

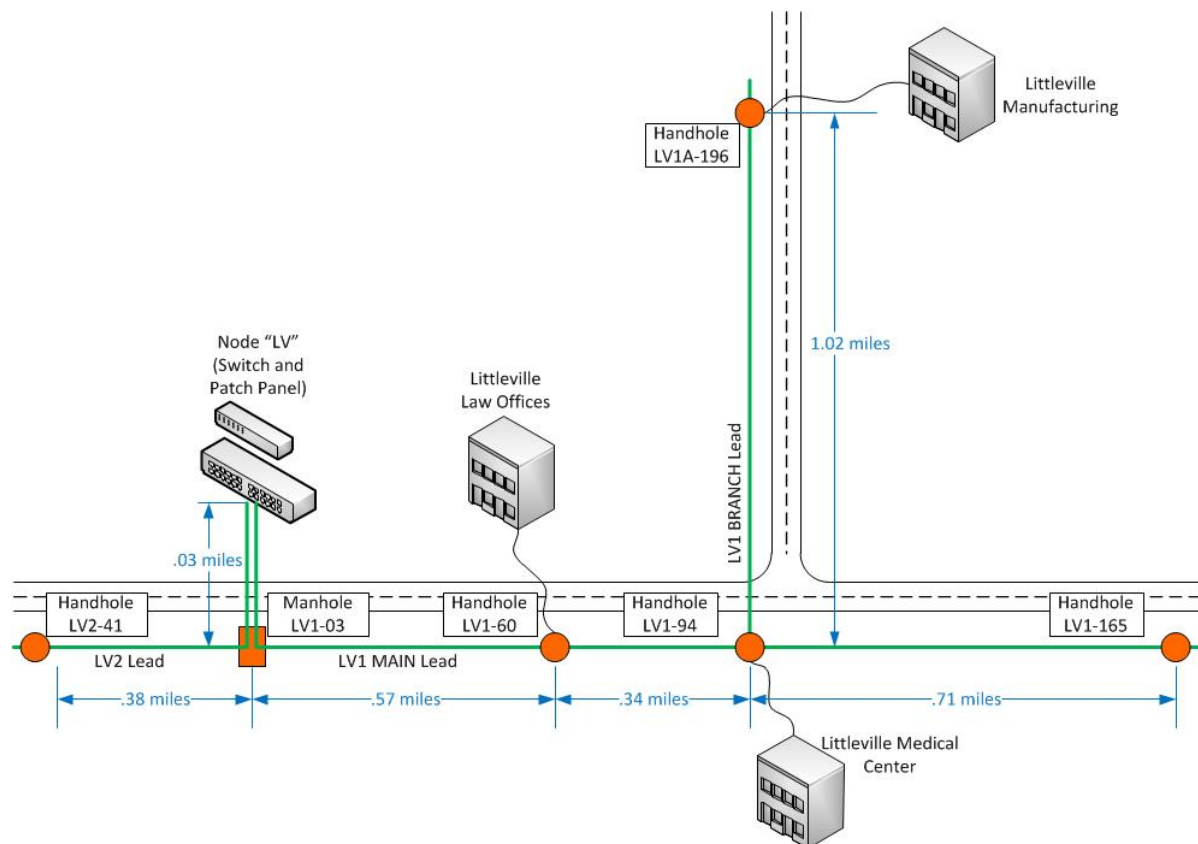
## Futureproof Handhole and Manhole Numbering

By Randy Reese, CFOT

As an engineer of a Fiber Optic network which serves businesses with telephone and internet services, accurate record-keeping has become almost as imperative as finding efficient ways to build plant to new customers, as our customer count now reaches into the hundreds.

Conventionally, a numbering scheme issues a new “serial number” to a plant asset. In doing so, an asset number (whether pole, ped, handhole, or whatever) has its use in plant asset management and accounting, but really no relevant field use at all. With a desire for more “usefulness”, and a system where the plant asset numbers along a particular lead remain in order, we developed a new numbering system for our assets, inspired by a typical mailing addressing system. Like the address system, an element can be inserted anywhere, and the number associated with it is inserted in the proper order.

