

THE MEDINA COUNTY ENGINEER QUARTERLY UPDATE

2003 - ISSUE #3

David L. Miller, P.E., P.S.



DRIVEWAY CULVERTS

The Medina County Engineer's Office handles all permitting for driveway aprons in County right-of-ways and most Township right-of-ways. Inspection of the sites prior to, and after installation help to insure that the correct culvert pipe is installed when needed, that the apron conforms to the minimum width at the road edge, that no drainage problems arise for either the roadway or the property owner, and that the installation itself conforms to the required specifications of the County Engineer. When the permit is mailed to the homeowner or builder, standard drawings giving the basic requirements are also sent out for better understanding.

The slope of the drive and apron is also very important in preventing water from running onto the roadway, possibly creating hazards to the traveling public such as ice during winter months. Most of the specifications



are not only for insuring the safety of the traveling public and prevention of damage to the highway right-of-way, but also to prevent possible liabilities to the property owner as well as the County or Township.

It has been determined that a safe access from a normal two-lane highway, with speeds over 35 mph, requires that the apron flair out to a width of thirty feet where it meets the roadway. A driver would then technically be able to pull into the drive without veering into traffic and possibly causing an accident. Thus, one of our specifications for a through County roadway, is that drive aprons must measure a minimum of thirty feet wide at the road edge to insure safe access to and from the property.

Another specification is for the installation of an



asphalt patch connecting a concrete drive apron to the roadway. This only applies to non-curb and gutter, concrete roadways. Concrete aprons poured to an asphalt or gravel road created hazards for the snowplow drivers, as many of the concrete aprons would lift up and above the road edge during the freeze/thaw weather, creating a barrier that damaged the snow plow, destroyed the apron, or both. As a result, the County Engineer requires a stepdown of three feet by two inches to be left at the apron edge for an asphalt patch. The County installs the patch on drive aprons located on County roadways, and on certain Township roadways. There are some Townships that require the owner to install or have installed, the asphalt patch. There have been few, if any, cases of snowplow or apron damage as a result of this requirement.

Sizing culvert pipes for driveways can be difficult. As the surrounding land accepts more and more

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development, we see many things occurring that have changed the amount of water flowing through existing ditches. Many existing driveway culverts, once able to handle the water flowing through the ditchlines now see changes in the surrounding area that have made their culverts obsolete. Once made up of fields and farms, grading for subdivisions and new housing has concentrated the water flow, many times increasing the amount of water now flowing through the ditchlines to the point that culvert pipes can no longer handle the amount of water attempting to flow through them.

In sizing culvert pipes, not only the ditchline and roadway must be considered, but also the possibility of future construction that may effect the area.

This year has seen the arrival of not one, but three "fifty-year" rains, causing excessive flooding throughout the County. For the most part, our newer culvert pipes are sized for the area and usually for 100-year rains. Luckily, many of the culverts sized and installed within



the last few years were able to withstand the torrential rains without washing out. But as stated earlier, unfortunately there were older drives with now under-sized culverts and some of these culvert pipes were just not able to withstand the additional waters.



This year will find Medina County and many of the surrounding counties working hard to handle the many repairs resulting from the excessive rains and flooding, as well as catching up on regularly scheduled work after the prolonged rainy weather.

TRAFFIC STUDY COMPLETED

Mark Hartman, Traffic Technician

A traffic study has recently been completed for the intersection of Medina County Highway #49 (River Styx Road) and Medina County/Montville Township highway #4 (Smith Road). The initial study was conducted as part of a traffic impact study for Brook Hollow Subdivision. After reviewing that study, it was decided to hire Traff-Pro Consultants to do a more in-depth study of the intersection. The results of this study showed that enough warrants were satisfied to merit the installation of a traffic signal at this location. Only one warrant needs to be met in order to install a traffic signal. The Warrant for Peak Hour Vehicular Volume alone justified the installation of this traffic signal.

