# APPLICATION
# TO INSTALL A CTROSSING OR MODIFY A COUNTY DRAIN

Name of Drain: _____

Applicant's Name: _____

Mailing Address: _____

Phone Number: _____ email address: _____

Parcel ID Number: _____

Contractor's Name: _____

Contractor's Address: _____

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CROSSING

Crossing Type: Bridge_____ Culvert_____ Rock Ford_____ Other_____

Crossing Width x Height or Diameter _____ Crossing Length_____

**PLEASE SUBMIT A LOCATION MAP AND SKETCH OF THE PROPOSED CROSSING**

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MODIFICATIONS

Deepening/Widening_____ Relocation_____ Other_____

Length of Drain to be Modified _____

**PLEASE SUBMIT A LOCATION MAP AND SKETCH OF THE PROPOSED WORK**

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I do hereby make application for a permit for the above described work to be performed on the _____ Drain at the following location: _____
in the Township of _____, Kalamazoo County, Michigan.

Date: _____ Applicant's Signature: _____

Print Name: _____

**SUMMARY OF REQUIREMENTS FOR**
**INSTALLATION OF A CROSSING OVER A COUNTY DRAIN**

1. Sizing:
   (1) For drainage areas of 2 square miles or more, crossing must meet the requirements of the Floodplain Control Section, Part 31 of Act 451, PA 1994.

   (2) Bridges shall be designed to provide a 2-foot-minimum freeboard to the underside (low chord) of the bridge for a 100-year flood. Footings shall extend at least 5 feet below the bottom of the channel.

   (3) Culvert inverts shall be recessed below the design bottom elevation of the last drain project of record to a depth of 0.5 foot, or a depth not to exceed 15 percent of the total height of the culvert, whichever is less.

   (4) Culverts serving a drainage area of less than 2 square miles shall be designed for a minimum 10-year storm in the developed watershed with a maximum outlet velocity of 8 feet per second. A maximum of 1 foot of inlet submergence may be permitted if this does not back up water out of the easement. The effect of the 100-year storm will be reviewed to ensure no adverse increase in water elevation off the development property or flooding of structures within the development.

   (5) Sizing of culverts and bridges shall be performed using the Bernouli Equation and include consideration of inlet and outlet control, entrance and exit losses, and tailwater condition. Published culvert nomographs, HEC-5 charts, and other computer software may be used.

   (6) Minimum diameter of a drive culvert shall be 12 inches.

   (7) Minimum diameter of a road crossing culvert shall be 18 inches or equivalent pipe arch.

   (8) Clearspan structures are desirable and shall generally be required by the Drain Commissioner. Exceptions may be made at the Drain Commissioner's discretion. In all cases, the proposed structure shall span the base flow channel. Crossing lengths will be approved by the Drain Commissioner.

2. End Treatment:
   Headwalls, wingwalls, and all other end treatments shall be designed to ensure the stability of the surrounding soil. MDOT, County Road Commission, or manufacturer's designs may be used. Any structures removed such as headwalls, wingwalls, concrete slabs, riprap, erosion control devices, tiling, and culverts (metal, plastic, or concrete) must be replaced with new material and reconstructed to original condition or better.

3. The structure shall be firmly anchored in place.

4. All crossing shall be new and of suitable material unless otherwise inspected and approved by the Drain Commissioner. Culverts may be reinforced concrete pipe, corrugated steel pipe, or pipe arch in accordance with applicable ASTM specifications.

5. All reconstructed or disturbed ditch banks or side slope must be a minimum 2:1 slope (2 foot horizontal to each 1 foot vertical rise), compacted, topsoiled, seeded, and mulched. If the bank or side slope is less than a 2:1 slope, mechanical retaining devices such as headwalls, wingwalls, or riprap must be installed.

6. The Permittee is responsible to ensure that the proposed crossing is structurally sound and of sufficient width for the intended use and anticipated loads.

# PERMIT
# TO INSTALL A CROSSING OR MODIFY A COUNTY DRAIN

The _____ Drain Drainage District, by and through the Kalamazoo County Drain Commissioner (hereinafter "Drain Commissioner"), does hereby grant permission to _____ of _____ to use of a portion of the established right-of-way/easement for the _____ Drain in _____ Township(s), Kalamazoo County, Michigan. This permit is issued for the sole and only purpose of allowing Permittee the following use:

In consideration of granting this permit, Permittee does hereby agree to comply with all terms and conditions as set forth in this permit, together with the following rules and regulations as established by the Kalamazoo County Drain Commissioner:

1. Commencement of work set forth in the permit application constitutes acceptance of the permit as issued.
2. Failure to object within ten (10) days to the permit as issued constitutes acceptance of the permit as issued.
3. A minimum of seventy-two (72) hours notice is required to the Drain Commissioner's office prior to any construction that will involve a county drain.
4. Permit application must be completely filled out and accompanied with a detailed plan or sketch outlining the proposed activity. The sketch or drawing shall include a sectional view of the drain or crossing, construction details, and the location of the work on the property.
5. All crossings shall be designed in accordance with the Summary of Requirements for Installation of a Crossing Over a County Drain (attached).
6. Equipment and materials may not be stored in any way so as to cause blockage of a County Drain.
7. Permittee is responsible for maintaining all storm drainage during the time of construction, whether by use of pumping equipment or construction of a bypass system.
8. Prior to issuance of a permit, proof of Contractor's Liability Insurance may be requested by the Drain Commissioner in compliance with the Kalamazoo County Drain Commissioner's Insurance Certificate Requirements.
9. This permit does not relieve the applicant from meeting any other applicable requirement of law or of other public bodies or agencies, i.e., local, state, or federal.
10. Permittee shall hold harmless the Drainage District, the Drain Commissioner, or Drainage Board, and County of Kalamazoo for any liability or negligence connected with performance of the work.

11. Any failure of the work performed under this permit that causes an obstruction shall be subject to the provisions set forth under Section 280.421 of the Michigan Drain Code, Act 40 of the Public Acts of 1956, as amended.

12. Additional Permit Requirements:

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ACKNOWLEDGMENT AND AGREEMENT

The terms and conditions of this permit and attachments hereto are acknowledged by _____ (Permittee) of _____.

Dated: _____

WHEREFORE this permit is granted to this _____ day of _____ 20____.

_____
Kalamazoo County Drain Commissioner