

City of Ypsilanti

Engineering Design Standards and Site Development Procedures Manual



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Washtenaw County authored documents are available at the County’s website. It is the applicant’s responsibility to verify the most current version of the documents at:

http://www.ewashtenaw.org/government/drain_commissioner/dc_webPermits_DesignStandards/dc_Rules

I. General Requirements and Procedures

A. Title and Purpose

These guidelines shall be known and may be cited as the City of Ypsilanti Engineering Design and Construction Standards. The intent of this manual is to establish minimum engineering requirements for the design and construction of improvements within the City of Ypsilanti.

B. Definitions

The following words, terms and phrases, when used in this manual, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning.

AASHTO:

American Association of State Highway and Transportation Officials

ANSI:

American National Standards Institute

ASTM:

American Society for Testing and Materials

AWWA:

American Water Works Association

CITY:

The City of Ypsilanti, Michigan

CITY ENGINEER:

The consulting engineers or staff engineers employed by the City of Ypsilanti.

DETENTION POND:

An open water facility used to manage and control storm water flows leaving a site via an engineered controlled outlet.

DPS:

City of Ypsilanti Department of Public Services

EASEMENT:

The right of an owner of property by reason of such ownership, to use the property of another for purposes of ingress, egress, utilities, drainage and similar uses.

GLUMRB:

Recommended Standards for Sewage Services, (Ten States Standards); standards for use as a guide in the design and preparation of plans and specifications for sewage services, prepared by the Standards Committee of the Great Lakes-Upper Mississippi River Board of State Sanitary Engineers.

MDEQ:

Michigan Department of Environmental Quality

MDOT:

Michigan Department of Transportation

MDPH:

Michigan Department of Public Health

MIOSHA:

Michigan Occupational Safety and Health Act

P&D:

City of Ypsilanti Planning and Development Department

STANDARD DETAILS DRAWINGS (SDD):

Refers to the City of Ypsilanti and YCUA Standard Details Drawings for water mains, storm sewers, sanitary sewers and soil erosion adopted by the City. They are considered a part of these standards.

WCRC:

Washtenaw County Road Commission

YCUA:

Ypsilanti Communities Utility Authority

ZBA:

The City of Ypsilanti Zoning Board of Appeals

C. Compliance with Ordinances and Public Acts

All construction shall be in compliance with the procedural and substantive requirements of the Zoning Ordinance; Part 91 - Soil Erosion Control; the Land Division Act, Act No. 288 of the Public Acts of Michigan of 1967, the Condominium Act 59 of 1978, as Amended, the 2010 Americans with Disabilities Act standards including 28 CFR section 35.151 and 28 CFR part 36 App. A, the ADAAG, and all other applicable statutes and ordinances, in addition to the requirements contained in this manual.

D. Standard Details

All utilities described and contained in this manual shall be constructed in accordance with the City's and YCUA's "Standard Details Drawings" (SDD) which are included with this manual.

E. General Project Review Procedures

1. The project review and approval process generally consists of four phases. All must be completed before a project is accepted by the City.
 - a. **Phase I – Site Plan**
The first phase includes review of the site plan and concludes with approval of the site plan by the Planning Commission. This includes any site improvements, public and private utility installation, paving, and storm water management facilities.

The applicant must contact the Planning and Development Department (P&D) for the required forms, fees and detailed explanation of the process. P&D will distribute the plans to the appropriate City departments and consultants who perform an engineering site plan review. The review of the site plan from an engineering standpoint, along with the associated fees and plan requirements is outlined herein.

The second phase begins after the Planning Commission approves the plan and the City Planner signs off on the plans implementing all conditions of approval.
 - b. **Phase II – Engineering Plan**
Upon completion of the Site Plan phase, the developer submits detailed engineering plans and fees to the Planning and Development Department. P&D then distributes the engineering plans to the appropriate City departments and consultants who perform a detailed engineering plan review.

Final approval of the plans will not be issued until all required permits are on file. The City of Ypsilanti Building Department will not issue any building permits until after all permits have been received, and the construction plans have been approved.
 - c. **Phase III – Building Department Review**
Building permit applications shall be obtained from the Building Department. The Building Department will not issue permits until the plans are approved for construction and a preconstruction meeting has been held.
 - d. **Phase IV – Construction**
The fourth phase begins after all permits are received and the plans have been approved for construction by the City Engineer and the Building Department. The construction phase begins with a preconstruction meeting, and ends with final acceptance of the project by the City of Ypsilanti, YCUA, and the Building Department.
2. Additional review steps are needed for single-family condominium and subdivision reviews per the City of Ypsilanti Zoning Ordinance.

F. Engineering Requirements for Site Plans

1. The applicant must follow the procedures of the Planning and Development Department in order to achieve site plan approval. Information on the submission deadlines and procedures must be obtained from the P&D Department.

<http://cityofypsilanti.com/planning>

The site plan submission shall include the level of engineering detail necessary to demonstrate conformance with these standards will be possible. The checklist included in Appendix A outlines the level of detail necessary on the detailed engineering plan submission, not necessarily the engineering site plan submission. It is the applicant's responsibility to provide the appropriate level of detail necessary to illustrate how the engineering requirements will be met.

For example, providing rough storm water detention calculations and identifying the detention pond location and approximate size would be suitable for site plan review. Detailed calculations and grading plans are necessary for engineering plan review and approval.

2. Special engineering design considerations may also be addressed at this time.

G. Engineering Requirements for Detailed Engineering Plans (Construction Plans)

The Detailed Engineering Plan Review process is outlined in Section II of this manual. A checklist outlining the information that needs to be included on a Detailed Engineering Plan submittal is included in Appendix A.

H. Permit Requirements

Prior to commencing construction the applicant must obtain all required permits.

1. **Building Permit:**
Before any construction can begin, a building permit must be obtained from the City of Ypsilanti. This permit will not be issued until construction plans have been approved by the Building Department, Department of Public Services, the City Engineer, and the Fire Department.
<http://cityofypsilanti.com/Government/Departments/BuildingDepartment>
2. **Soil Erosion and Sediment Control Permit:**
Application and fee must be deposited with Washtenaw County. A permit from Washtenaw County for soil erosion is required **for all projects** before engineering plan approval.
http://www.ewashtenaw.org/government/drain_commissioner/dc_websoilerosion
3. **City Right-of-Way Procedures and Fees Schedule:**

Anyone wishing to work in a City of Ypsilanti right-of-way must apply for and obtain an approval from the DPS. This includes, but is not limited to, driveway construction and reconstruction and private utility work.

4. Michigan Department of Environmental Quality (Water Main):
Construction of a public water main requires a construction permit from the Michigan Department of Environmental Quality as well as the approval of the City of Ypsilanti and YCUA. Projects meeting certain criteria may also require approval from the Detroit Water & Sewerage Department. The proprietor will submit four (4) sets of plans and detail sheets, signed and sealed by the Michigan registered professional civil engineer responsible for the preparation of plans and specifications. A completed MDEQ permit application must also be submitted. In addition, a tabulation of water mains consisting of their size, location, type and length will be prepared by the applicant's engineer and submitted to the City.

A current MDEQ permit application can be found at
<http://www.michigan.gov/deq/>.

5. Michigan Department of Environmental Quality (Sanitary):
Construction of public sanitary sewer requires a construction permit from the MDEQ as well as the approval of the City of Ypsilanti and YCUA. The applicant will submit three (3) sets of plans and specifications signed and sealed by a professional civil engineer registered in the State of Michigan. In addition, design flow computations for the proposed sewers and a tabulation of the capacities of the proposed sewers and the existing outfall sewer will be submitted by the proprietor's engineer, as well as two (2) copies of the completed MDEQ permit application. The City Engineer will send three (3) sets of plans to YCUA and request approval for an MDEQ permit.

A current MDEQ permit application can be found at
<http://www.michigan.gov/deq/>

6. Washtenaw County Road Commission (Roads)
All work in roads under the jurisdiction of Washtenaw County requires a permit from the Washtenaw County Permit Engineering Section.
7. Office of the Washtenaw County Water Resources Commissioner, (Storm Drainage):
 - a. Connections to County Drains and Sewers:
A Washtenaw County construction permit is required for any connection to a County drain. A Certificate of outlet will be required (See Appendix D).

- b. The City of Ypsilanti will require a certificate of outlet for all stormwater discharges. (See Appendix D).
- 8. Michigan Department of Environmental Quality (MDEQ) (Wetlands, Inland Lakes and Streams):

It is the developer's responsibility to obtain MDEQ permits as required under Part 303 (Wetland Protection Permit) and Part 301 (Inland Lakes and Streams Permit).

A current MDEQ permit application can be found at <http://www.michigan.gov/deq/>.

- 9. Other Permits:

Other agencies from which the developer may need a permit must be designated on the approved plan. These permits are the applicant's responsibility and will be required prior to construction. Other possible agencies include, but are not limited to:

Michigan Department of Environmental Quality – N.P.D.E.S.
Michigan Department of Transportation
Washtenaw County Health Department

I. Fees and Escrow Requirements

All escrows and fees must be submitted to the appropriate department prior to beginning any plan reviews. The fees and escrow amounts outlined in this document are for the City Engineer only. Additional fees from other City Departments and other permitting agencies may be required. The applicant is encouraged to contact the Planning and Development Department for a comprehensive schedule of City fees.

- 1. Engineering Site Plan Review Fee – paid to the Planning and Development Department
 - a. This fee must be deposited with the P&D Department prior to site plan review. This fee is non-refundable and approval cannot be given without its receipt.
 - b. Fees shall be paid in accordance with the Fee Schedule adopted by City Council.
 - c. The initial fee covers two reviews. Additional reviews beyond the second review will require additional fees in accordance with the Fee Schedule.

2. Detailed Engineering Plan Review Fee – paid to the Planning and Development Department
 - a. The fee will be calculated in accordance with the Fee Schedule adopted by City Council. The fee is calculated based on the total construction cost of the project. The total construction costs calculation shall include grading/earthwork, water main, sanitary sewer, pavement, storm sewers and underground detention / detention basins. Construction costs inside the building footprint shall not be included.
 - b. An itemized, unit-cost cost estimate of the work activities listed above must be provided to the Planning and Development Department with the original engineering application and plan sets. This estimate must be signed and sealed by an engineer registered in the State of Michigan and must be approved by the City Engineer. The initial fee will be determined as a percentage of the estimate as detailed in the Fee Schedule. As part of the first review, the estimate will be reviewed for completeness and compared to average industry costs. If revisions to the estimate are required additional fees will apply.
 - c. The original review fee covers three plan reviews. If additional reviews are necessary, the applicant must submit additional payment. Additional payments must be posted with the next submittal to the Planning and Development Department. The review process will be put on hold until this payment is received.
 - d. All engineering reviews must be submitted to the Planning and Development Department for processing. The Planning and Development Department will forward plans to the City Engineer.
3. Soil Erosion Plan Review and Construction Observation Fee (Contact Washtenaw County).
4. Construction Observation Escrow – paid to the Planning and Development Department:

The construction escrow must be deposited prior to construction to cover the costs of City Construction Observation. The fee is based on the construction cost of all water mains, sanitary sewers, storm sewers, earthwork, paving and sidewalks that require engineering Construction Observation. The construction cost will be defined as either the signed contract for the work or a sealed engineer's itemized estimate for the work approved by the City Engineer.

