compacted to avoid settlement. If the tree is severely damaged or dies within one year as a result of the tunneling or boring, the Permit Holder shall, at its expense, remove the tree.
- 13.1.5 The Permit Holder may be required to replace trees. If applicable, landscaping plans showing trees to be removed as well as the species, size and planting location for each replacement tree shall be included with the permit application. Replacement trees shall be well-formed and sturdy stock of a size and variety approved by the Permit Office.

RULE 13.2 SOIL BORINGS AND MONITORING WELLS

- 13.2.1 Prior to applying for a permit for soil borings or monitoring wells to be situated in the right-of-way, the Applicant must obtain written permission from the owners of adjoining lands. The documented evidence of this permission shall be submitted with the permit application.
- 13.2.2 The approval of locations for soil borings within the right-of-way assumes that generally the testing method is a short-term operation followed by immediate restoration of the disturbed area. If soil borings are later to be converted into monitoring wells, the Applicant shall indicate this intent on the initial application.
- 13.2.3 Soil Borings shall be drilled at a maximum 6" diameter. All soil material shall be removed from the site and the hole shall be filled with bentonite slurry.

- 13.2.4 Wayne County reserves the right to require the Permit Holder to remove the well as a result of road and drainage construction purposes without replacement or reimbursement of any costs incurred by the Permit Holder or any other party.
- 13.2.5 Any costs of cleanup shall be considered as restoration and shall be the sole responsibility of the Permit Holder pursuant to the permit.
- 13.2.6 If not implemented within twelve (12) months of issuance, the permit shall expire unless the Permit Holder receives a continuance in writing from the Permit Office.
- 13.2.7 Monitoring well permits shall be issued for a period of (5) five years. If additional time is required, an addendum may be issued to extend the duration of the permit.
- 13.2.8 The Permit Holder shall provide a copy of the data collected from the monitoring well operation to the Permit Office upon request.
- 13.2.9 The applicant is responsible for locating nearby drainage facilities prior to installing monitoring wells.
- 13.2.10 Since the character, time limits, area and particular requirements of each non-intrusive testing project vary significantly, such permits are generally addressed on a case-by-case basis. Fees, insurance, surety and general requirements are handled similarly. The permit shall not sanction drilling or the taking of physical samples. However, since there is potential for surface damage when moving heavy equipment within the right-of-way, permits are required for all such activities.
- 13.2.11 Monitoring wells will not be permitted in the paved or traveled portions of the roadway nor the shoulder.
- 13.2.12 No soil boring shall be permitted in paved surfaces unless directed by the County Engineer. All restoration work should comply with rules listed in *Section 6: Restoration*.
- 13.2.13 The Applicant shall specify the proposed dimensions in its drilling and/or well completion program. The soil boring and/or completion designs shall be drilled and installed in accordance with industry standards.
- 13.2.14 Top of well casing shall be four inches or less above the ground to prevent contact with roadway maintenance equipment. If possible, the well casing shall be placed outside the mowed area.
- 13.2.15 All soil and water (drilling muds included) produced during the soil boring/drilling, testing, and/or sampling operations shall be disposed of outside of the right-of-way in a manner acceptable to the MDEQ.
- 13.2.16 All operating monitoring wells are to be completed with a cap that is mounted flush with the ground to minimize interference with landscaping, mowing, road maintenance, pedestrian and/or automotive traffic using the right-of-way.
- 13.2.17 As soon as possible following completion of intrusive test soil borings and/or abandonment of monitoring wells, the Permit Holder shall restore the right-of-way to its previous condition. All soil borings or monitoring wells (whether successful or not) shall be sealed (plugged) and abandoned as prescribed by MDEQ regulations.

RULE 13.3 SNOW REMOVAL

- 13.3.1 A permit for snow removal will be issued by the Wayne County Permit Office to a private Contractor subject to the following procedures and requirements:
- 13.3.2 Snow removal is permitted only on Wayne County local roads serving residential areas. The permit must specify, by road name and limits, which roads are included. A single permit can cover all roads within a single township. Snow removal on roads located in more than one township requires separate permits.
- 13.3.3 A non-refundable permit handling fee of \$75.00 is charged. A minimum cash bond of \$5,000.00 is required. A larger cash bond may be required for permits covering more than 10 miles of total road distance. The cash bond is refundable less inspection charges and/or street damage repair costs.
- 13.3.4 The permit is in effect from the date of issuance (after November 1 of any year) until June 1 of the following year. The bond refund will be made upon permit release after the June 1 date.
- 13.3.5 Insurance Requirements - \$500,000.00 combined single trusts for Bodily Injury and Physical Damages of No-Fault vehicle insurance. Wayne County must be named as an additional named insured on the aforesaid insurance. The Permit Holder must provide a certificate showing it carries Worker's Compensation on its employees. All insurance shall be endorsed with a provision that at least thirty (30) days advance written notice be given to the Wayne County Permit Office prior to any cancellation or termination of and/or material change in the terms or coverage afforded by the policies.
- 13.3.6 The Permit Office should be notified by 8:00 A.M. of the first working day following the commencement of snow removal operations and should be informed of the anticipated completion time.
- 13.3.7 The equipment utilized for snow removal must not exceed Wayne County Class B load restrictions.
- 13.3.8 Snow removal must be performed in a manner which clears the traveled track and does not obstruct street drainage outlets. (The traveled track is defined as the curb-to-curb distance on curbed roads and the outside edge of shoulder to outside edge of shoulder on open shoulder roads.) Street intersections are to be completely cleared on all quadrants. Snow is not to be plowed across County primary roads or other "main" roads.
- 13.3.9 All plowed snow must be deposited as equally as possible on both sides of the road adjacent to the part of the road that is cleared. Snow banks must not exceed 30 inches in height above the gutter or edge of pavement elevation.
- 13.3.10 Snow must be cleared to provide mail truck access to roadside mail boxes.

RULE 13.4 DRAINAGE

- 13.4.1 All drainage improvements shall conform to the design requirements of the current edition of the MDOT Drainage Manual, which may be downloaded in .Adobe Acrobat PDF format (as of the effective date of these Procedures and Regulations) from the MDOT website at <http://www.michigan.gov/stormwatermgmt/>.
- 13.4.2 Any water diversion or discharge into the Wayne County road drainage system shall require a permit from the Permit Office and shall not exceed normal agricultural runoff rates of flow, unless otherwise specifically approved by the Permit Office.
- 13.4.3 Any such water diversion or discharge shall be performed in such manner as not to cause a hazardous condition to either pedestrian or vehicular traffic or to cause erosion, siltation or ponding which adversely affects the stability of the roadway or damages adjacent property.
- 13.4.4 If the existing road drainage system lacks the capacity to handle a new discharge or diversion, the Permit Office reserves the right to deny access to the drainage system.

