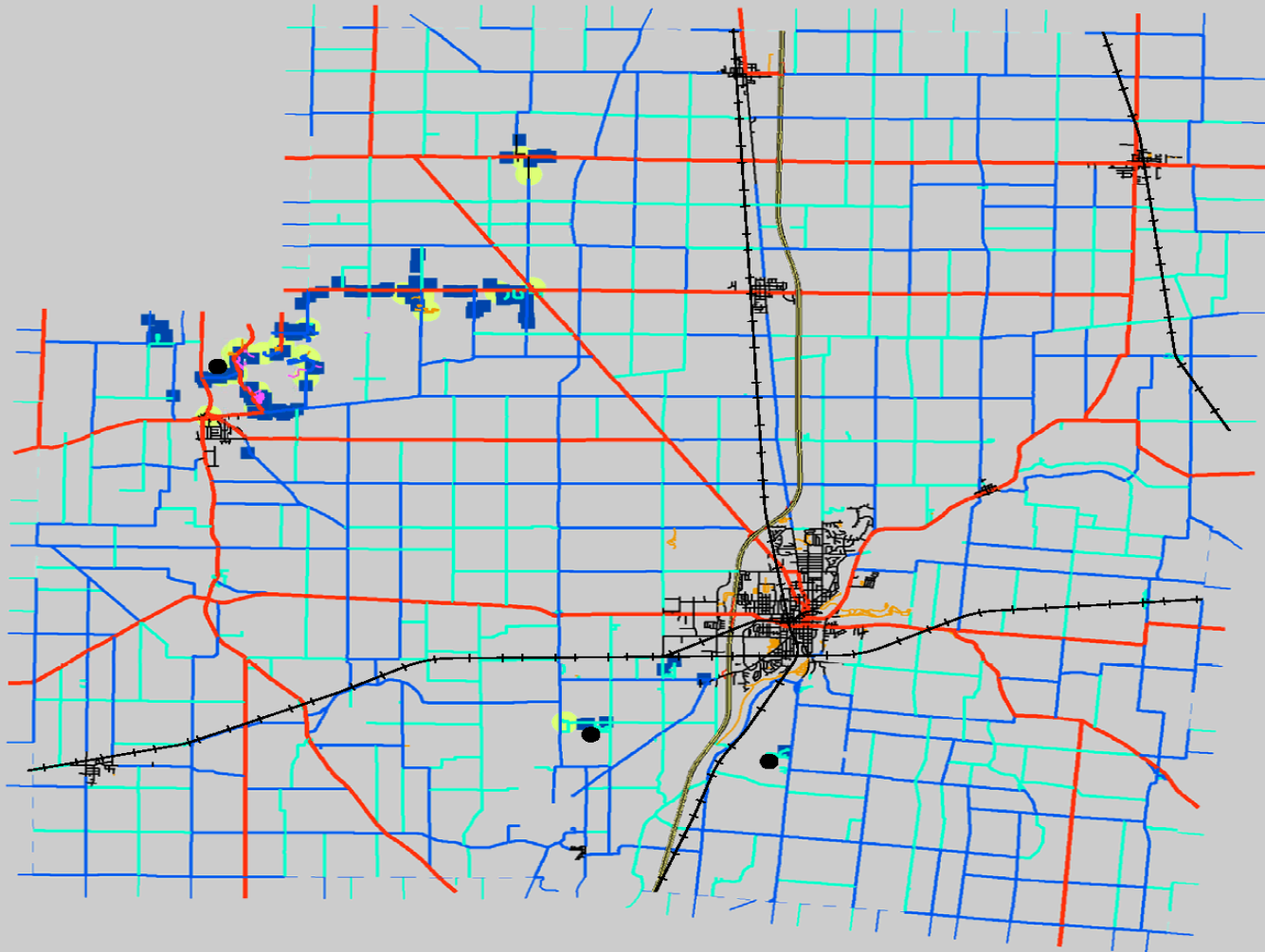


Shelby County, Ohio



Robert Geuy PE PS
Shelby County Engineer
Sanitary Engineer

Infrastructure



1 inch = 16,000 feet



Began Planning

- SCSD planned to implement SCADA
 - 2012 with the Kettlersville Sewer Project
 - Began with one pump station
 - Worked with Singer Environmental to get started
 - Needed and wanted to add more structures