The initial escrow amount will be determined as a percentage of the estimate as detailed in the Fee Schedule. The construction escrow will be placed in an account and any unused monies will be refunded. If the construction escrow is not sufficient to cover the project costs, an additional deposit shall be required prior to the acceptance of the infrastructure by the City or issuance of a final certificate of occupancy.

5. Building Permit Fee – paid to the Building Department (contact Building Department).

J. Insurance

1. The CONTRACTOR, prior to commencing work, shall provide at their own cost and expense the following insurance to the CITY in insurance companies licensed and/or approved in the State of Michigan, which insurance shall be evidenced by certificates and/or policies as determined by the CITY. All policies and certificates of insurance shall be approved by the City Manager of the CITY prior to the inception of any work.
2. Each certificate or policy shall require that, thirty days prior to cancellation or material change in the policies, notice thereof shall be given to the CITY by registered mail, return receipt requested, for all of the following stated insurance policies. All such notices shall name the CONTRACTOR and identify the contract number.
3. All property losses shall be made payable to and adjusted with the CITY.
4. In order to determine financial strength and reputation of insurance carriers, all companies providing the coverages required shall be licensed or approved by the Insurance Bureau of the State in which the work is performed and shall have a financial rating not lower than XI and a policyholder's service rating no lower than B+ as listed in A.M. Best's Key Rating Guide, current edition. Certificates of insurance shall note A.M. Best's Rating. Companies with ratings lower than B+:XI will be acceptable only upon written consent of the CITY.
5. All policies and certificates of insurance of the CONTRACTOR shall contain the following clauses:
 - a. The clause "other insurance provision" in a policy in which the CITY is named as an insured, shall not apply to the CITY.
 - b. The insurance companies issuing the policy or policies shall have no recourse against the CITY (including its agents and agencies as aforesaid) for payment of any premiums or for assessments under any form of policy.
 - c. Any and all deductibles in the above described insurance policies shall be assumed by and be for the account of, and at the sole risk of, the CONTRACTOR.
 - d. The CITY (at its option) shall be listed as an Additional Named Insured on the following insurance coverages provided by the CONTRACTOR.
6. The CONTRACTOR shall maintain at its own expense the following insurance:
 - a. Worker's Compensation insurance with Michigan statutory limits and employers' liability insurance with minimum limits of \$500,000 each accident.

- b. General Liability insurance with a minimum limit of liability per occurrence of \$1 Million Combined Single Limit (Bodily Injury/Property Damage), with no aggregate.
This insurance shall indicate on the Certificate of Insurance the following coverages:
(commercial general liability insurance) with limits of liability of not less than \$1 Million (\$1,000,000) per occurrence combined single limit, personal injury, bodily injury and property damage. Coverage shall include form general liability extensions or equivalent.
- 1) Premises - Operations
 - 2) Independent Contractor and Subcontractors
 - 3) Products and Completed Operations
 - 4) Broad Form Contractual
 - 5) Broad Form Liability Endorsement
- c. Automobile Liability insurance with minimum limits of liability, per occurrence, of \$1 Million Combined Single Limit (Bodily Injury/Property Damage) unless otherwise indicated in the "Special Conditions" of the Contract specifications. This insurance shall include for bodily injury and property damage the following coverages:
- 1) Owned automobiles
 - 2) Hired automobiles
 - 3) Non-owned automobiles
- d. Protective Liability Insurance: Owners and Contractors. The CONTRACTOR shall provide the original and duplicate policy of insurance to the City Manager. This insurance contract shall name the CITY as the insured and remain in effect until the contract is accepted by the CITY.
The insurance shall provide minimum limits of liability per occurrence of \$1 million (\$1,000,000) Combined Single Limit. Said insurance shall provide that the term "Owner" or CITY shall be deemed to include all authorities, boards, bureaus, commissions, divisions, departments, districts and offices of the CITY and the individual members, employees and agents thereof, all elected and appointed officials and volunteers in their official capacities.
- e. Construction Insurance: The CONTRACTOR at their own cost and expense shall provide and maintain the applicable construction insurance until the Contract is accepted by the CITY and/or its designee. This coverage shall be written for 100% of the completed value covering the CITY as the insured, with a deductible of not more than \$1,000. The CONTRACTOR shall provide the original and duplicate policy to the CITY (unless the CITY shall accept, in lieu thereof, all contained endorsements including all applicable provisions and coverages).
- f. Professional Services. CONTRACTOR shall provide professional liabilities (errors and omissions) insurance, with minimum limits of \$1 Million (\$1,000,000) each occurrence.
- g. Disability Benefits: The CONTRACTOR shall provide proof of compliance with the Disability Benefits Law. (If applicable)
- h. Additional insurance may be required on an individual basis for extra hazardous contracts and specific service agreements. If such additional

insurance is required for a specific contract, that requirement will be described in the "Special Conditions" of the contract specifications.

7. Certificate of Insurance; required language. The Certificate of Insurance obtained by the CONTRACTOR shall contain the following language: "The City of Ypsilanti, Michigan, its elected officials, officers, employees, boards, commission, authorities, voluntary associations, and any other units operating under the jurisdiction of the City and within appointment of its operating budget, including the City of Ypsilanti, are named as additional insured, and such coverage shall be considered to be the primary coverage rather than any policies and insurance or self insurance retention owned or maintained by the City of Ypsilanti."
Additional Named Insured under Owners and Contractors Protective Liability and Property Damage Insurance will include the City of Ypsilanti; the Ypsilanti City Council, jointly and individually, and all City of Ypsilanti employees; the YCUA Board of Commissioners, jointly and individually; all YCUA employees, agents, and consultants, individually.

K. Pre-Construction Meeting

Prior to construction of any improvements, a pre-construction meeting will be scheduled by the applicant through the City Engineer to discuss the various project requirements. Prior to scheduling a pre-construction meeting, items such as insurance binders and permits must be on file. The owner, design engineer, underground contractor, paving contractor, and any other interested parties shall attend. Building Department permits will not be issued until a preconstruction meeting has been held.

See Appendix A for pre-construction meeting guidelines.

L. Construction Observation

1. Full-time Construction Observation shall be required during the construction of subdivisions, private utilities within public right-of-way, site plan improvements and utility systems and roads located within the City. Such construction and improvements shall include, but not be limited to, water mains, sanitary sewers, storm sewers, storm water holding facilities, street paving, driveway pavements and pumping stations. Observation personnel shall be provided by the City or the City Engineer. All estimated costs to be incurred for services must be paid prior to the start of construction by the proprietor, owner or developer of the project to be constructed. All costs incurred by the City for observation shall be paid by the proprietor prior to final acceptance of the project by the City.
2. Three (3) working days' notice is required prior to beginning any work. Contact information will be provided to the owner and contractor at the preconstruction meeting.
3. It shall be the owner's responsibility to provide soil and material testing to ensure that all construction methods and materials meet requirements of these standards.

Such testing will be performed by a qualified testing laboratory or registered professional engineer acceptable to the City and/or the City Engineer. All testing shall be subject to the direction and review of the City Engineer.

4. Failure by the owner or their contractors or agents to strictly adhere to these standards, to use good engineering judgment during any phase of the work, or to conduct the work in accordance with the approved plans may cause the City or City Engineer to consider the work unacceptable.
5. Generally, one observer will be assigned to a particular project and will be responsible for that project until its completion. The contractor makes arrangements for day-to-day Construction Observation. Any interruption or moratorium on the flow of work may result in a re-assignment of that observer to another project and require the normal 3 working days' notice before work is resumed.
6. The DPS, YCUA, and City Engineer will perform a final inspection at completion of construction. No infrastructure will be accepted by YCUA or the DPS until all punch list items are complete. At the time of final inspection for all public improvements, the owner or their contractor will provide all necessary labor and equipment to allow the YCUA and DPS to inspect the system. See Project Completion/Final Acceptance guidelines later in this section.

M. Bonds

A Performance Bond must be provided to the P&D Department prior to the scheduling of a pre-construction meeting. The bond amount shall be 50% of the proposed site improvements including all utilities, paving, earthwork, and landscaping.

A two-year Maintenance and Guarantee Bond (see Appendix B), in an amount equal to 50% of the infrastructure constructed in the public right-of-way must be posted prior to final acceptance (e.g. drive apron, sidewalk, utility cut repair, etc).

YCUA requires a Maintenance and Guarantee Bond in an amount equal to 50% of the public utility infrastructure construction cost for a period of two years (e.g. public water main, public sanitary sewer) prior to final acceptance of the utilities.

N. Easements

The applicant shall provide YCUA and the City with necessary easements prior to final acceptance of infrastructure to allow maintenance of any water mains and/or sanitary sewers that are to be located on developed property and maintained by YCUA. The form of such easements shall be subject to approval of YCUA, the City Engineer and the City Attorney. Sample easements are included in Appendix C. Sufficient evidence of title shall be provided by the grantor along with the easement in the form of a policy of title insurance, acceptable to the City Attorney, to show that the grantor of the easement is the owner of the property. All parties having a legal interest in the property shall execute and

grant the easement. Water main easements shall be of a minimum 12-foot width. Sanitary sewer easements shall be of a minimum 20-foot width.