If agricultural rates of discharge cannot be accomplished naturally, the Applicant must propose a detention system with an outlet control approved by the Permit Office prior to being granted access to the existing road drainage system.

SECTION 14: LANDSCAPING AND BEAUTIFICATION

RULE 14.1 GENERAL PROVISIONS

- 14.1.1 The rules and guidelines contained in this section have been established to provide proper guidelines for the beautification of Wayne County roadways and to promote and protect the health, safety and welfare of the motoring public, pedestrians, other users and adjacent property owners.
- 14.1.2 A permit is required from the Permit Office to construct, place, remove, modify or maintain materials of any kind for the purposes of landscaping or beautification.

RULE 14.2 AUTHORIZED APPLICANT

- 14.2.1 The authorized applicant shall be an owner(s) of the property abutting the County right-of-way where the landscaping is proposed, by an agent of the abutting property owner(s) or by the municipality within which the project is located.

RULE 14.3 PERMIT REQUIREMENTS

- 14.3.1 An application shall be accompanied by four (4) sets of plans complying with the plan requirements detailed in Rule 2.5 of this manual and clearly indicating:
 - a) Type and location, limit and dimensions of project
 - b) Descriptions of proposed plant materials, ground coverings and above ground objects
- 14.3.2 Proposed and existing physical features including, but not limited to, pavement, curbs, shoulders, ditches, driveways, sidewalks, hydrants, manholes, poles and signs.
- 14.3.3 A municipal resolution will be required for the following type of projects:
 - a) Projects in which a municipality is the permit Applicant
 - b) Projects in which the proposed landscaping or beautification treatment extends in front of the property of an owner who is not the permit Applicant
 - c) Projects involving work in the median island of a divided County road
 - d) Projects involving the installation of street furniture, ornamental light poles, signs or similar above ground objects.
- 14.3.4 If a resolution is required, a certified copy of the resolution where the municipality approves the project and agrees to:
 - a) Maintain the permitted landscaping or beautification materials at no expense to the County
 - b) Indemnify the County, incorporating the provisions listed in Rule 11.2.1 of this manual.
 - c) Authorize a municipal official to sign the permit.

- 14.3.5 Permit Not Required - A permit is not required for the installation or maintenance of grass seed, sod or flowers less than fifteen (15") inches in height provided that the personnel and equipment involved do not occupy the traveled roadway or create or cause in any way a hazard or impedance to motorists or pedestrians.
- 14.3.6 Single Tree Permit - A property owner requesting permission to plant a single tree (only) in front of its property within a County road right-of-way should contact the Wayne County Forestry Office for information and permit application:

Wayne County Department of Public Services
Forestry Office - Merriman Yard Field Office
7651 Merriman Road
Westland Michigan 48185
Telephone: (313) 522-7370

- 14.3.7 Encroachment Permits - Architectural features such as awnings, marquees, mansard roofs or signs projecting into the County road right-of-way and supported by a building or other structure located outside of the road right-of-way may be permitted under an encroachment permit issued by the Permit Office. Permitted encroachments shall comply with the County's standards and procedures for allowable encroachments. These standards and procedures are presented in Section 12: *Encroachments Permits*, of this manual.

RULE 14.4 DESIGN STANDARDS

- 14.4.1 The placement of any structure, device or planting within a County road right-of-way may create a safety hazard or maintenance problem by obstructing sight distance at intersections, interfering with the unencumbered movement of pedestrians or cyclists, presenting a crash obstacle to emergency or errant off-road vehicle operation, visually distracting motorists, causing loose materials to be dispersed within the traveled way, obstructing drainage, preventing adequate storage space for plowed snow or promoting improper vehicle parking within the road right-of-way.
- 14.4.2 The purpose of the design standards presented in the following sections is to permit appropriate landscaping or beautification within a County road right-of-way without producing these adverse safety and maintenance effects.
- 14.4.3 The design standards identify permissible and non-permissible types of landscaping design and materials and establish criteria for determining minimum sight distance and horizontal clearance requirements.
- 14.4.4 Permissible Landscaping - Within the standards and guidelines contained in this document, the following landscaping or beautification features may be permitted in a County road right-of-way:
- a) Plantings including grass, ground cover, flowers, shrubs and trees;
 - b) Artificial shrubs and trees;
 - c) Street furniture such as benches, bicycle racks, trash receptacles, tree guards, ornamental light poles and planter boxes;
 - d) Earthen berms or mounds;

- e) Aggregate materials, such as rounded gravel or crushed stone, grouted in place;
- f) Underground lawn sprinkling systems;
- g) Decorative or maintenance paving including back of curb splash strips;
- h) City or township identification signs;
- i) On local roads within a subdivision, one subdivision identification sign, per entrance. If the entrance has a boulevard, the sign shall be placed in the boulevard area.
- j) Temporary banners or decorative devices conforming to Wayne County rules in Rule 11.5: *Special Events Permits*.
- k) Commemorative statues or plaques
- l) Specific rules and conditions regarding these permitted landscaping features are included in subsequent sections.

14.4.5 Non-Permissible Landscaping

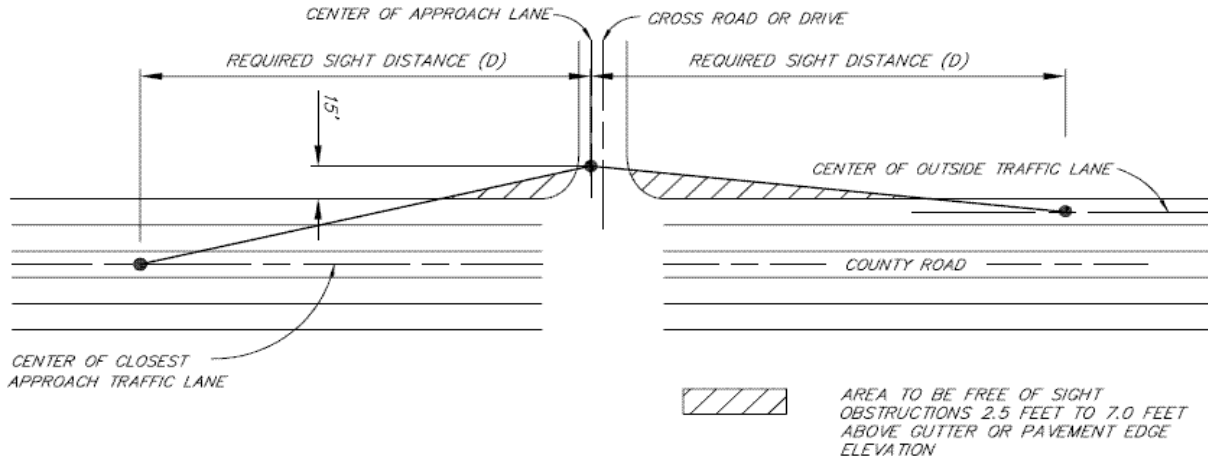
The following landscaping features are not permitted within the Wayne County road right-of-way:

- a) Boulders, railroad ties, fences, gates, playground equipment, decorative statues, concrete bumper blocks and similar miscellaneous above ground objects;
- b) Signs other than official road signs, city, township or subdivision name signs or signs affixed to buildings in accordance with Wayne County encroachment standards as stated in Section 12: *Encroachments Permits*;
- c) Sign poles or billboards;
- d) Loose materials of any kind;
- e) Surface paving for purposes of parking in the road right-of-way;
- f) Flashing lights or fixed lights which may be distracting to motorists or confused with traffic control devices;
- g) Steps, terraces or curbs other than road curbs or driveway curbs;
- h) Any structure or device used to promote or display commercial goods or services or to disseminate political information;
- i) Plantings, walls, signs, entrance markers or other structural elements will not be permitted within clear vision areas, sight distance or sight distance triangles at driveways or road approaches;
- j) Landscaping that interferes with drainage facilities, easements or access to such facilities for maintenance purposes;

14.4.6 Sight Distance

- a) Above ground landscaping materials shall not be placed at or near the intersection of a County road with another road or driveway so as to obstruct or partially obstruct required intersection sight distance. The required obstruction-free sight triangle for intersecting roads and driveways under posted or implied STOP control or under traffic signal control is defined in Figure 14.1. This sight triangle shall be clear of all unnecessary sight obstructions for vertical elevations between 2.5 feet and 7.0 feet above gutter or edge of pavement elevation.

Figure 14-1



INTERSECTION SIGHT TRIANGLE

INTERSECTION SIGHT DISTANCE			
		INTERSECTION SIGHT DISTANCE FOR PASSENGER CARS	
DESIGN SPEED	STOPPING SIGHT DISTANCE	CALCULATED (FT)	DESIGN (FT)
15	80	165.4	170
20	115	220.5	225
25	155	275.6	280
30	200	330.8	335
35	250	385.9	390
40	305	441.0	445
45	360	496.1	500
50	425	551.3	555
55	495	606.4	610
60	570	661.5	665
65	645	716.6	720
70	730	771.8	775
75	820	826.9	830
80	910	882.0	885

Intersection sight distance shown is for a stopped passenger car to turn left onto a two-lane road with no median and grades 3 percent or less. For other conditions, the time gap must be adjusted and required sight distance recalculated.

DESIGN INTERSECTION SIGHT DISTANCE LEFT TURN FROM STOP

DESIGN VEHICLE	TIME GAP AT (t)(SECONDS) AT DESIGN SPEED OF MAJOR ROAD
PASSENGER CAR	7.5
SINGLE UNIT TRUCK	9.5
COMBINATION TRUCK	11.5

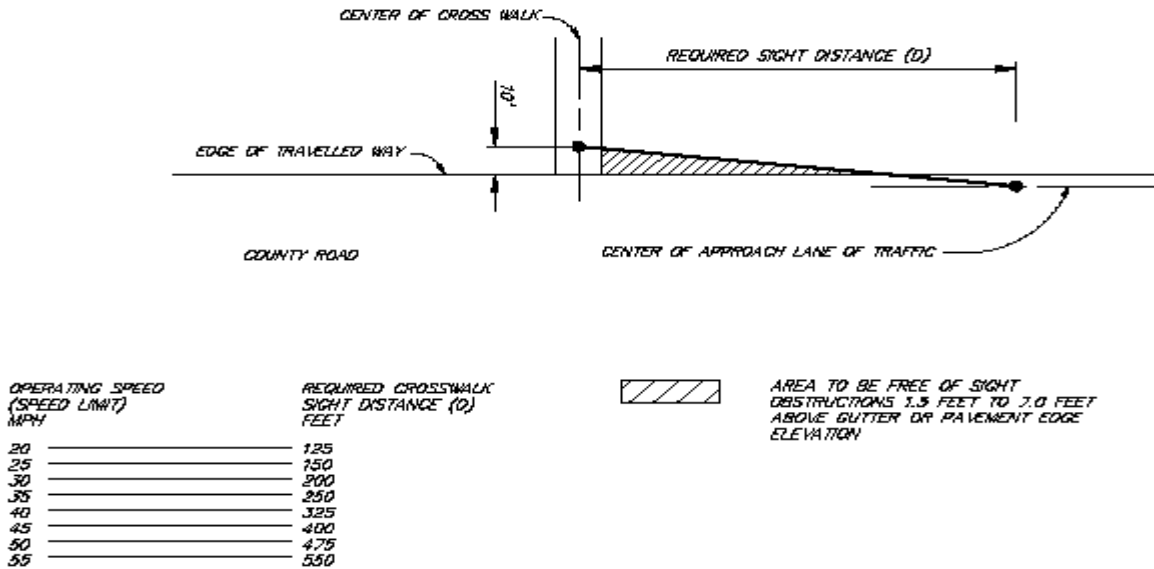
Time gaps are for a stopped vehicle to turn left onto a two-lane road with no median and 3 percent grade loss. The table for values requires adjustments as follows:

For Multilane roads:
 For left turns onto two-way roads with more than two lanes, add 0.5 seconds for passenger cars or 0.7 for trucks for each additional lane, from the left, in excess of one, to be crossed by the turning vehicle.

For minor road approaches:
 If the approach grade is an upgrade that exceeds 3 percent, add 0.2 seconds for each percent grade for left turns.

- b) The required obstruction-free sight triangle for the intersection of a County road with a marked or unmarked crosswalk is defined in Figure 14.2. This triangle shall be clear of all sight obstructions for vertical elevations between 1.5 feet and 7.0 feet above gutter or edge of pavement elevation.

Figure 14-2



CROSSWALK SIGHT TRIANGLE

14.4.7 Horizontal Clearance

- a) All above ground landscaping materials shall be placed and maintained to provide the minimum horizontal clearances shown in the following table. Clearances greater than those indicated may be required if warranted by site conditions.