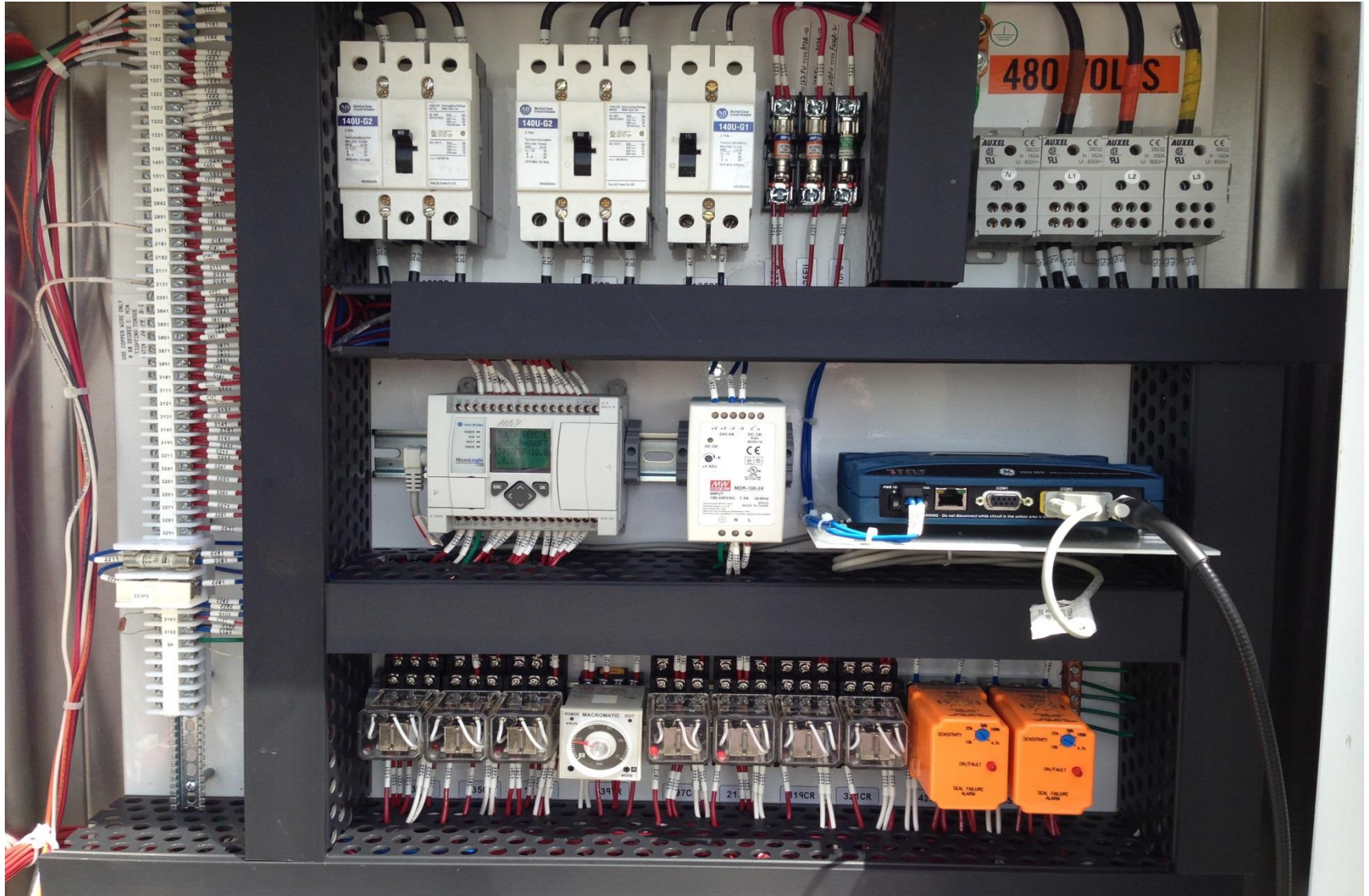
EXPAND our SCADA

- Had Information Shortage
 - Need live feed back – better information
 - I & I > chasing the ghost
- LIMITED BUDGET
- Can we do some of this ourselves ??