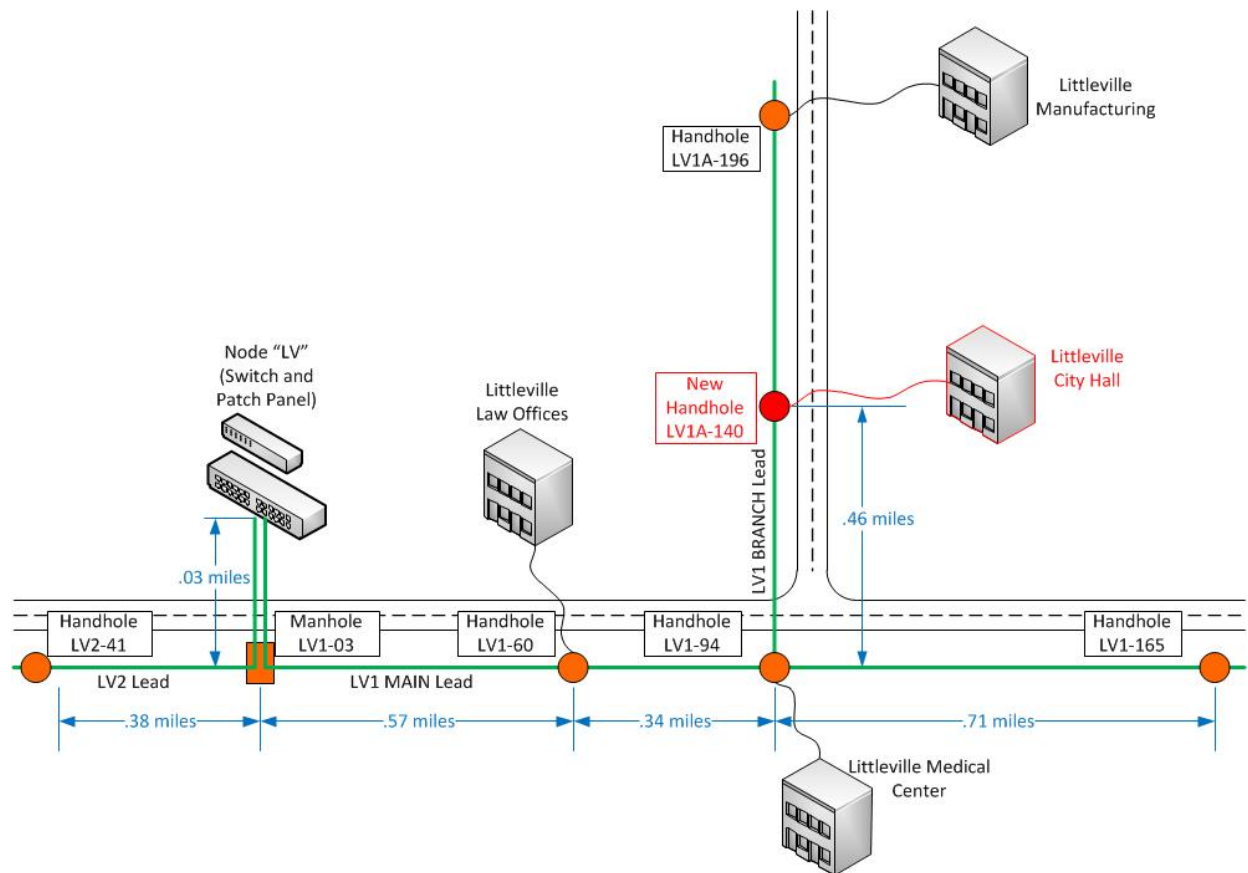
In the following diagram, we will begin at Node “LV”. Let’s assume there are 2 fiber cable leads coming from Node LV, and in this case, they use a common route going 163 feet (0.03) miles South to the first handhole. So we then name that handhole “LV1-03” – (“LV” to denote from what node the lead originates; “1” to designate which lead; and “03” for total hundredths of a mile from that node). The next handhole on this lead is “LV1-60”, which means it is 0.6 miles from the node, (0.57 miles from the previous handhole). Numbering continues on this lead as “LV1-94”; “LV1-165”, and so on.



Where a branch is taken off the main lead, we designate that as the “A” lead from LV1, and the remaining numbering convention continues, with the distance is noted in hundredths of a mile.

Notice lead “LV2” on the left side of the diagram. This simply denotes the second lead leaving the “LV” node. One might take this a step further and use a “clock position” method of numbering leads, where “LV12” would be straight North; “LV6” would be straight South; “LV8” would be WSW, etc. But for this example, we will just use cardinal numbering “1” and “2”.

Next, we pick up a new customer, “Littleville City Hall”, and we realize we need to install another handhole on the LV1A lead, in order to connect them to the network. Rather than have a handhole number out of sequence with the rest of the handholes on the lead, we simply measure (2,427 feet) .46 miles North of LV1-94, and call this new handhole “LV1A-140”.



Using this numbering convention, in theory we can place a handhole every 6 feet, and still keep a unique number to each handhole, manhole or aerial loop – while still keeping a uniform standard of numbering on a map. This method has proven useful to us, not only in keeping a consistent pattern of numbers along a given lead, but also as an aid to doing OTDR traces. Let’s say I am tracing a fiber from the LV patch panel, and the trace indicates a fault 1.65 miles away. I will instantly know the fault is likely to be at (or near) Handhole LV1-165. One might also factor in storage loops in the measurements between handholes to make troubleshooting with an OTDR trace even easier. This system may have some problems, but for now, we found that it does the job for us.