O. Project Completion/Final Acceptance

The following items must be completed before improvements are accepted by the City and a final Certificate of Occupancy is issued:

1. For public roads constructed as part of a subdivision or otherwise, the following shall apply: In no case will a partial acceptance of any street be made for maintenance.
 - a. Quit Claim Deed and necessary easement documents recorded or final plat recorded.
 - b. Approximately 80% of the homes constructed.
 - c. Developer's engineer must issue certification letter to the P&D Department with a copy to the City Engineer that improvements have been made per the approved plan.
 - d. Right-of-way restoration complete with vigorous growth within greenbelts.
 - e. Public utilities within right-of-way accepted (see below).
 - f. Storm sewers completely cleaned with soil erosion measures removed.
 - g. Striping and signing complete.
 - h. Releases provided from all other permit agencies.
 - i. See items 2 – 8 below.
2. Final Inspection scheduled and completed by YCUA, the DPS, P&D, and City Engineer with all punch list items addressed.
3. Project acceptance by Building and Fire Department.
4. Two year Maintenance and Guarantee Bond for 50% of constructed value, submitted for all new infrastructure (see Appendix B). Bonds provided for City of Ypsilanti and YCUA as detailed in Section I.M.
5. All easement documents must be submitted to the DPS for review prior to recording (see Appendix C).
6. Public sanitary sewer and public storm sewer must be taped, reviewed and approved by YCUA and the DPS.
7. Record plans must be submitted to the City Engineer for review and approval. Upon approval, final record plans must be submitted in electronic form (see Appendix A).
8. Site Grading/Setback Certification submitted by the developer's engineer (see Appendix D).
9. Certificate of Outlet submitted by the developer's engineer (see Appendix D)
10. Any outstanding fees must be paid.

II. General Requirements for Engineering Reviews

A. General Procedures

1. Prior to the issuance of a building permit, the plans must first receive approval from the Building Department, Planning and Development Department, Planning Commission, City Engineer, and Washtenaw County (if applicable).
2. A minimum of two (2) complete sets of site engineering plans will be required, depending on the various agencies influenced by the proposed development. The plans will be received at the Planning and Development Department, One S. Huron Street, Ypsilanti, Michigan, 48197. All plans must be signed and sealed by an engineer registered to practice in the State of Michigan.
3. Two (2) copies of a detailed, itemized construction cost estimate for all earthwork, water main, sanitary sewer, paving and drainage improvements must be submitted to the P&D Department at the time of plan submittal. The estimate must be signed and sealed by an engineer registered to practice in the State of Michigan.
4. On all projects for which phasing of construction is intended, a separate plan sheet shall be included in the construction drawings which breaks down all improvement quantities by item; items shall include sidewalks, storm sewer, landscaping, pavement base and wearing courses, and utilities for each phase. Such phasing limits shall match those approved by the City Planning Commission.
5. The P&D Department will forward the plans to all other concerned departments (DPS, Fire Department, etc) that may have jurisdiction over a certain phase or area of the site. The review comments of these other departments will need to be addressed by the developer as a part of the review process.
6. After completing the review, the City Engineer may return one set of plans to the design engineer with revisions and/or corrections noted on the plans. Directions will be given at that time as to how many plans must be resubmitted.
7. The plans will be reviewed again and revisions must be made as required.
8. Prior to engineering plan approval, all permits and storm water agreements must be forwarded to the City Engineer.
9. Upon Engineering, DPS, and Fire Department approval, notification will be given to the Building Department that the site-engineering plan is approved. An approved plan will be returned to the Building Department, the DPS and owner.
10. Partial approvals will generally not be given. All revisions on all elements of the project must be made prior to engineering approvals.

11. Approval will not be given until all required fees have been deposited.

B. General Plan Requirements

1. Construction cost estimate shall be submitted with plans. The estimate shall be sealed by the design engineer. City Engineer will review estimate.
2. Submittal on 24" x 36" white paper having blue or black lines with a minimum horizontal scale of 1" = 50' and vertical of 1" = 5'. Other acceptable scales are 1" = 20', 1" = 30' and 1" = 40'.
3. General plan scaled at 1" = 100' or 1" = 200' when size of site prohibits a single plan sheet. Show street names, units, utilities, pavement, site dimensions, phase lines, lot lines and lot numbers.
4. Location map showing section number and major thoroughfares, drawn with appropriate scale not greater than 1" = 100' nor smaller than 1" = 2000'.
5. Lot number, parcel dimensions and adjoining rights-of-way.
6. Plans must be prepared under, and signed and sealed by, a professional engineer registered in the State of Michigan. All correspondence concerning the design of the site will be directed to the engineer whose seal appears on the plan.
7. Title sheet showing:
 - a. Project title
 - b. Location map
 - c. Index of plan sheets
 - d. Symbol legend
 - e. Plan completion date with most recent revision dates
 - f. Name, address and phone number of engineer and the owner, and affected permitting agencies
8. Legal description of property that closes within acceptable limits.
9. Setbacks and building separations noted in accordance with zoning requirements.
10. Striping plan for parking lot areas in accordance with zoning requirements.
11. Walls or berms must be shown in cross-section. Walls separating a grade differential of more than 18" are considered retaining walls and require a structural engineering design and review. Design Engineer must supply calculations with engineering plan submittal.
12. The storm sewer, sanitary sewer and water main shall be shown on the same plan view.
13. Title block for each sheet.
14. Include landscape plans. Plantings must not interfere with utilities.

15. Adequate space must be provided to allow for turning movements of vehicles including trucks and fire engines.
16. North arrow, scale, and MISS DIG notice on all sheets.
17. Concrete pads provided for trash dumpsters.
18. Utilities must be a minimum of 10' from buildings.
19. Proposed locations of gas, electric, cable, phone, etc. must be shown on the plans. These must be located in rear yards on residential sites.
20. If final site plan is approved prior to engineering approval and changes are made to easements, right-of-way., etc., the final site plan and master deed will need to be revised.

III. Soil Erosion

A. Sites Requiring Permits

1. All sites shall follow Washtenaw County Soil Erosion and Sedimentation Control procedures.

B. Intent of Permit

1. The intent of this requirement is to ensure that no silt or sediment enters the public stream or watercourses. This is accomplished through means of silt fences, filters, diversions, etc.

C. Plan Requirements

1. The Office of the Washtenaw County Water Resources Commissioner is responsible for soil erosion permitting and inspection. Current information, including permit application packages, can be found on their website at http://www.ewashtenaw.org/government/drain_commissioner/dc_websoilerosion

D. Construction Observation

1. Construction Observation will be made periodically by Washtenaw County throughout construction on the maintenance and effectiveness of soil erosion control methods.
2. If Construction Observation reveals that the controls are not being implemented, a cease and desist order on all site construction may be issued.

IV. Topography

A. General

1. A complete topographical survey is required for all sites. Existing off-site elevations must be given at a minimum of 50' and 100' outside the entire perimeter of the site. Grades will be indicated at all property corners and along all property lines. On-site, intermittent elevations or defined contours are required to establish the existing site drainage.
2. All existing conditions will be indicated. Locations and elevations must be given on the following:
 - a. Existing drainage courses, ditches and culverts.
 - b. Sidewalks.
 - c. Finished grades of all adjacent buildings.
 - d. All easements.
 - e. Trees.
3. Show existing utilities (invert and casting elevations), gas main, electric lines, phone lines, cable lines, and power poles.
4. Two USGS NGVD 29 benchmarks are required. All elevations shown on plan must be to USGS datum.
5. Road topography will extend across the entire site with grades shown on both sides of the street for:
 - a. Property line.
 - b. Ditch centerline.
 - c. Top of bank.
 - d. Edge of shoulder.
 - e. Edge of pavement or top of curb.
 - f. Crown or centerline.
 - g. Existing and proposed right-of-way, per the Master Plan.
6. Property lines must be indicated by distances and bearings where applicable.
7. Existing and proposed rights-of-way of adjacent roads must be indicated.

V. Grading

A. General

1. All proposed developments shall be graded such that storm water runoff shall be intercepted within the boundaries of the site and conducted through a storm sewer system to an approved point of discharge. Open drainage ditches may be approved only where storm sewer systems are not feasible, as determined by the engineer.
2. No storm water runoff from developed property shall flow onto the adjacent lands of others. Filling and grading shall not create a barrier causing entrapment of water on the adjacent lands of others.
3. The developer shall provide for overland flow of storm water from adjacent properties where the existing off-site land slopes to the site. The amount of runoff to be provided for from off-site lands shall be at least equal to the amount of runoff from the land in the undeveloped state.
4. Each single-family lot shall be graded to drain away from the house to swales constructed along the lot lines. Swales shall discharge to a catch basin, roadway gutter, or other approved drainage course.
5. Grading plans shall take into account the desirable natural features and the character of the land, which must be preserved where possible.
6. No filling will be allowed in any areas of land within a proposed subdivision or other type of development which lie either wholly or in part within the flood plain of a river, stream, creek, or lake unless under the terms of a permit granted by the MDEQ.
7. Trees and stumps (removed due to grading operations), excess topsoil, surplus materials, construction debris, etc., shall be removed from the site and properly disposed of.
8. Elevation representing the brick ledge, finished grade, and the first floor grade must be indicated.
9. Proposed grading shall meet abutting property line elevations. Differentials in grade must incorporate a minimum four horizontal to one vertical slope to the abutting property line.
10. Any wall separating a differential grade of more than 18" shall be considered a retaining structure and will require a structural engineering design and review.
11. Asphalt surface parking lots and roadways shall be graded to a minimum 1% slope, 1' per 100', except where concrete curb and gutters are to be provided. Where concrete curb and gutters are to be used, the transverse slope to the gutter

shall be a minimum of 1% for parking lots and 1/4" per foot for roadway crowns. Longitudinal gutter grades shall be a minimum of 0.5%. In general, pavement grades shall not exceed 6%.

12. All areas within 25' of buildings shall slope away from the building at a minimum slope of 2%. All other areas shall have a minimum of 1% slope.
13. All lawn or landscaped areas shall drain to parking lots or swales.
14. Catch basins shall be placed at all low points in parking lots and swales.

VI. Paving

A. General:

1. All paving shall conform to the current standards and specifications of the Washtenaw County Road Commission, MDOT Standard Specifications for Construction (current edition), and the City of Ypsilanti, as applicable. “Permeable pavements” are allowed.
2. Any road improvements in Washtenaw County right-of-way are subject to the review and approval of Washtenaw County. A permit must be secured for construction.
3. Any road improvements in MDOT right-of-way are subject to the review and approval of MDOT. A permit must be secured for construction.
4. The Washtenaw County Road Commission standard paving detail sheets shall accompany construction plans where required.
5. Construction of new or reconstructed driveways connecting to an existing county or state roadway shall be allowed only after an approved permit has been secured from the agency having jurisdiction over said roadway.
6. Cross-sections of all proposed pavement must be shown on the plans. All cross sections must be engineered based on soil conditions and expected passenger and commercial traffic volumes. Cross sections will be reviewed and approved on a case-by-case basis.
7. The minimum surface grade for asphalt paving shall be 1%. The minimum surface grade for concrete paving shall be 0.5%. In general, pavement grades shall not exceed 6%.
8. Concrete curb and gutter shall be required around all private paving. Wheel stops may be substituted for curb for the parking stalls only. Asphalt curbs are not allowed.
9. Underground storm sewers shall be installed with all paving that requires concrete curbs and gutter.
10. Where pavements are to be constructed over clay soils or other poorly drained soils and a granular sub-base is used, an approved sub-drainage system shall be installed. Edge drains will generally be required for all roads.
11. Design standards of Washtenaw County Road Commission shall apply for horizontal and vertical alignment of all roadways.