Table 14-1

Minimum Horizontal Clearance to Permissible Roadside Obstructions			
FACILITY	POSTED SPEED LIMIT (MPH)	ON-STREET PARKING	MIN HORIZONTAL CLEARANCE
ROAD, UNCURBED	40		46' FROM ROAD C/L; OUTSIDE OF DITCH SECTION
ROAD, UNCURBED	35		10' FROM ROAD EDGE OF SHOULDER; OUTSIDE OF DITCH SECTION
ROAD, CURBED	40		15' FROM FACE OF CURB
ROAD, CURBED	30-35	No	9' FROM FACE OF CURB
ROAD, CURBED	25	No	5' FROM FACE OF CURB
ROAD, CURBED	35	Yes	3' FROM FACE OF CURB
UNPAVED ROAD			1'-4' FROM EDGE OF SHOULDER; OUTSIDE OF DITCH SECTION
DRIVE, CURBED			3' FROM FACE OF CURB
DRIVE, UNCURBED			6' FROM EDGE OF PAVEMENT
SIDEWALK			2' FROM EDGE OF SIDEWALK
BICYCLE PATH			3' FROM EDGE OF PATH

RULE 14.5 CLEAR ZONE GUIDE

- 14.5.1 A Clear Zone is the total roadside border area, starting at the edge of the traveled way, available for safe use by errant vehicles. This area may consist of a shoulder, a recoverable slope, a non-recoverable slope, and/or a clear run-out area. The desired minimum width is dependent upon traffic volumes and speeds and on the roadside geometry. Simply stated, it is an unobstructed, relatively flat area beyond the edge of the traveled way that allows a driver to safely stop or regain control of a vehicle that leaves the traveled way.

The Clear Zone Guide for Wayne County Roads, as listed or described is intended as a guideline for those responsible for the design, construction and maintenance of County roads. The guide will have application to new construction, reconstruction or widening of roads. The guide will be applicable to resurfacing, restoration and rehabilitation (RRR) projects, where it is practical to adjust or correct existing conditions. The use of the guide requires engineering judgment and interpretation, with regard to traffic volume, type of traffic, traffic speed, type of road and function of the road.

The guide is intended to follow the current AASHTO "Guide for Selecting and Designing Traffic Barriers" (Yellow Book), and the AASHTO "Policy on Geometric Design of Highways and Streets." The AASHTO Yellow Book is recognized as the national guideline on highway clearances and barrier design, but this guide primarily has application for high-speed, high traffic volume facilities.

The Wayne County Clear Zone Guide has minimum widths that vary with speed and traffic volumes. Also, different widths are indicated for rural open shoulder, for curbed urban conditions, and for heavier business-commercial areas, as allowed for the AASHTO Policy on Geometric Design.

For existing, older roads which are begin resurfaced, rehabilitated or restored; the clear distances in the guide are "desirable", but not always achievable. The relocation or removal of obstacles is not always possible or cost-effective. The review of accident history and accident potential may be conducted for particular locations or hazards.

High severity obstructions within the clear zone, such as bridge railings, piers and abutment should always be treated or protected. Other hazards to be considered for shielding or removal include utility poles, large trees, culverts, large pipes, embankments, stream crossings, deep ditches and commercial encroachments.

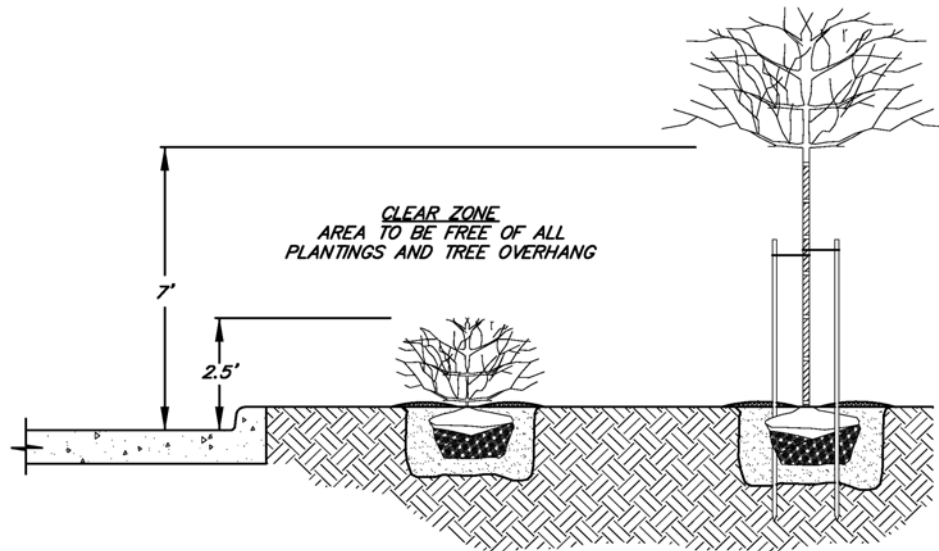
The attached chart for Clear Zone minimum width is to be applied as a guideline for removal or protection of hazardous objects. The application of the Clear Zone Minimum Width Guide should be determined individually for specific road, resurfacing and maintenance improvement projects.

Table 14-2

WAYNE COUNTY ROAD CLEAR ZONE MINIMUM WIDTH GUIDE				
PRIMARY ROAD TRAFFIC COUNT	SPEED	RURAL OPEN SHOULDER	URBAN CURB	(CBD) URBAN COMMERCIAL BUSINESS W/PARKING
ADT over 6000: Arterial or Major Collector Road	55 to 60	30	--	--
	45 to 50	20	14	--
	35 to 40	15	10	3
	25 to 30	10	6	2
ADT 2000 to 6000: Arterial or Major Collector Road	55 to 60	24	--	--
	45 to 50	16	12	--
	35 to 40	12	8	3
	25 to 30	8	5	2
ADT 800 to 2000: Arterial or Major Collector Street	55 to 60	18	--	--
	45 to 50	12	--	--
	35 to 40	9	5	--
	25 to 30	6	2	--
LOCAL ROAD TRAFFIC COUNT	SPEED	RURAL OPEN SHOULDER	URBAN CURB	(CBD) URBAN COMMERCIAL BUSINESS W/PARKING LANE
ADT 2000 to 6000: Arterial or Major Collector Road	55 to 60	24	--	--
	45 to 50	16	12	--
	35 to 40	12	8	3
	25 to 30	8	5	2
ADT 800 to 2000: Arterial or Major Collector Street	55 to 60	18	--	--
	45 to 50	12	--	--
	35 to 40	9	5	--
	25 to 30	6	2	--
ADT under 800: Rural Collector Residential	55 to 60	12	--	--
	45 to 50	10	--	--
	35 to 40	8	4	--
	25 to 30	5	2	--
The minimum widths given are to be adjusted upward for curves and embankments.				
NOTES:				
1. Any light poles located within the clear zone must be of a break-away design.				
2. For CBD's without a parking lane, use the guide for urban curb.				
3. These dimensions may be reduced based on R.O.W. availability and building locations.				
4. Measurements quoted in feet				