The old Ohio Manual of Uniform Traffic Control Devices listed 11 Warrants:

- Warrant #1 - Minimum Vehicular Volume
- Warrant #2 - Interruption of Continuous Traffic
- Warrant #3 - Minimum Pedestrian Volume
- Warrant #4 - School Crossings
- Warrant #5 - Progressive Movement

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Warrant #6 - Accident Experience
Warrant #7 - Systems
Warrant #8 - Combination of Warrants
Warrant #9 - Four Hour Volume
Warrant #10 - Peak Hour Delay
Warrant #11 - Peak Hour Volume

The old OMUTCD was used for the traffic signal warrants. The new OMUTCD was adopted this year. This manual is based on the Federal MUTCD. It lists only seven warrants:

Warrant #1 - Eight-Hour Vehicular Volume
Warrant #2 - Four-Hour Vehicular Volume
Warrant #3 - Peak Hour
Warrant #4 - Pedestrian Volume
Warrant #5 - School Crossing
Warrant #6 - Coordinated Signal System
Warrant #7 - Crash Experience
Warrant #8 - Roadway Network

A design plan for this intersection was submitted by Traff-Pro in the Fall of 2002. After several reviews and changes, it was advertised for bid on June 26, 2003. The bid was awarded to Linward Electric in the amount of \$50,749.75. Construction is expected to start at the end of September, and the completion date is scheduled for October 31, 2003.

SPECIAL HAULING PERMIT

The Medina County Engineer's Office is one of the few County offices in Ohio that enforces a permit system to allow the operation or movement of vehicles or combinations of vehicles of a size or weight of the vehicle or load exceeding the maximum specified in Sections of the Ohio Revised Code. Under the Medina County Commissioners Highway Use Manual, permit procedures were set forth to serve as a guide in establishing uniform methods for the application of regulations governing the issuance of permits to operate or move such vehicles or combinations of vehicles of a size or weight of vehicle or load exceeding the maximum specified in O.R.C. Sections 5577.01 to 5577.09 on or across any and all Medina County maintained highways and/or appropriate Township maintained highways.

Under the County regulations, Inspectors (Permit Technicians) are responsible for checking the proposed routes, examining the roadways and structure conditions and reviewing the information

listed on the permit application. Special Hauling Permits are given with the understanding that with approval, or special requirements, the move can be made without causing damage to highways, bridges or culverts or without causing unnecessary inconvenience to the traveling public.

Review time is governed by the amount of weight and size of the vehicles or loads to be moved, together with the length of the proposed route, and the impact the move will have on the highway. It usually takes 2-7 working days for processing any application. If the move would materially affect the appearance, operation or maintenance of the highway, a conference is scheduled to discuss possible revisions to the proposed route and/or reductions in size and weight of the load.

Applicants are required to furnish a Certificate of Liability Insurance for specified limits, a Surety Bond and a Special Contractual Endorsement prior to receiving a Special Hauling Permit. The Surety Bond is set up in amounts determined by the length of route and type of permit.

Medina County has designed different types of Special Hauling Permits to suit the needs of our County. There are three types used the most frequently:

1. Trip and Return Permits (similar to the State's) are for overweight loads to travel to and from a single location. This is used by most of our local contractors to deliver heavy construction equipment to work sites.
2. Annual Overwidth Permits cover legal weight loads that are from 8'6" up to and including 12' width. A single permit will cover the tractor and any trailers or legal loads that fall within this gross width for a period of one year.
3. Seasonal (Frost Law) Permits cover normally legal-weight loads during the weight limit reduction period listed for County/Township roads during the period of January 15th through approximately April 15th of each year (or such time as the County Engineer deems the Frost Reduction lifted). Applicants that cannot reduce their loads to travel during the weight reduction period can apply for a permit for each tractor for the season. The applicant must call prior to EACH move. The Engineer's Office then determines on a daily basis, whether the routes requested may be traveled over that day, whether an alternate route must be taken, or

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whether travel has been denied completely because of the danger of damage to the roadways.



Medina County also has Construction Permits, Steel Coil Permits and Special Permits. Permits requiring special conditions (ex. "Super Loads", house moves, modular homes) are reviewed by the Engineer's office and any special arrangements, routing, bonds, escorts, videoing of the roadway, contact with utilities, etc. will be made with the applicant and all applicable parties. Each permit is reviewed individually to determine what arrangements will need to be handled and whether the permit will be granted.

Our office issues well over one thousand Special Hauling Permits every year. The amount of permits requested for modular homes has increased the last several years, and we are seeing various large pieces of manufacturing pieces traveling into and through our County. We have also had several historic homes,



including a 3 story brick house with porch and small steeple, moved from one area to another in the County. Those moves have included utility lines that were removed or moved, mailboxes removed, trees trimmed, videos before and after the move, police monitoring closed roads, inspectors and many, many hours. It was a fascinating trip as the large house inched down the roads, filling the whole right-of-way with its 22 foot wide area!

The permitting and monitoring of the various heavy, wide and oversized vehicles and loads has helped Medina County to maintain the quality of our roadways.