12. Soil borings must be taken and analyzed by a professional engineering firm, qualified to do such work, at the locations of all proposed public roads. Copies of the report must be submitted to the County and the City Engineer. It is recommended that soils investigations be done and a report prepared for all areas where pavement is proposed.
13. Sufficient proposed grades must be shown on the plan to clearly demonstrate the drainage patterns.
14. Parking spaces, maneuvering lanes, and driveways shall conform in size and configuration to City ordinances.
15. The minimum requirements that follow are based on adequate sub-grade, sub-grade drainage and average live loads. Each site must be examined individually and additional pavement thickness and/or base requirements may be necessary.

B. Public Roads:

1. Public roads under Washtenaw County jurisdiction must conform to Washtenaw County Road Commission standards. Plans must be reviewed by Washtenaw County Road Commission. A permit must be obtained from Washtenaw County Road Commission for construction.
2. Public roads under the City of Ypsilanti jurisdiction must also conform to Washtenaw County Road Commission standards. Plans must be reviewed by the DPS and the City Engineer. Approval must be granted by the City Engineer and a permit must be obtained from the DPS.

C. Private Roads:

Private Roads must conform to the following minimum requirements:

1. Sub-Grade Requirements:
 - a. A 6" compacted thickness of MDOT Class II granular material shall be placed under all pavements except where existing soils consist of approved granular materials.
 - b. A minimum of 6" of MDOT 21AA aggregate base must be placed under concrete pavement sections.
2. All pavement surfaces must be supported upon a prepared sub-grade that has been compacted to at least 95% of maximum unit weight in accordance with MDOT standards. When unstable sub-grade materials, i.e., peat, muck, marl, wet clays, etc., are encountered, excavation and removal of such unstable materials and replacement to plan sub-grade with approved materials compacted in place

shall be required. Approved materials shall include crushed stone, gravel, coarse sand, or other materials approved by the City Engineer.

3. Should it be found that the excavation, removal and replacement of unstable sub-grade material is impractical due to excessive depths, alternate pavement structure designs must be submitted to and approved by the City Engineer prior to pavement installation.

D. Parking Lot Pavements (Non-industrial):

1. Asphalt pavement cross section shall be placed on suitable granular soil sub-base. 6" compacted thickness of MDOT granular material Class II shall be placed except where existing soils consist of approved granular material. Pavement cross section shall be a minimum of 3" HMA on 8" 21AA.
2. Concrete pavement cross section shall be a minimum of 6" thick plain concrete pavement; MDOT Spec. 7.01; mixture 35P with 8" granular sub-base.
3. All parking spaces and isles shall conform to Article XIII of the Zoning Ordinance.

E. Industrial Parking Lots:

1. Parking lots for industrial uses will be reviewed on an individual basis with consideration given to intended use, type and volume of traffic, and subsoil data furnished by the developer. The applicant must submit pavement design criteria along with basis of design to be reviewed by the City Engineer. In no case shall the minimum design standards be less than those outlined here for non-industrial parking lots.

F. Sidewalks:

1. Sidewalks are required along all frontage. They shall be located in the right-of-way, 1' from the ultimate right-of-way line.
2. The walk shall be 5' wide constructed of 4" of Portland Cement concrete on compacted porous sub-grade. The walk must be continued through driveway sections where it shall be increased in thickness to 8" on major thoroughfares and collector roads and 6" in all other instances. Curbs must be tapered to meet the walk. Cross slopes on the sidewalk shall be 1/4" per foot maximum toward the street.
3. Proposed grades must be indicated along the property line, driveways, and intermittent locations along the length of the walk.
4. Any structures, hydrants, poles, etc., that are existing along the alignment of the

walk, must be adjusted or relocated at the expense and coordination of the developer.

5. All sidewalk construction shall be in accordance with Americans with Disabilities Act requirements, including 28 CFR section 35.151 and 28 CFR part 36 App. A, the ADAAG. The project, to the maximum extent feasible, shall be performed in such a manner that the facility is readily accessible to and usable by individuals with disabilities.

G. Driveways:

Residential driveways shall conform to Article XIII Section 122.833 of the Zoning Ordinance.

1. Residential Driveways, (Single Family):
 - a. The drive apron shall be 6" concrete over a 6" compacted 21AA aggregate base course. Approval from the Planning Commission and the City Engineer are required for bituminous drive aprons.
 - b. Concrete driveways must be 6" thick from the back of curb to the property line and a nominal 4" thick beyond the property line on private property. Concrete shall conform to MDOT 7.01, Grade 35P.
 - c. Bituminous driveways shall consist of a minimum compacted thickness of 3" (two equal lifts) of bituminous pavement placed over a 6" compacted 21AA aggregate base course. The bituminous mixture shall be an MDOT mix approved by the City Engineer.
 - d. The driveway cannot be located closer than 2' from the property line.
 - e. The driveway approach at the roadway edge cannot extend beyond the property line extended, thereby creating an encumbrance across the frontage of the adjacent properties.
2. Commercial and Industrial Drives
 - a. Commercial and Industrial Drives will be reviewed on a case by case basis.
 - b. Cross section and geometric requirements will be dictated by the expected vehicle size and weight.

VII. Storm Sewer and Detention Basin

A. General

1. All construction must conform to the current standards and specifications of the City of Ypsilanti, Washtenaw County, Michigan Department of Environmental Quality (MDEQ) or Michigan Department of Transportation as jurisdiction applies. The following watersheds will be under the review of MDEQ due to thermal/environmental sensitivity: Paint Creek.
2. **The use of Low Impact Designs (LIDs) and Best Management Practices (BMP's) to manage storm water are highly encouraged.** Washtenaw County Standards shall be followed when implementing low impact design techniques: http://www.ewashtenaw.org/government/drain_commissioner/dc_webPermits_DesignStandards/dc_lid
3. Where construction of storm sewer is proposed, the Ypsilanti City standard storm sewer detail sheets must accompany the plans, depending upon jurisdictional responsibilities.
4. Underground drainage facilities will generally be required. All run-off on-site must be accommodated and discharged in a controlled manner. The minimum on-site pipe size is 12". All public systems shall have a minimum pipe size of 12".
5. Sump pump discharge must be directed into the storm sewer via an enclosed system. A minimum of 4" pipe shall be utilized and will also be allowed to discharge unrestricted.
6. Depth of sewer: The minimum allowable coverage over pipe is 2.5'. Where possible, the minimum cover shall be 4'.
7. A certificate of outlet will be required for each discharge.
8. Capital improvement and stormwater services charges will be assessed as defined in Chapter 42 of the Code of Ordinance of the City of Ypsilanti and set forth by resolution of the Ypsilanti City Council.

B. Structure

1. Inlets at the upstream end of the system shall be a minimum of 24" in diameter. Catch basins with an inlet pipe shall have a minimum diameter of 48". All manholes and public catch basins shall be a minimum of 48" in diameter. All structures must be a minimum of 4' deep.
2. The first structure upstream from a public system within the confines of the private development shall be 48" in diameter and have a 24" sump.
3. Manholes shall be located at:

- a. All changes in alignment.
 - b. Points where the sewer changes size.
 - c. Points where the grade changes.
 - d. Junction of sewer lines.
4. The maximum distance between manholes shall be 300' for sewers 30" diameter and smaller; 400' for 36" diameter; and 600' for diameters greater than 36".
5. Catch basins shall be located as follows:
- a. 5' away from the end of radius.
 - b. At all low points.
 - c. No more than 150' of street drainage will be allowed to flow around a corner.
 - d. A relief basin will be required at the highest end of radius where drainage is required to cross an intersection longitudinally.
 - e. At intermediate points along the street, the maximum distance drainage will be allowed to flow is 600'. The maximum street drainage into a basin is 800', (from two directions).
 - f. Where longitudinal grade exceeds 1000', a double inlet structure will be required at the low point.

C. Storm Sewer Design

- 1. Storm sewers shall be designed using the Manning Equation for pipes flowing full.
- 2. Runoff shall be determined using the Rational Method with an intensity formula of:
 - a. $I = 175 \div (T+25)$. The initial time of concentration (T) shall generally be 20 minutes maximum.
- 3. Storm sewer design computations must be submitted for review. The velocity shall be a minimum of 2.5 fps and shall not exceed 10 fps.

4. The minimum and general maximum gradients in percent slope for each size pipe listed shall be as follows:

Pipe Diameter	Minimum Slope	Maximum Slope
12"	0.34	4.8
15"	0.26	3.6
18"	0.2	2.6
21"	0.16	2.2
24"	0.14	1.8
27"	0.12	1.5
30"	0.1	1.3
36"	0.08	1
42"	0.06	0.8
48"	0.05	0.7

5. The 10-year design storm hydraulic gradient must be maintained within the pipe wherever possible and shall be shown on the storm sewer profile. It must be a minimum of 2' below the top of all inlet structures.
6. The 100-year storm flood plain elevation contours must be shown on the plans, and the source of the information shall be included.
7. Run-off coefficient can be determined for each individual drainage area and calculations for each drainage area must be submitted as part of the design computations.
8. Along with the storm sewer design computations, the design engineer must submit a storm district map showing all drainage districts within the development. The district limits must be overlaid on a proposed grading plan for the site.
9. All upstream drainage must be accommodated on-site. Allowances for upstream area must be based on ultimate improvements and run-off.
10. Discharge must not be diverted onto abutting properties. The outlet must be in accordance with the existing natural drainage courses in the area.
11. Footing drains shall be discharged by means of sump pumps connected by underground piping to a storm sewer.
12. For new subdivisions and site condominiums, storm sewers shall be extended where required to provide an outlet for sump pump lines for all lots. Exceptions to this rule may be permitted where soils and hydrology studies demonstrate that sump pumps discharging to the ground surface will not cause a drainage problem for the prospective homeowner or the adjacent lot owners.