14.5.2 Figure 14-3 shows allowable landscaping within the clear zone.

Figure 14-3



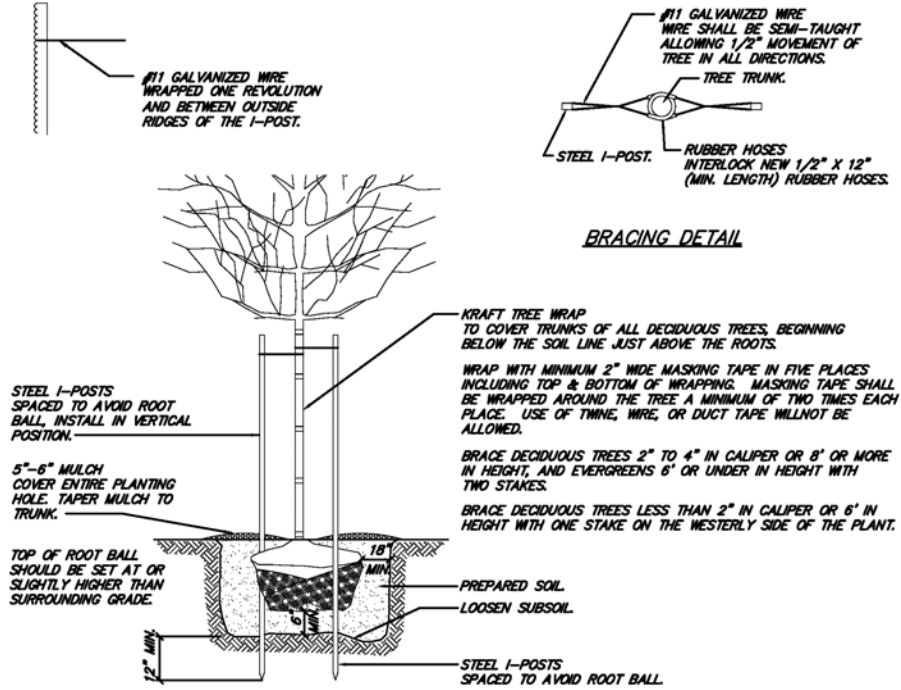
RULE 14.6 LANDSCAPING FEATURES

14.6.1 Trees and Shrubs

- a) The species and size of all natural trees and shrubs proposed for placement in the County road right-of-way shall be approved by the County's Forestry Office. The Forestry Office shall also be consulted on the proposed spacing of trees and shrubs and on the design of grouped or "cluster" plantings. A copy of the Wayne County "Tree Selection Guide" is included as Appendix B. Technical questions regarding tree planting requirements should be directed to the Forestry Office at (313) 522-7370.
- b) Trees with branches overhanging a sidewalk or bicycle path shall be "headed up" and maintained to provide a minimum under clearance of eight (8') feet. Trees shall be planted a minimum distance of four (4') feet from any paved surface and shall also comply with the horizontal clearance standards presented in Table 14-1.
- c) Trees or shrubs shall not be placed so as to obstruct the line of sight from a motorist to a road sign and, in no case, shall be placed within ten (10') feet of a road sign in the "upstream" direction.

14.6.2 Plant deciduous trees as shown in Detail "A".

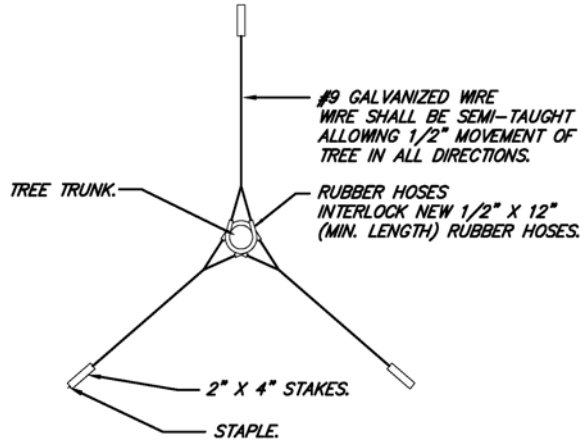
Figure14-4



**DECIDUOUS TREE PLANTING DETAIL (N.T.S.)
PLANTING DETAIL "A"**

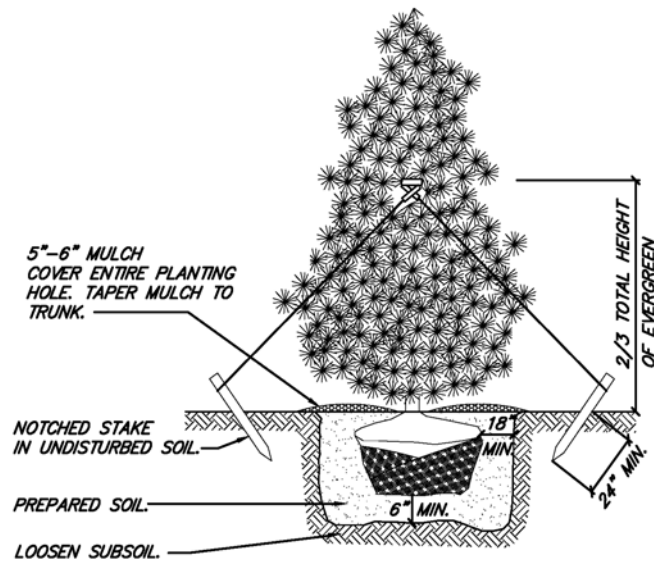
Plant evergreen trees as shown in Detail "B".

Figure 14-5



TRIPOD GUYING DETAIL

GUY EVERGREENS OVER 4" CALIPER OR 6' IN HEIGHT WITH THE TRIPOD METHOD.



GUYING TRIPOD METHOD

EVERGREEN TREE PLANTING DETAIL (N.T.S.)
PLANTING DETAIL "B"

14.6.3 "Streetscape" - Street Furniture

Permitted street furniture shall be located in accordance with sight distance and horizontal clearance standards. Street furniture shall be located only on paved surfaces and shall be securely fixed in place. A six (6') foot minimum walkway, free of all above ground obstructions, shall be maintained for pedestrian traffic.