If you DIY – be Prepared !

- You have to be Motivated
 - Time – researching and implementing
 - Willing to take the chance
 - Don't be afraid to fail
- ALSO it helps to be 😊
 - Stubborn
 - Tenacious
 - Bull Headed
 - A money Miser

Pump Sta typical Installation



What did we NEED to DIY

- Hardware
 - Lap top
 - Cables and USB modem
 - Communication Software
 - We are using Allen Bradley PLCs
 - SCADA Software - HMI
 - Wonderware was setup with the first pump station we put on line.

What did we lack ?

- **ALMOST EVERYTHING.**
 - Lap top – Had it
 - Cables – needed to acquire
 - Communication Software
 - For the Allen Bradley micro logix 1100 PLC
 - SCADA Software
 - No experience programming Wonderware
 - **KNOWLEDGE and EXPERIENCE**
 - – **LARGE VOID**

Where did we Start

- Went to our local AB dealer FDL
 - Purchased
 - AB cable and USB Modem
 - RsLogix Starter Lite Version
 - Available as a free download
 - Received a 2 hr. starter course from Vender
 - Learned PLC basics and how to communicate with PLC
 - KNOWLEDGE >> Still not there

PLC Ladder Logic ?

- What is it ?
 - PLC programming system – Five major types
 - LD Ladder Diagram -
 - SFC Sequential Function Charts – use by more advanced systems
 - FBD Function block Diagram - graphical language
 - ST Structured Text – resembles basic or pascal programming
 - IL Instruction List – mnemonic instructions
- – Focused on AB LD programming
 - Read many articles
 - Looked at numerous examples
 - GOOGLE / YOUTUBE are your friend

Internet Search

plc programming - Google x

← → ↻ 🏠 https://www.google.com/search?q=plc+programming&oq=plc+pr&aqs=chrome.0j69i57j0l4.2358j0j8&sourceid=chrome&es_sm=122&ie=UTF-8

📱 Apps 🌐 ArcGIS - Sign In 🇺🇸 County Commission... 📺 MSN.com 🅕 Yahoo 🗇 Free Hotmail 🌐 StreamStats in Ohio 📁 Imported From IE 🌐 CoCoRaHS - Comm... 🗑️ Calculation of disch...

What is a Post Leaving Certificate course?

Programmable logic controller - Wikipedia, the free ...
https://en.wikipedia.org/wiki/Programmable_logic_controller - Wikipedia -
 Jump to **Programming** - A graphical programming notation called Sequential Function Charts is available on certain programmable controllers. Initially most PLCs utilized Ladder Logic Diagram Programming, a model which emulated electromechanical control panel devices (such as the contact and coils of relays) which PLCs replaced.

PLC Programming Schematics Inputs - YouTube
<https://www.youtube.com/watch?v=JzRixVPTpic>
 Mar 13, 2013 - Uploaded by Ivy Tech IyVIL0B
 PART 1 OF 12: Identifying the Inputs using the schematics We have 12 PLC videos available on YouTube see ...

PLC Programming Training | EEP
electrical-engineering-portal.com/resources - Resources -
 Ladder logic (LAD) is one programming language used with PLCs. Ladder logic uses components that resemble elements used in a the diagram format to.

What Is A Programmable Logic Controller (PLC)?
www.amct.com/tutorials/what-is-programmable-logic-controller.asp -
 A PROGRAMMABLE LOGIC CONTROLLER (PLC) is an industrial computer ... While Ladder Logic is the most commonly used PLC programming language, it is ...

Your Personal PLC Tutor - Learn PLC Programming Here ...
www.plos.net/ -
 The BEST place to Learn PLC Programming... Always FREE of course.