13. Sump pump discharge lines shall not discharge directly to street gutters.

D. Plan and Profile:

1. All public storm sewers must be shown in profile. For developments larger than one acre the private sewer must also be shown in profile.
2. The following must be shown in profile:
 - a. Length of run between manholes and catch basins.
 - b. Type and class of pipe between manholes and catch basins.
 - c. Size and grade of sewer between manholes.
 - d. Top of casting elevations.
 - e. Inverts of all pipes at manholes.
 - f. Proposed and existing ground elevations along the route of the sewer.
 - g. Progressive numbering system on all manholes and catch basins.
 - h. All utility crossings.
 - i. Special backfill areas.
 - j. Hydraulic gradient for the 10-year design storm.

E. Taps

1. Connections must be made at manholes. Blind taps are not allowed.

F. Detention

1. Any site development must detain the increased run-off on-site. Acceptable means of detention can be achieved through oversize storm pipes or a separate detention basin. Either of these designs may be utilized to achieve the required detention.
2. Reduced detention requirements may be appropriate if a site has a direct discharge to the Huron River. These cases will be reviewed and discussed with the applicant during the site plan review processes. All sites are required to meet water quality standards prior to discharge, including first flush treatment.
3. Storage of water in parking lots will be reviewed on a “case by case” basis but is generally discouraged. Where allowed, that maximum allowable depth is 4”.
4. Sufficient detention volume must be provided so that the allowable discharge rate during the design storm is not exceeded.

5. Discharge must be throttled to a restricted rate.
6. The basin must be constructed to drain entirely unless designed to retain a permanent water level that conforms to the aesthetics of a landscape plan relating to the surrounding landscape.
7. The bottom of the dry basin must be permanently stabilized with maintainable densely rooted turf.
8. A minimum of 12" of freeboard must be maintained with a positive, non-erodible overflow capable of handling the capacity of a 100-year storm.
9. Minimum grade on the bottom of the retention basin shall be 1%.
10. A maintenance agreement shall be required for all detention basins.
11. Design Criteria:
 - a. The outfall from retention basins shall be designed to operate by gravity. Where this is not possible, mechanical pumping is permissible, and such facilities are subject to the review and approval of the City DPS.
 - b. Mechanical lift stations for detention basin discharge shall be designed with a minimum of two pumps, each rated at the allowable discharge rate and provided with an automatic control system to operate the pumps on alternating periodic cycles. The pump control system shall also contain a manual override control. The developer shall furnish all design data on the pumps and discharge force main. The developer shall also include calculations and pump performance curves.
 - c. The allowable discharge must be determined by one of the following: (In no case shall it be more than 0.15 cfs. per acre)
 - 1) Discharge approved by agency having jurisdiction over outlet, i.e. Washtenaw County Office of the Water Resources Commissioner; (approval must be submitted).
 - 2) S.C.S. Technical Release No. 55 "Urban Hydrology for Small Water Sheds"; (calculations must be provided).
 - 3) Allowable flows for which the outlet was designed, (previous calculations must be submitted).

- d. The storage volume required shall be equal to, or greater than, the volume computed for a 100-year frequency storm according to the formulas provided by Washtenaw County Office of the Water Resources Commissioner.
- e. Any volume of water provided below invert of the gravity outfall pipe will not be considered as usable detention capacity.
- f. The formula for an orifice discharge is $Q = 0.62 a \sqrt{2 gh}$

G. Retention

1. Retention basins will only be considered in cases where no other positive outlet for storm water runoff is available. Retention basins with no outlet will be capable of storing two consecutive one hundred year storm events, which can be determined by:

$$V = 2 \times 16,500 \times A \times C$$

2. The proposed storage volume of the retention basin will be based on the total amount of contributing acreage, including all off-site areas that flow onto the property.
3. The applicant must submit soil-boring logs, taken within the basin area to a depth of twenty-five (25) feet below the existing ground or twenty (20) feet below the proposed basin bottom elevation.
4. The ground water elevation must be below the bottom of the basin.
5. A minimum of 12" of freeboard must be maintained with a positive, non-erodible overflow capable of handling a 100-year storm.

H. Public Storm Sewer

1. All public storm sewers must be located in a public right-of-way or an easement. Standard easement forms are available in Appendix C. The easement size will vary as required for maintenance and access. The minimum storm sewer easement shall be 12'. The dedication of the easement will be required prior to City acceptance of the system for continuous maintenance and service.
2. Any storm sewer that accepts runoff from abutting property or public right-of-way must be placed in a minimum 12' storm sewer easement.

I. Materials: Storm Sewer

1. Sewer Pipe:
 - a. Concrete Pipe: Storm sewer pipe shall conform to the current ASTM "Tentative Specifications for Reinforced Concrete Culvert, Storm Drain

and Sewer Pipe", ASTM C-76 for circular pipe, or C-507 for horizontal elliptical pipe, latest revision. If other materials are proposed for use, the proprietor shall furnish the load carrying design analysis for the pipe for the proposed depth conditions.

- b. Plastic Pipe: Plastic pipe will be allowed only in areas outside the influence of paved surfaces. The pipe must be High Density Corrugated Polyethylene (HDPE) with a smooth interior. It must conform to AASHTO M294-Type S.

2. Pipe Joints: Pipe joints shall conform to one of the following requirements:

- a. Modified Grooved Tongue (MGT), pipe shall have a rubber gasket snapped into a groove cast into the tongue. The modified groove or bell end of the pipe shall be made smooth and shall have not over a 3 degree slope for sizes 10" - 24", or a 2 degree slope for sizes 27" - 108", tapered to fit the rubber gasket to tolerances as determined by the gasket manufacturer. MGT joints shall be lubricated and coupled in accordance with the pipe manufacturer's printed instructions.
- b. Rubber gasket joints shall be in accordance with the Tentative Specification for "Joints for Circular Concrete Sewer and Culvert Pipe, Using Flexible, Watertight, Rubber Type Gaskets", ASTM Designation: C-443, latest revision. Rubber gasket joints shall be lubricated and coupled in accordance with pipe manufacturer's printed instructions.

3. Manholes:

- a. Manholes shall be constructed of concrete block or pre-cast reinforced concrete sections in accordance with the City of Ypsilanti standard details in accordance with jurisdictional responsibilities.
- b. Pre-cast reinforced concrete manhole sections shall conform to the requirements of the ASTM "Tentative Specifications for Precast Reinforced Concrete Manhole Risers and Tops", ASTM Designation C-478, latest revision. Wall thickness shall depend on depth and shall be subject to the approval of the City engineer.
- c. Brick for casting adjustment or concrete block for manhole inlet and catch basin construction shall conform to the requirements of the MDOT "Standard Specifications for Road and Bridge Construction", Section 5.14.03, latest revision. Wall thickness shall depend on depth and shall be subject to the approval of the City engineer.
- d. Precast manhole joints shall be as described in Section H, Item 2 of this chapter.
- e. A minimum of three or a maximum of five courses of brick shall be placed above the top of the cone section on all pre-cast or block manholes.

- f. Manhole covers and frames shall be East Jordan Iron Works #1010, #1000, or approved equal, (see standard detail sheets).
- 4. Catch Basins:
 - a. Catch basins shall be constructed of brick, pre-cast manhole blocks, or pre-cast reinforced concrete manhole sections, in accordance with the Municipal standard details.
 - b. Catch basin and inlet frame and covers shall be EJIW No. 5080 or equivalent when located in pavement edge or gutter line.
 - c. Catch basin and inlet frame and covers shall be EJIW No. 1010 Type M cover or equivalent when located in paved areas other than edge gutter line.
 - d. Catch basin and inlet frame and covers shall be EJIW No. 1000 with Type N or Type M cover or equivalent when located in yard areas.

VIII. Water Main

A. Per YCUA Standards

IX. Sanitary Sewer

A. Per YCUA Standards

Appendix A

Engineering Plan Checklist

*Site Plan Submission Requirements Available from the Planning and Development Department

General Requirements

- [] 1. Submitted on 24" x 36" paper with a minimum horizontal scale of 1" = 50' and vertical of 1" = 5'. Oversize plans will not be accepted.
- [] 2. General plan at 1" = 100' or 1" = 200' when size of site prohibits a single plan sheet. Show street names, units, utilities, pavement, site dimensions, phase lines.
- [] 3. Plan completion date with most recent revision date.
- [] 4. Location map showing section number and major thoroughfares.
- [] 5. Lot number, parcel dimensions and adjoining rights-of-way (existing and proposed) clearly shown.
- [] 6. Professional engineer seal (State of Michigan) for all site civil drawings.
- [] 7. Name, address and phone number of engineer, architect and the owner.
- [] 8. Title block, scale and north arrow for each sheet.
- [] 9. Legal description of property that closes within acceptable limits. Provide legal description of R.O.W. dedication, if applicable. Confirm lot and right-of-way consistent with current Tax I.D. Maps and future Right-of-Way Map.
- [] 10. Striping plan for parking lot.
- [] 11. Loading spaces indicated.
- [] 12. Building use indicated and other uses of property including any outdoor storage areas.
- [] 13. Traffic study may be required. City Engineer to determine need during review of plans.
- [] 14. Separate landscape plan. Verify no trees in existing or proposed public easements.
- [] 15. Underground utilities shall not be located closer than 10' from any building or structure.
- [] 16. For residential sites, all private utilities (i.e. gas, electric, etc.) shall be placed in backyards. A note shall be added to the site plan.
- [] 17. Phasing limits shall be clearly identified on the plans.

- [] 18. Truck circulation plan provided with turning movements shown for the largest vehicle.
- [] 19. For residential or multi-unit development, a Development Agreement/Association/Master Deed document with “Exhibit B” must be submitted with maintenance outlined for all improvements, including public road acceptance.

Topographical Survey

- [] 20. A separate current existing conditions and topography plan sheet shall be submitted, sealed by a Professional Surveyor or Engineer licensed to practice in the State of Michigan.
- [] 21. Indicate USGS NGVD 29 benchmarks (minimum of two).
- [] 22. Property lines shown by bearing and distance (Lines to match legal description).
- [] 23. Existing off-site elevations at a minimum of 50’ and 100’ around the property. Elevations at property corners and along property lines and sufficient on-site elevations or contours to establish site drainage.
- [] 24. Show existing conditions; ditches, culverts, utilities (invert and casting elevations), sidewalks, power poles, easements, and finish grade of adjacent buildings.
- [] 25. Show the locations of all existing gas, electric, cable and telephone lines.
- [] 26. Indicate the zoning of all adjacent parcels.
- [] 27. Show existing adjacent roads with both existing right-of-way and future right-of-way per the master plan. Grades must be shown at ditch centerline, top of bank, edge of shoulder, edge of pavement (or top of curb) and pavement centerline. Grades must be shown on both sides of road.
- [] 28. Limits of existing wetlands, regulated or unregulated, shall be shown and any impacts indicated and quantified. If none are located within the influence of the site a note shall be added on the plans.
- [] 29. In accordance with the Huron Watershed Council, the natural drainage pattern of land shall not be altered in any way that might cause adverse effects to existing wetlands.
- [] 30. County drains identified by name with easements shown. “Natural Drainage Courses” also identified (MDEQ jurisdiction).