14.6.4 Earthen Berms or Mounds

14.6.5 All permitted earthen berms or mounds must conform to sight distance and horizontal clearance standards. The maximum height of a berm shall not exceed thirty (30") inches above gutter or edge of pavement elevation. The maximum slope of the berm shall not exceed one (1') foot in three (3') feet. Berms shall not be permitted if surface drainage is adversely affected or if there is undue interference with existing or future sidewalks, storm sewers, utility fixtures, fire hydrants or road signs.

14.6.6 Splash Strips

14.6.7 Permitted splash strips shall be two (2') feet in width and shall consist of four (4") inches of HMA or four (4") inches of plain concrete placed immediately behind and in contact with the curb.

14.6.8 Paving

- a) On curbed roadways, paving between the curb and right-of-way line can be permitted to facilitate maintenance or enhance roadside appearance. Such paving shall consist of four (4") inches of HMA, four (4") inches of plain concrete or two (2") inches of HMA on a six (6") inch aggregate base.
- b) Paving between the curb and right-of-way line for the purpose of parking motor vehicles shall not be permitted. Paving between the curb and right-of-way line that encourages or facilitates motor vehicle parking shall not be permitted.

APPENDIX A

Standards Plans for Permit Construction

<http://waynecounty.com/departments/publicservices/engineering/construction-permit.aspx>

APPENDIX B

WAYNE COUNTY FORESTRY OFFICE 2009 TREE SELECTION GUIDE

- 1.1.1 The County Forester has approved the tree species selection for this Guide.
- 1.1.2 The Tree Selection Guide is divided into four tree groups based in part on the current edition of American Standards for Nursery Stock recommended for use by the American Association of Nurseryman.
- 1.1.3 Special permission is required to plant trees from Group III and/or Group IV.
- 1.1.4 Root development and branch growth shall be considered when selecting the location and species for right-of-way planting.
 - a) Location:
 - 1. Ten (10') feet is the minimum distance allowed from tree to curb or from tree to edge of traveled roadway.
 - 2. Less than four (4') feet from tree to side walk is not allowed.
 - 3. Avoid overhead wires or streetlights that will be interfered with as the tree matures.
 - b) Evergreens and shrubs:
 - 1. Plants that are fifteen (15') feet or smaller in height at maturity are considered shrubs and are not included in the Tree Selection Guide.
 - 2. Typically, evergreens and shrubs are not allowed to be planted in the right-of-way due to sight obstruction.
 - 3. The County Engineer must approve evergreens and shrubs.
 - c) Tree Groups:
 - 1. Type I – Standard shade tree, 75' and higher at maturity
 - 2. Type II – Slow growing medium shade tree, 35' – 75' at maturity
 - 3. Type III – Small upright tree, 15' – 35' at maturity
 - 4. Type IV – Trees for special use

TYPE I STANDARD SHADE TREE – 75’ OR HIGHER AT MATURITY MINIMUM TREE SPACING: 60’	
COMMON NAME	BOTANICAL NAME
Bitternut Hickory	<i>Carya cordiformis</i>
Shagbark Hickory	<i>Carya ovata</i>
Kentucky Coffee Tree	<i>Gymnocladus dioicus</i>
Maidenhair Tree	<i>Ginkgo biloba</i> (male)
Osage Orange – thornless only	<i>Maclura pomifera</i>
Horse Chestnut	<i>Aesculus hippocastanum</i>
Honeylocust – thornless only	<i>Gleditsia triacanthos</i> var. <i>inermis</i>
Sweetgum	<i>Liquidambar Styraciflua</i>
Dawn Redwood	<i>Metasequoia glyptostroboides</i>
London Planetree	<i>Platanus acerifolia</i>
American Elm – Dutch Elm disease resistant	<i>Ulmus Americana</i> ‘Harmony Princeton Valley’
Hybrid Elm (Mocton Red Tip)	<i>Ulmus</i> hybrids
Green Mountain Sugar Maple	<i>Acer saccharum</i> ‘Green Mountain’
Sugar Maple	<i>Acer saccharum</i>
Black Maple	<i>Acer nigrum</i>
Red Oak	<i>Quercus rubra</i>
Bur Oak	<i>Quercus macrocarpa</i>
Chestnut Oak	<i>Quercus prinus</i>
Chinkapin Oak	<i>Quercus muehlenbergii</i>
Northern Red Oak	<i>Quercus borealis</i>
Pin Oak	<i>Quercus palustris</i>
Scarlet Oak	<i>Quercus coccinea</i>

TYPE II SLOW GROWTH MEDIUM SHADE TREE – 35'-75' AT MATURITY MINIMUM TREE SPACING: 49'	
COMMON NAME	BOTANICAL NAME
Black Tupelo (Sourgum)	<i>Nyssa sylvatica</i>
Goldenrain Tree	<i>Koeleruteria paniculata</i>
Imperial Honeylocust	<i>Gleditsia triacanthos inermis</i> 'Imperial'
Majestic Honeylocust	<i>Gleditsia triacanthos inermis</i> 'Majestic'
Morraine Honeylocust	<i>Gleditsia triacanthos inermis</i> 'Morraine'
Rubylace Honeylocust	<i>Gleditsia triacanthos inermis</i> 'Rubylace'
Shademaster Honeylocust	<i>Gleditsia triacanthos inermis</i> 'Shademaster'
Skyline Honeylocust	<i>Gleditsia triacanthos inermis</i> 'Skyline'
Sunburst Honeylocust	<i>Gleditsia tracanthos inermis</i> 'Sunburst'
Trueshade Honeylocust	<i>Gleditsia triacanthos inermis</i> 'Trueshade'
American Hornbeam	<i>Carpinus caroliniana</i>
European Hornbeam	<i>Carpinus betulus</i>
Ruby-Red Horsechestnut	<i>Aesculus carnea</i> 'Briodi'
Chancellor Linden	<i>Tilia cordata</i> 'Chancellor'
Greenspire Linden	<i>Tilia cordata</i> 'Greenspire'
Little Leaf Linden	<i>Tilia cordata</i>