2003 MEDINA COUNTY MAPS

Beth Mika, Tax Map Technician

The 2003 County Map has arrived! Its printing is the culmination of many years of good decisions and foresight by Dave Miller, Doug King, Lowell Filak, Roxana Rohrich and the now retired Richard Simmons. In addition, kudos should be given to the dedicated work by the employees of the Tax Map and Computer Departments.

Background 'The Old Way'

The Medina County Road map was traditionally updated every two years. The Tax Map Department was responsible for the update. When a new map was printed, we immediately kept track of changes for the next edition. New road locations, road names and annexations were noted on a 'working' copy. Additions and corrections were made as needed. As you can imagine, two years later, when it was time to produce the next map, our working copy was worn and somewhat tattered.

We then moved on to the updating phase. We received a mylar copy of the old map from the publisher along with a transparent mylar overlay that was to be used for updating. All of the corrections and changes were made on the top mylar layer. We would then begin a repetitive mailing process of proofs and corrections with the publisher until we were satisfied with the final product.

The copyright for the county map was owned by the publisher/printing company. Medina County's map reproduction rights were restricted and the use of any map images required permission from the owner.

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'The New Digital GIS Way'

In 1995 we plunged into the digital mapping world. We left our paper tax maps behind and moved forward with a Geographical Information System (GIS), which would put us on the road toward owning the rights to our own information and map product.

The first attempt at producing the Medina County Highway Map in-house was labor intensive. All other projects were put on hold and a concentrated effort was put forth on the map. A good foundation was the key. The Tax Map Department has been diligent in maintaining a detailed true database. We have been running our Tax Map Maintenance system for seven years and striving for a concrete factual representation of Medina County parcel layer. This layer includes but is not limited to parcel lines, owner information, taxing districts, road centerlines, lot lines, railroad right-of-way and track locations. The key to a good highway map is the taxing district boundaries and road and railroad centerlines. We were very confident in the data.

Decisions must be made involving placement, color and symbology for the data that is to be represented on a map. Road names and numbers were painstakingly placed into a text coverage, being careful to avoid conflict with highway shield, church and school markers.

Another goal was to create a county road map that would be more cost efficient and functional. Initially our costs have remained unchanged, and we were able to increase the map size resulting in a more legible product. We will continue to address expenditures and quality to ensure that Medina County Residents receive the best product for the money spent.

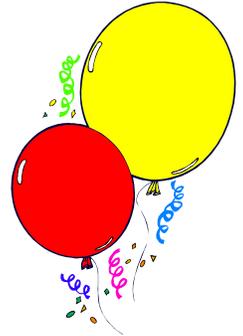
Functionality has improved tremendously. Medina County Highway Engineer's ever improving website now contains .pdf files of each township, city and village cut directly from the county map. Many local groups and individuals have accessed this feature to print a letter size map of their community at the click of a mouse. You can check out our website at www.highwayengineer.co.medina.oh.us.

GIS offers a wealth of information to be examined and queried. It's all about layers. There are 93 layers on the Medina County Highway Map consisting of polygons, lines, points, text and images. Each of these layers contain both shared and unique attributes. Very simple shapes and forms are the framework of a GIS

system. These layers, together, will hopefully create a visual representation of the data that is clear and concise to the end user. So, the next time you pull out a highway map, that leads you to places unfamiliar, I hope you find your way - with the help of a few good layers!

HAPPY BIRTHDAY to all those full-time employees born in the months of July, August and September!!!

Steve Hawk, Doug King, Rich Moore, Sandy Truelson, Connie Gibson, Dan Metz, Janine Sarnowski, Pam Warner, Jane Blair.



EMPLOYEE NEWS

Fairwell to Nanci Gott, Permit Clerk for the Engineer's Office. Nanci has accepted a position outside of the County. Her last day was August 15th, and we wish her the best of luck in her new position.

Speaking of Permit Clerks..... After receiving over 100 applications for the position, Jane Blair was selected and accepted the position of Permit Clerk and began training late this September. Jane comes to us with extensive front desk customer service experience as well as a history of computer and office knowledge. We all welcome Jane to our team.

A special thank you to all of our Permit Staff who have been filling in at the Permit desk during the last month. Even with a busy schedule, everyone has done a wonderful job keeping the daily routine running smoothly. Thank you once again for all your hard work!!

Leadership Medina County 2004 Class

The Board of Trustees of Leadership Medina County has selected the newest leadership class, the Class of 2004. These individuals were recently selected to participate in Leadership Medina County's education and leadership enhancement program for the 2003-2004 year. Michael Salay, Assistant County Engineer was selected as one of those in the 2004 class this year. Congratulations!

Next issue printed the first week of January. Please send in any information you may wish to have in print no later than December 20th.