Water Main

- [] 31. Review and approval from YCUA is require for all water system improvement work, both public and private.

- [] 32. Public water main shall be located in a greenbelt whenever feasible including new gate wells or boxes. In the event that the majority of public main is proposed under pavement, a note shall be added to the plan indicating it's the property owner's responsibility for any pavement repairs as a result of public utility maintenance.
- [] 33. Minimum size water main is 8". Maximum dead-end main lengths are: 40' for 6" fire hydrant lead; 600' for 8" main; 1,000' for 12" main all originating from water main of equal or greater size. Loop mains if these minimums cannot be met, with a gate valve and well provided between the two connection points.
- [] 34. All dead end mains must end with a flushing hydrant then a gate valve and well.
- [] 35. Water main shall extend to adjacent properties as necessary to facilitate future development.
- [] 36. Show water service and size. No private services allowed from 6" hydrant lead or water main larger than 24" in diameter.
- [] 37. A 10' horizontal separation must be maintained between the water main and sanitary or storm sewers.
- [] 38. Minimum 12' wide public easement must be shown on the plans. Permanent structures of any type, including but not limited to, trees, light poles, drainage structures, etc. will not be allowed within the influence of public easements. Verify against landscape plan.
- [] 39. Valve spacing:

In the event of a breakage; three valves to isolate break, four maximum, no more than two hydrants out of service, no more than 24 single-family units or 30 multiple units out of service. Gate valve shall be placed near intersections wherever practical.
- [] 40. Hydrant spacing: Maximum of 500' or as determined by Fire Department.
- [] 41. No parking within a 15' radius of a hydrant.
- [] 42. Water main pipe material shall be shown.
- [] 43. For new developments with proposed cul-de-sacs, water main shall be extended around the entire cul-de-sac to facilitate service taps.
- [] 44. Any public water main proposed on adjacent properties will require a public easement. A letter of understanding with sketch shall be provided from the adjacent owner prior to site plan approval.

Sanitary Sewer

- [] 45. Review and approval from YCUA is required for all sanitary sewer work, both public and private.
- [] 46. Verify that existing sanitary system has capacity to handle the new sanitary flow.
- [] 47. Public sanitary sewer shall be located in a greenbelt whenever feasible including new manholes. If any public sewer is proposed under pavement, a note shall be added to the plan indicating it's the property owner's responsibility for any pavement repairs as a result of public utility maintenance.
- [] 48. Sanitary sewer shall extend to adjacent properties as necessary to facilitate future development. Adequate depth must be provided for service area.
- [] 49. Minimum 20' wide, public easement must be shown on the plans. Wider easement may be required based on depth of sewer. Permanent structures of any type, including but not limited to, trees, light poles, drainage structures, etc. will not be allowed within influence of public sewer easement. Verify against landscape plan.
- [] 50. Pump stations/lift stations will not be accepted unless there is no other feasible alternative. If a pump station is proposed, special language and requirements will be needed in the Development Agreement and on plans. The owner or Association is responsible for all monthly utility bills (e.g. electric, phone).
- [] 51. Show building lead size and location.
- [] 52. Provide minimum of 10' of separation from other utilities.
- [] 53. Sanitary sewer pipe material shall be shown.
- [] 54. Any public sanitary sewer proposed on adjacent properties will require a public easement. A letter of understanding with sketch shall be provided from the adjacent owner prior to site plan approval.

Storm Sewer

- [] 55. Underground storm sewer systems are required for new developments (12" minimum diameter). Private easements indicated as necessary.
- [] 56. Proposed collection points, system layout, sizes and outlets must be shown on the site plan. Also show preliminary invert and rim elevations.
- [] 57. Pump stations will not be accepted unless there is no other feasible alternative. Pump stations must be labeled as private with easements indicated and appropriate maintenance language in the Development Agreement/Association/Master Deed documents. Utility bills and maintenance costs are the responsibility of the developer and/or association.

- [] 58. If connecting to an existing system, provide calculations showing capacity of existing system based on as-built information.
- [] 59. All sump pump drains shall be indicated and must connect to a storm structure.
- [] 60. Minimum 2.5' of cover over system.
- [] 61. Storm sewer pipe material shall be shown.
- [] 62. Upstream/offsite drainage must be accommodated.

Detention

- [] 63. Supply preliminary calculations for site plan review per [the Rules of the Washtenaw County Water Resources Commissioner](#) latest edition. Detention volume required and provided calculations shall be shown.
- [] 64. Acceptable means of detention are open basins, underground storage systems, bioswales, and rain gardens. Parking lot storage requires special approval.
- [] 65. A sediment forebay or other treatment structure (e.g. CDS System, Vortech) is required for all new detention systems.
- [] 66. Aerators shall be incorporated into detention basins and noted on the drawings.
- [] 67. Location and size of detention ponds shown with side slopes indicated.

Paving and Right-of-Way Improvements

- [] 68. On-site paving requirements:
 - a. Pavement cross-section must be shown. Minimums are:
 - 1) Residential (Driveways): 4" Concrete on 6" aggregate base or 3" HMA on 6" aggregate base
 - 2) Commercial and Industrial: Determined on case-by-case basis depending on intensity of use, but in no cases less than residential requirement.
 - b. Slopes:
 - 1) Asphalt: Minimum 1.0% Maximum 6.0%
 - 2) Concrete: Minimum 0.5% Maximum 6.0%
 - c. Concrete curb for entire perimeter of drive or parking areas.
- [] 69. Public right-of-way (City):
 - a. Pavement cross-sections must be shown

- b. All public roads must have curb and gutter unless otherwise approved.
 - c. Turning improvements, center-turn lane, acceleration lane and taper, deceleration lane and taper as necessary to facilitate traffic flow.
- [] 70. Sidewalks required along the frontage of all roads except in districts zoned “RE”.
- a. Located 1’ from ultimate right-of-way line.
 - b. Sidewalk ramps noted, in accordance with A.D.A. standards.
 - c. All structures, hydrants, poles, etc., noted and moved or adjusted as necessary.

Site Grading

- [] 71. Sufficient proposed grades indicated to ensure that:
- a. Drainage is adequately discharged offsite consistent with current drainage pattern.
 - b. No upstream drainage is restricted.
 - c. Paving slopes are adequate.
 - d. The site generally drains without standing water.
- [] 72. Elevation representing the brick ledge, finished grade and the first floor grade must be indicated.
- [] 73. Proposed grading will meet abutting property line elevations. Differentials in grade must incorporate a one on four maximum slope to the abutting property line.
- [] 74. Temporary easement from adjacent property owner will be required for any grading necessary on off-site property. Appropriate notes shall be added to the site plan if this is applicable with a letter of understanding submitted.
- [] 75. Location of any proposed retaining walls shall be shown on plans. Walls separating a grade differential of more than 18” are considered retaining walls and require a structural engineering design and review. Design engineer must supply calculations with engineering plan submittal.

CONSTRUCTION CONTACT INFORMATION

Project Name: _____ Location (include section #): _____

Project Supervisor: _____ OHM Project No.: 0094- _____

Municipality Project No.: _____

Developer/Owner

Company Name: _____

Contact Person: _____

Street Address: _____

City, State & Zip: _____

Phone: _____ Fax: _____

Email: _____

Emergency Contact Number: _____

Design Engineer

Company Name: _____

Contact Person: _____

Street Address: _____

City, State & Zip: _____

Phone: _____ Fax: _____

Email: _____

Emergency Contact Number: _____

Prime Contractor

Company Name: _____

Contact Person: _____

Street Address: _____

City, State & Zip: _____

Phone: _____ **Fax:** _____

Email: _____

Emergency Contact Number: _____

Mass Grading/Earthwork

Company Name: _____

Contact Person: _____

Street Address: _____

City, State & Zip: _____

Phone: _____ **Fax:** _____

Email: _____

Emergency Contact Number: _____

Underground

Company Name: _____

Contact Person: _____

Street Address: _____

City, State & Zip: _____

Phone: _____ **Fax:** _____

Email: _____

Emergency Contact Number: _____

Paving

Company Name: _____

Contact Person: _____

Street Address: _____

City, State & Zip: _____

Phone: _____ **Fax:** _____

Email: _____

Emergency Contact Number: _____

Landscaping

Company Name: _____

Contact Person: _____

Street Address: _____

City, State & Zip: _____

Phone: _____ **Fax:** _____

Email: _____

Emergency Contact Number: _____

Other: Specify: _____

Company Name: _____

Contact Person: _____

Street Address: _____

City, State & Zip: _____

Phone: _____ **Fax:** _____

Email: _____

Emergency Contact Number: _____

PRIOR TO THE START OF CONSTRUCTION: Mark N/A if the item is not applicable to this project.

Check below if an issue is present and identify the issue and/or reference an attachment.

_____Electricity: _____

_____Natural Gas: _____

_____Telephone: _____

_____Cable TV: _____

The following should address any other Municipality concerns, including other possible interested parties:

_____City of Ypsilanti: _____

_____Adjacent Municipality: _____

_____Road Commission: _____

_____Drain Commission: _____

_____MDOT: _____

_____Railroad: _____

_____YCUA: _____

_____Residential: _____

_____Community Development Agency: Developer to pay close attention to approved landscape plan.

PRIOR TO THE START OF CONSTRUCTION *continued*:

The following checked items must be submitted to the Municipality and OHM:

_____ **PERMITS:** Copies of permits may be faxed to the OHM Construction Department at 734-522-6427.

_____ Soil Erosion Permit from the Washtenaw County
Permit # _____ Expiration Date: _____

_____ NPDES (National Pollution Discharge Elimination System - MDEQ)
Permit # _____ Expiration Date: _____

_____ Water Main (Michigan Department of Environmental Quality)
Permit # _____ Expiration Date: _____
YCUA Permit # _____ Expiration Date: _____

_____ Sanitary Sewer (Michigan Department of Environmental Quality)
Permit # _____ Expiration Date: _____
Sanitary Permit YCUA# _____ Expiration Date: _____

_____ Right of Way (Washtenaw County)
Permit # _____ Expiration Date: _____

_____ Right of Way (MDOT)
Permit # _____ Expiration Date: _____

_____ Wetland/Floodplain: (Michigan Department of Environmental Quality)
Permit # _____ Expiration Date: _____

_____ DPS Permit - City of Ypsilanti
Permit # _____ Expiration Date: _____

_____ A Performance Guarantee of \$ _____ must be posted with the City of Ypsilanti. A performance bond must be provided to the Department of Public Works. The bond amount shall be 100% of the construction cost per the approved engineer's estimate.