TYPE II SLOW GROWTH MEDIUM SHADE TREE – 35'-75' AT MATURITY MINIMUM TREE SPACING: 49'	
COMMON NAME	BOTANICAL NAME
Silver Linden	<i>Tilia tomentosa</i>
Cleveland Norway Maple	<i>Acer platanoides</i> 'Cleveland'
Crimson King Maple	<i>Acer platanoides</i> 'Crimson King'
Emerald Queen Norway Maple	<i>Acer platanoides</i> 'Emerald Queen'
Norway Maple	<i>Acer platanoides</i>
Schwedler Norway Maple	<i>Acer platanoides</i> 'Schwedler'
Summer Shade Norway Maple	<i>Acer platanoides</i> 'Summershade'
Superform Norway Maple	<i>Acer platanoides</i> 'Superform'
White Oak	<i>Quercus alba</i>
Sweetgum	<i>Liquidambar styraciflua</i>
Village Green Zelkova	<i>Zelkova serrata</i> 'Village Green'
American Beech	<i>Fagus grandiflora</i>
European Beech	<i>Fagus sylvatica</i>
Hackberry	<i>Celtis occidentalis</i>
Sargeant Cherry	<i>Prunus sargentii</i>
Canada Reo Choke Cherry	<i>Prunus virginiana</i>

TYPE II SLOW GROWTH MEDIUM SHADE TREE – 35'-75' AT MATURITY MINIMUM TREE SPACING: 49'	
COMMON NAME	BOTANICAL NAME
Basswood (American Linden)	Tilia americana
Yellow Buckeye	Aesculus octandra
Freeman Maple (Autumn Blaze)	Acer freemanii
Hardy Rubber Tree	Eucommia ulmoides
Gingko (male varieties only)	Gingko biloba
Red Maple (all varieties)	Acer rubrum
Amur Corktree	Phellodendron amurense
Hybrid Elms (Cathedral, Frontier, Homestead)	Ulmus hybrids

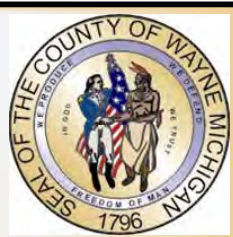
TYPE III SMALL UPRIGHT TREES – 15’-35’ AT MATURITY MINIMUM TREE SPACING: 25’	
COMMON NAME	BOTANICAL NAME
Kwanzan Flowering Cherry	Prunus serrulata ‘Kwanzan’
Flowering Crabapples	<i>‘Malus’ Varieties to be approved by Forester</i>
White Flowering Dogwood	Cornus florida
Hawthorn	<i>‘Crataegus’ Varieties to be approved by Forester</i>
Amur Maple	Acer ginnala
Hedge Maple	Acer campestre
Bradford Gallery Pear	Pyrus calleryana ‘Bradford’
Redspire Pear	Pyrus calleryana ‘Redspire’
Eastern Red Bud	Cercis canadensis
Trideat Maple	Acer buergerianum
Hedge Maple	Acer campestre
Shantung Maple	Acer truncatum
European Hornbeam	Carpinus betulus ‘Fastigiata’
Topelo	Nyssa sylvatica
Amur Maackia	Maackia amurensis
Smooth Oak	Quercus acutissima
Norway Maple	Acer plantanoides ‘Crimson Sentry’

TYPE IV TREES FOR SPECIAL USES COLUMNAR, FASTIGIATED, NARROW PYRAMIDAL AND RESTRICTED LOCATIONS	
COMMON NAME	BOTANICAL NAME
Armstrong Red Maple	<i>Acer rubrum</i> 'Armstrong'
Columnar Norway Maple	<i>Acer platanoides</i> 'Columnare'
Globe Norway Maple	<i>Acer platanoides</i> 'Globosum'

TREES TO AVOID	
NAME	REASON
Boxelder (<i>Acer negundo</i>)	Weak wood, hosts the home invading boxelder bug, weedy seedlings
Birch – all species (<i>Betula</i>)	Susceptible to birch leaf miner and bronze birch borer
Russian Olive (<i>Elaeagnus angustifolia</i>)	Susceptible to canker and verticillium wilt, short lived
Colorado Blue Spruce (<i>Picea pungens</i>)	Susceptible to cytospora canker which disfigures and eventually kills the tree
Poplars – all species (<i>Populus</i> spp.)	Susceptible to aphids, borers, cankers, galls, leaf blisters, powdery mildew, rusts and scales; weak wood
Purple Leaf Plum (<i>Prunus cerasifera</i>)	Susceptible to insects and disease.
Willow (<i>Salix</i> spp.)	Susceptible to twig blight, crown gall, cankers, borers, leaf spot, powdery mildew, scales, aphids, imported willow leaf beetle; weak wood
European Mountain Ash (<i>Sorbus aucuparia</i>)	Susceptible to scales, mountain ash sawfly, scabs, cankers, borers, fire blight; messy fruit
Ash (<i>Fraxinus</i> spp.)	Susceptible to Emerald Ash Bore beetle
Siberian Elm (<i>Ulmus pumila</i>)	Host to home invading elm leaf beetle; weak wood
Silver Maple (<i>Acer saccharinum</i>)	Weak wood
Tree of Heaven (<i>Ailanthus altissima</i>)	Seeds and suckers readily; weak wood
Elms (<i>Ulmus</i> spp.)	Susceptible to Dutch Elm disease
Sycamore (<i>Platanus</i> spp.)	Susceptible to anthracnose (mars & defoliates), messy, early leaf drop and winter fruit drop
Mulberry (<i>Morus</i> spp.)	Messy fruit, high maintenance
Honeylocust – thorned (<i>Gledisia triacanthos</i>)	Large thorns and messy seedpods
Black Locust (<i>Robinia pseudoacacia</i>)	Thorny, shallow root system, weak wood
Black Walnut (<i>Juglans nigra</i>)	Susceptible to Leaf Spot disease, messy fruit, defoliates early

APPENDIX C

Permit Procedures Flowcharts



PLAN REVIEW PROCEDURES FOR CONSTRUCTION PERMIT

PERMIT PROCESS FLOW CHART SHEET 1 of 2

Generally, plans are approved in 30-60 days. Some projects may require additional plan review time. Most reviews require at least 2 submittals.