_____ Construction Fee in the amount of \$ _____ must be paid to the City of Ypsilanti. Send a copy of the paid fee receipt to OHM Construction Department.

_____ Owner's and Contractor's Protective Public Liability and Property Damage Insurance and Contractor's General Liability Insurance shall include the following additional named insured:

1. Ypsilanti Community Utilities Authority and employees and agents jointly and individually.
2. YCUA Board of Commissioners, individually
3. All YCUA employees, agents and consultants, individually.

4. City of Ypsilanti
5. Ypsilanti City Council members and employees, individually.
6. Charter Township of Ypsilanti
7. Ypsilanti Township Trustees and employees, individually
8. Orchard, Hiltz & McCliment, Inc. its employees, agents
9. Washtenaw County Water Resources Commission
10. Any other entities impacted

_____ **SCHEDULE:** Please provide a schedule of work including the anticipation of duration for major elements such as: mass grading, water main installation, storm installation, lead installations, paving activities, and landscape restoration. Fax to OHM Construction Department at 734-522-6427.

_____ **PRE-CONSTRUCTION VIDEO TAPING:** If this section is checked, this project requires the work-site to be videotaped prior to the start of construction and a copy of the video to be mailed to OHM.

_____ **TYPE OF MATERIALS:** Please list the type and class of the materials to be used for this project and provide a copy of the testing orders (suppliers and materials) to the inspector on site.

_____	Sand	_____
_____	Aggregate	_____
_____	Bituminous	_____
_____	Concrete	_____
_____	Sanitary Sewer	_____
_____	Water Main	_____
_____	Storm Sewer	_____
_____	Manholes	_____
_____	Hydrants	_____
_____	Brass/Fittings:	_____
_____	Castings	_____
_____	Signs	_____
_____	Posts	_____

PRIOR TO THE START OF CONSTRUCTION continued:

- _____ Contractor shall provide material certifications to the inspector for any of the above applicable items and any other related items used in the site construction work.
- _____ Excess material should be legally disposed of off-site. **DO NOT** transport any material to other sites (including residential) within the City of Ypsilanti.
- _____ At the request of the City of Ypsilanti, inspection is required for the following: water main, sanitary sewer, storm sewer, retaining walls, public paving, private paving, restoration, landscaping, soil erosion control measures, sump discharges, and _____
- _____ Soil Erosion Escrow in the amount of \$ _____ (TBD by the County) must be paid to the Washtenaw County.
- _____ Three (3) working days notice is required (not including weekends/holidays) to schedule inspection. Applies to construction start and any time that work is suspended for two days or more, contact OHM's Construction Department or Gary Smolinski, Mondays through Fridays 8 am to 4 pm. (734) 522-6711
- _____ Utilities must be staked and dated cut sheets given to inspector before construction may start. This includes water, sanitary, storm and road (where applicable). Fax cut sheets to OHM's Construction Department (734) 522-6427. (Attn Const. Department)
- _____ Notify MISS DIG (800-482-7171) at least three (3) full working days in advance. Keep your reference number for complaints on improperly staked utilities or if no staking was done.
- _____ Density testing will be performed by an independent testing company and not by OHM. The Owner/Developer is responsible for arranging this service as well as the cost for this service. OHM is to be cc'ed on all testing results.
- _____ Any field problems or design changes shall be directed to the Developer's Engineer for re-design then submitted to OHM for approval. All changes must be submitted for approval, approved and distributed before construction will be allowed. Note the revision number and date on all plans.
- _____ Any water used on site, originating from a public fire hydrant or water source, must have a backflow-preventer in place. Contact Bob Fry at YCUA (734-484-4600) for directions on water use and whenever water main flushing occurs. Water usage to be estimated on this project.
- _____ Public and private streets must be maintained in a clean condition and free of debris at all times. In the event that a public roadway becomes dirty, the Contractor shall clean it immediately. The question of the cleanliness of roads and streets will be determined solely by the Municipal road agency or its authorized representative.

PRIOR TO THE START OF CONSTRUCTION continued:

- _____ It is the Contractor's responsibility to comply with all current MIOSHA/OSHA standards where applicable including confined space regulations for new construction. Attendance at the pre-construction meeting by the Contractor's representative acknowledges understanding of this obligation. The Municipality and its engineering consultant (OHM) will not oversee the Contractor's operations from the stand point of safety and are not obligated to act as the Contractor or Subcontractor's safety officer.
- _____ Traffic control must be in compliance with the Michigan Manual of Uniform Traffic Control Devices in conjunction with local construction permit requirements or stipulations and any detour, staging or traffic control diagrams incorporated into approved plans.
- _____ Sidewalk Ramps – Sidewalk ramps are to be installed per the latest approved details (MDOT R-28 Series) per the Americans with Disabilities Act (ADA). Any ramps placed that do not meet the latest approved details per the ADA will be removed and replaced at the developer's or contractor's expense.

_____ **WATER MAIN**

- _____ Water main shall be constructed per the Municipalities Standard Water Main Details. Where conflicts occur between the general plans and the standard details, the conditions in the standard details shall govern.
Refer to the YCUA Water Main Standards for current material requirements.
 - Gate Valves in The City of Ypsilanti OPEN RIGHT (standard red valve operator nut).
 - All water main to be installed with Polyethylene encasement (Poly-wrap).
 - All Water main outside the influence of the road will have class II sand under and at least one foot over the pipe.
 - All water main inside the influence of the road will have class II sand under and all the way up.
 - The contractor will propose and use a compaction method that guarantees the haunches of the pipe are compacted properly.
 - Thrust blocks are not permitted except behind tapping valves, and behind fire hydrants to virgin ground. All other joint restraint to be provided by mechanical joint retainer glands (i.e. Mega-Lug), and/ or locking gaskets.
No Waterous Pacer Hydrants
- _____ Pressure testing will be conducted by the contractor with OHM witnessing on behalf of the Municipality. Water main testing shall be per AWWA Standards. Notify OHM (Site Coordinator) of schedule (3 working days prior to test). Prior to any utility testing, the remaining escrow amount will be reviewed to verify that there is enough escrow to complete the project
- _____ No bacterial tests will be performed until pressure tests have been passed. Bacteria samples (two consecutive days) will be obtained by the OHM Inspector, with the

Contractor present. Chlorination and Flushing will be conducted by the contractor and documented by OHM. The contractor will use one of the chlorination methods outlined in YCUA standard details.

Contractor may decide where the samples will be tested; either a County Lab (results available no sooner than one week) or a private testing facility (paid by the contractor). Hard copy results must be on file at OHM prior to any tie-in.

PRIOR TO THE START OF CONSTRUCTION continued:

_____ No water main tie-ins are allowed until bacteria and pressure tests have been passed. When a tie-in does occur, all flushing of the main will have been stopped, all apparatus disconnected, and all valves opened. No water main tie-ins are allowed until bacteria and pressure tests have been passed. Notify OHM 72 hours in advance of any water main shutdowns. The contractor is responsible for notifying any affected residents 24 hours before any water main shutdown. When a tie-in does occur, all flushing of the main will have been stopped, all apparatus disconnected, and all valves opened. No water main tie-ins will be allowed on Friday.

_____ **SANITARY SEWER**

_____ Sanitary sewer shall be constructed per YCUA Standard Sanitary Sewer Details. Where conflicts occur between the general plans and the standard details, the conditions in the standard details shall govern.

_____ Sanitary taps into existing structures will be inspected by OHM. Taps into existing structures shall be neatly core-drilled and a rubber boot shall be used for the new pipe.

_____ Sanitary sewer invert elevations will be recorded by the inspector and the contractor at each structure. Sanitary sewer main that is found to be laid at less than minimum-specified grade, or with backflow, will not be accepted by YCUA.

_____ If there are any fitting in the force main, Hydrostatic pressure testing will be conducted by the contractor and witnessed by OHM on behalf of YCUA (150 psi for one hour with less than 5psi loss). Contact OHM to set up test date. Prior to any utility testing, the remaining escrow amount will be reviewed to verify that there is enough escrow to complete the project.

_____ Videotaping of the sanitary sewer is to be performed no sooner than 30 days after completion of backfill and a copy of the tape must be on file with OHM prior to acceptance.

_____ A nine-point deflection test using a mandrel is required 30 days after the pipe is backfilled by YCUA standards. This may be difficult as there is not a dead end manhole. The camera will have to push or tow the mandrel up the run and then pull it back watching the mandrel.

_____ Coordinate construction and inspection of all sanitary service leads within 10 feet of the building with the Ypsilanti Township Building Department at 734-485-3943.

_____ **STORM SEWER / UNDERGROUND DETENTION**

To be constructed per the approved plans.

PRIOR TO FINAL ACCEPTANCE OF PROJECT

- _____ OHM will conduct a Preliminary Walkthrough of the site after all public utility installation is complete, and after at least the leveling course of asphalt pavement is complete. A Preliminary Utility Punch list will be generated from this walkthrough. Once the items on the Preliminary Utility Punch list have been completed, OHM will issue a letter to YCUA recommending the public utilities on the project are substantially complete. ALL MAINTENANCE AND OPERATION OF THE PUBLIC UTILITY IMPROVEMENTS ON THE PROJECT WILL REMAIN THE RESPONSIBILITY OF THE DEVELOPER / CONTRACTOR DURING THE TIME PERIOD FROM SUBSTANTIAL COMPLETION TO FINAL ACCEPTANCE. OHM, Inc. will only recommend Final Acceptance of the project upon satisfactory completion of all Close-out items, including but not necessarily limited to, Record Drawings, Easements, Maintenance and Guarantee Bond, and Final Utility Inspection.
- _____ OHM may conduct one or more Interim Walkthroughs on long-term projects to identify items that are damaged as construction occurs.
- _____ OHM will conduct a Final Walkthrough of the site after all construction on the project is complete. This includes all buildings, landscaping, and wearing course of asphalt pavement. A Final Utility Punch list will be generated from this walkthrough and shall be transmitted to the Developer and their Contractor. The Contractor shall have thirty (30) days to rectify all items on the punch list. Failure to do so may result in the temporary or permanent Certificate of Occupancy to be withheld. All items on the Final Utility Punch list must be completed prior to Final Acceptance of the project.

RECORD DRAWINGS AND RELATED DOCUMENTS

- _____ After public utility installation is complete, the Developer's Engineer will be provided (by OHM) a copy of the Inspector's Daily Reports (IDR), any applicable lead reports, and a blank "Record Drawing Requirement Checklist" in order to prepare record drawings to OHM for review and approval.
- _____ A grading certificate will be requested at this time. This form (provided by OHM with IDR's) will also need to be signed and sealed by the Developer's Engineer and then submitted to OHM along with the record drawings.
- _____ Easements for public utilities based on "As-Built" conditions requires a sketch and legal description to be submitted by the Developer's Engineer to OHM for review and approval along with the record drawings. Once easements documents are approved, OHM will mail the Developer/Municipality the easements to be recorded with the County Register of Deeds. Once the easements are recorded with liber and page number, recorded copies will need to be forwarded to the Municipality and OHM.

- ____ Once the record drawings are approved by OHM, the Developer's Engineer will be instructed As to what is required for final distribution (i.e. Blulines, mylars, CD-ROM, or possibly micro-film)..
- ____ A Maintenance and Guarantee bond for 50 % of applicable Public Works based on the engineer's estimate of \$_____ for a duration of **2 years** shall be submitted to the Municipality once all Final Utility Punchlist items have been addressed. A blank form will be forwarded to the developer once final inspection has passed. Please be aware that the duration of the maintenance bond is determined on the date of final acceptance.

Sidewalk ramps per ADA specifications. Please refer to MDOT R-28 Series Detials if you have any doubt.

ITEMS REQUIRED FOR RECOMMENDATION OF PROJECT CLOSEOUT

- ☐ **As-builts:** reviewed and approved CADD Files
- ☐ **Grading certificate:** signed and sealed
- ☐ **Easements Required:**
 - ☐ Water Main ☐ Sanitary Sewer ☐ Storm Sewer
 - ☐ Safety Path ☐ Ingress/Egress
 - ☐ Other _____
- ☐ **Maintenance and Guarantee Bond**

A maintenance and guarantee bond for 50% of applicable Public Works based on the Engineers Estimate of \$_____ for a duration of 2 years shall be submitted to the municipality once all punch list items have been addressed. The amount required for this project is \$_____. A blank form will be forwarded to the Developer once final inspection has passed. Please be aware that the duration of the maintenance bond is determined on the date of final acceptance.
- ☐ **Passing Final Inspection**

ADDITIONAL NOTES:

All landscaping to be installed per approved landscape plans.

Appendix B

MAINTENANCE AND GUARANTEE BOND-SITE DEVELOPMENT

(This should be drafted on legal size paper)

Obligee Review or Project No. _____ Bond No. _____
(if applicable)

KNOW ALL MEN BY THESE PRESENTS:

That we, the developer, _____ (hereinafter called Principal), and _____ (hereinafter called Surety), a corporation organized under the laws of the State of _____ and authorized to do a surety business in the State of Michigan, are held and firmly bound unto the municipal/public agency known as _____ (hereinafter called Oblige) in the full and just sum of _____ Dollars and _____ Cents (\$ _____), lawful money of the United States of America, for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, said Principal has constructed or caused to have constructed the following described public improvements in a public easement and/or right-of-way:

(Check all applicable items)

_____ ft. Storm Sewer System	_____ ft. Roadway
_____ ft. Sanitary Sewer System	_____ ft. Sidewalk or Pathway
_____ ft. Water Main System	_____ Other: _____

which have been or are about to be accepted by the Oblige for the project known as _____ and located in Section _____, T _____, and R _____; more specifically at _____.

AND WHEREAS, it is required that the Principal should guarantee the project from defects caused by faulty materials or workmanship for a period of _____ year(s) from and after the date of acceptance of same by the Oblige.

The Oblige shall notify the Principal in writing of any defect for which the Principal is responsible and shall specify in said notice a reasonable period of time within which the Principal shall have to correct said defect. If the Principal fails to correct such defect within the time specified in said notice, then the Surety shall have sixty (60) days thereafter within which to take such action as it deems necessary to insure performance of the Principal's obligation. If such defect is not corrected after the expiration of such sixty-day period, then the Oblige shall have the right to correct such defect and the Principal and Surety, jointly and severally, shall pay all costs and expenses incurred by Oblige in correcting such defect; including but not limited to, the engineering, legal, administration and other costs, together with any damages either direct or consequential, which the Oblige may sustain on account of the Principal's failure to correct such defect. In addition, the Oblige shall have the right to contract for the correction of such defect and, upon acceptance of the lowest responsible bid, the Principal and Surety shall become immediately liable for the amount of the said bid.

If any repair is necessary to be made at once to protect life and property, then and in that case, the Oblige may take immediate steps to repair or barricade such defects without notice to the Principal or Surety. In such accounting, the Oblige shall not be held to obtain the lowest figures for the doing of the work, or any part thereof, but all sums actually paid therefore shall be charged to the Principal or Surety. In this instance, the judgment of the Oblige is final and conclusive.

The Principal shall fully indemnify, defend and save harmless the Oblige, and its agents, consultants, employees and officers from all suits and actions for damages of every name and description brought or claimed against them for, or on account of, any injury or damage to person or property received or sustained by any party or parties, by or from any of the acts or omissions or through the negligence of said Principal, and its servants, agents

or employees, in the prosecution of the work, and from any and all claims arising under the Workman's Compensation Act, so-called, of the State of Michigan.

NOW, THEREFORE, if the said Principal shall for a period of ____ year(s) from and after the date of acceptance of the completed project by the Obligee replace any and all defects arising in said work whether resulting from defective materials or defective workmanship, then the above obligation shall be null and void; otherwise to remain in full force and effect for ____ year(s) from the date of acceptance by the Obligee.

IN WITNESS WHEREOF, the parties have caused this instrument to be signed and sealed by their respective authorized officers this _____ day of _____, 20____.

WITNESS

Name: _____

PRINCIPAL

(seal)

By: _____

Name: _____

Title: _____

Address: _____

Phone: _____

Fax: _____

SURETY

(seal)

By: _____

Name: _____

Name: _____

Title: _____

Address: _____

Phone: _____

Fax: _____

Appendix C

PUBLIC UTILITY EASEMENT

_____, (marital status must be filled in)
“grantor,” whose address is _____,

Ypsilanti, Michigan, in consideration of the sum of One (\$1.00) Dollar, receipt of which is hereby acknowledged and determined to be fair and just compensation by grantor, does, by these presents, covenant and warrant that grantor is the fee simple owner of the property described in **Exhibit A**, attached hereto, and does grant and convey to the Ypsilanti Community Utilities Authority, a Michigan municipal corporation, referred to in this agreement as “grantee,” whose address is 2777 State Road, Ypsilanti, Michigan 48198, a permanent and perpetual easement and right-of-way upon, over, under and across that portion of said property described in **Exhibit B**, attached hereto, for the purpose of construction, installation, inspection, maintenance, repair, operation, alteration, removal (and similar and related activity) of municipally owned utilities, including, without limitation, water lines and/or pipes, storm sewer lines and/or pipes and sanitary sewer lines and/or pipes and any and all connections thereto.

The grantor agrees not to build or to convey to others permission to build any permanent structures on the described easement (**Exhibit B**).

The grantee, by its employees, agents or independent contractors shall have full right, upon, over, under and across said property for the purpose of constructing, installing, inspecting, maintaining, repairing, operating, altering or removing (and similar and related activity) said municipally owned utilities and, further, for the purpose of storing or moving machinery, materials or other incidentals in connection with and during such activity. Further, grantee, by its employees, agents, or independent contractors shall have a permanent easement consisting of the full right of ingress and egress over and upon other lands of the grantor necessary to and for the sole purpose of gaining access to said property and municipally owned utilities.

Upon completion of such construction, installation, inspection, maintenance, repair, operation, alteration or removal (or similar and related activities) of said municipally owned utilities including ingress and egress thereto, any and all of grantor’s property used for said purposes shall be left as nearly and as reasonably possible in the same condition as before such work began and all machinery, materials and equipment shall be removed.

The granting of the permanent easement as stated, including a permanent easement for use of grantor’s property for ingress and egress shall vest in the grantee the authority to use said property solely for the purposes designated in this agreement. This grant of easements shall run with the land and shall be binding upon the heirs, successors and assigns of the grantor and grantee. It is understood and agreed that any and all improvements or appurtenances of the municipally owned utilities in or upon the said property shall become and remain at all times the property of the grantee, its successors and assigns and shall be subject to the grantee’s fees, rules, regulations and local ordinances.

IN WITNESS WHEREOF, grantor has executed this instrument on _____, 20__ .

IN THE PRESENCE OF:

(Witnesses and grantor must print or type name below signature in black ink.)

WITNESSES:

GRANTOR

Subscribed and sworn to before me this _____ day of _____, 20__.

Notary Public
_____ County, Michigan
My Commission Expires: _____

**This instrument drafted by and when
recorded, return to:**

Thomas E. Daniels (P29565)
Pear Sperling Eggan & Muskovitz, P.C.
1349 S. Huron Street, Suite 1
Ypsilanti, MI 48197

Tax Identification No.: _____

EXHIBIT A

Insert a stamped and sealed survey of the subject property.

EXHIBIT B

Insert a stamped and sealed sketch of the easement

Appendix D

GRADING CERTIFICATION

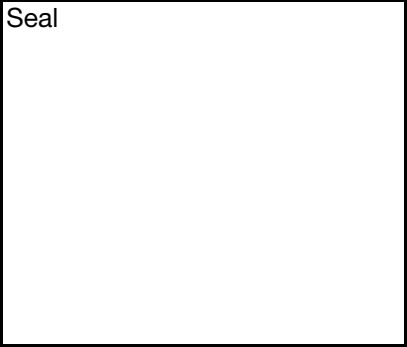
Submit a sealed grading certificate attesting that finish elevations are in compliance with approved grading plan along with the as-built grading plan(s) showing any changes that were made in the field.

These documents were prepared by:

Print Name

Signed

Seal



ENGINEER'S CERTIFICATE OF OUTLET

Date _____

Development Name / Address _____

City of Ypsilanti Sec. _____

Washtenaw County, Michigan

I hereby certify that the existing drain and/or stormwater collection system is the only reasonable available storm water outlet for the proposed storm water management system and that the existing drain and/or stormwater collection system has sufficient capacity to serve as an adequate outlet for the proposed system, without detriment to or diminution of the drainage service that the existing outlet presently provides.

Signed: _____

Registered Professional Engineer

NOTE: The engineer's certificate must be stamped with the engineer's seal.
The certificate submitted must be the original.