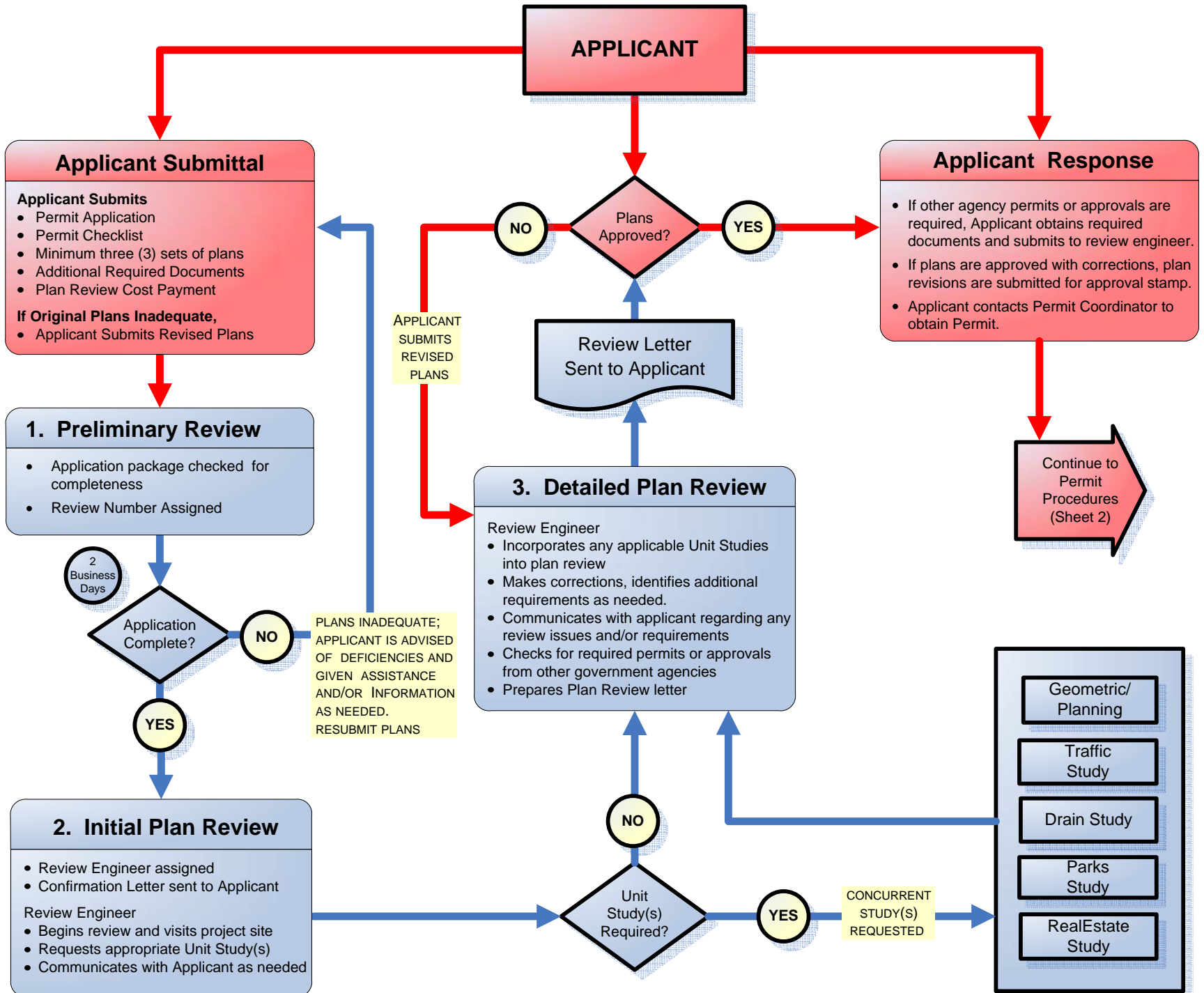
Plan Review Cost payments are based on reasonable estimates of plan review time. Some larger or more complex projects may require additional time and cost payments.

Some projects may require Applicant to obtain approvals, permits or agreements from other agencies with jurisdictional authority before plans are approved.

Wayne County DPS
Engineering Division
Permit Office
33809 Michigan Ave
Wayne, MI 48184

Phone (734) 595-6504
Fax (734) 595-6356

For further Info go to:
waynecounty.com



CONSTRUCTION PERMIT PROCEDURES

Continued From Sheet 1

PERMIT PROCESS FLOW CHART SHEET 2 of 2

24 Hours before you dig, call Miss Dig. (800) 482-7171

All work permitted shall conform to the Wayne County Standards and Specifications, Special Provisions, Conditions and the approved plans.

Significant changes to the approved plans require an Addendum. Contact the Permit Office to obtain an Addendum.

Wayne County Storm Water Ordinance, requires

- 1) Engineers Certificate of Construction
- 2) Governmental Maintenance Resolution
- 3) Maintenance Permit issued to the local municipality by Wayne County before a storm water permit may be released.

Wayne County DPS Engineering Division Permit Office
33809 Michigan Ave
Wayne, MI 48184

Phone (734) 595-6504
Fax (734) 595-6356

For further Info go to: WayneCounty.com

(4) Request Permit

PERMIT HOLDER

- Has Approval Letter
- Requests "Documentation & Fee Sheet"
- Prepares to submit:
 - Applicable Fee, Inspection Deposit and/or Bond Payment
 - Certificate of Insurance
 - Letter of Authorization
- When applicable, notifies Permit Office of any planned preconstruction meeting

4. Permit Prepared

PERMIT COORDINATOR

- Sends required "Documents & Fee Sheet" to Applicant
- Schedules appointment with Permit Holder
- Collects Fees, Deposit and Bond and/or Letter of Credit
- Receives required documents

All Documents and Payment Received?

NO

YES

5. Permit Issued

- Permit Signed & Executed
- Permit Number Generated
- Inspector Assigned to Project

PERMIT HOLDER

7. Permit Released

Depositor receives refund or Permit Holder is billed for amount due

Required Documents Received?

NO

YES

- MISSING DOCUMENT(S)
- ENGINEERS CERTIFICATE OF CONSTRUCTION
 - RESOLUTION
 - AGREEMENT,
 - MAINTENANCE PERMIT

Work is Accepted?

NO

YES

CONSTRUCTION WORK NOT IN COMPLIANCE

6. Permit Inspection

INSPECTOR

- Performs Inspections as needed
- Communicates with Permit Holder and/or Contractor regarding construction issues and/or requirements.
- Schedules Lab Inspections for materials as required.
- Sends periodic Status Letter to Permit Holder regarding permit compliance issues.

NOTICE TO RESUME CONSTRUCTION

SUBMIT DOCUMENTS & REQUEST FINAL INSPECTION

PERMIT HOLDER NOTIFIES WAYNE COUNTY INSPECTOR

(6) Construction Proceeds

PERMIT HOLDER

Prior to Construction

- Calls Miss Dig (800) 482-7171
- Works in accordance with
 - Wayne County Standards & Specifications
 - Material and Testing Requirements
 - Special Conditions
 - Approved Plans, Addendums
- When work halted, call Inspector 24 hours before work resumes

(6) Construction Complete

PERMIT HOLDER

- Requests final inspection
- Resolves outstanding compliance issues as directed by the Wayne County Engineer
- Submits any required documentation including:
 - Engineers Certificate of Construction, Resolution(s), Agreement(s)
 - Maintenance Permit

Call Permit Inspector 72 Hours Prior to Work

YES

YES