What in the World Is PLC Programming? - MakeUseOf
www.makeuseof.com/tag/world-plc-programming/ -
 Sep 14, 2011 - The evolution of PLC programming came from how these "manual" control systems were wired. In many cases, there were some "bricks" ...

Allen Bradley's PLC Programming Handbook | PLCdev
www.plcdev.com/allen_bradley_s_plc_programming_handbook/ -
 This handbook is a collection of programming overviews, notes, helps, cheat sheets and whatever that can help you (and me) program an Allen Bradley PLC.

PLC Programming | PLC Manual
www.plcmanual.com/plc-programming/ -
 Programming Languages A program loaded into PLC systems in machine code, a sequence of binary code numbers to represent the program instructions.

PLC Logic Controller \$49+ - Our PLCs are Better
www.velocio.net/ -
 -Learn How. Free Shipping. 30-day Guarantee
 about - contact us

PLC Programming For Dummies
ask.com/PLC-Programming-For-Dummies/ -
 Over 100 Million Visitors. Discover and Explore on Ask.com!

Searches related to plc programming

plc programming tutorial	plc programming jobs
plc programming software	ladder logic
plc programming training	plc programming languages
allen bradley plc programming	plc programming books

YouTube Search

The screenshot shows a web browser window with the address bar displaying https://www.youtube.com/results?search_query=plc+programming+tutorial+for+beginners. The YouTube logo is visible in the top left, and the search bar contains the text "plc programming tutorial for beginners".

The search results are listed as follows:

- Video 1:** A video thumbnail showing a control panel with buttons labeled "Shuttle Home", "Lift Home", "Transfer Home", and "All Home". The video title is "3 years ago • 255,571 views". The description reads: "This is a major component of learning to be a controls engineer. The very first lecture in the series of 58 videos, a little history and ...". The video duration is 32:16.
- Video 2:** A video thumbnail showing a ladder logic diagram with labels "External", "Internal", "Conditions - Permissives", and "Act". The video title is "PLC Lecture 01 Pt. 1- Programmable Logic Controller Basics PLC Professor". The channel is "plcprofessor". The video is "3 years ago • 705,188 views". The description reads: "This is an updated version of Lecture 01 Introduction to Relays and Industrial Control, a PLC Training Tutorial. It is part one of a ...". The video duration is 1:02:34.
- Video 3:** A video thumbnail showing a software interface with a warning icon. The video title is "PLC Training / Tutorial for Allen-Bradley (Video 1 of 11) AdvancedHMI". The channel is "AdvancedHMI". The video is "6 years ago • 828,136 views". The description reads: "These proven plc training techniques distinguish Ron Beaufort's Training from most other courses. Find the rest of the series here: ...". The video duration is 10:00.
- Video 4:** A video thumbnail showing a software interface with a ladder logic diagram. The video title is "Introduction to PLC Ladder Logic". The channel is "automationnc". The video is "2 years ago • 251,793 views". The description reads: "Introduction to PLC ladder logic programming. This video is an introduction to what ladder logic is and how it works. (Part 1 of 2) ...". The video duration is 19:10.
- Video 5:** A video thumbnail with the text "PLC Programming Tutorials for Beginners PART 2". The video title is "PLC Programming Tutorial for Beginners_ Part 2". The channel is "RealPars". The video is "1 year ago • 74,579 views". The description reads: "C'mon over to <http://www.realpars.com/> where you can sign up for FREE PLC training. PLC Programming Tutorial for Beginners_ ...". The video duration is 11:59.
- Video 6:** A video thumbnail with the text "Sign Up for 17". The video title is "Siemens PLC Training". The channel is "by RealPars". The description reads: "Sign Up For Free PLC Training!".

The left sidebar of the YouTube page includes navigation options: Home, Trending, BEST OF YOUTUBE (Music, Sports, Gaming, Movies, TV Shows, News, Live, Spotlight, 360° Video), and Browse channels. A sign-in prompt is also visible: "Sign in now to see your channels and recommendations!".

At the bottom right of the page, the page number "1-52" is displayed.

Q/A sites you can Ask ?

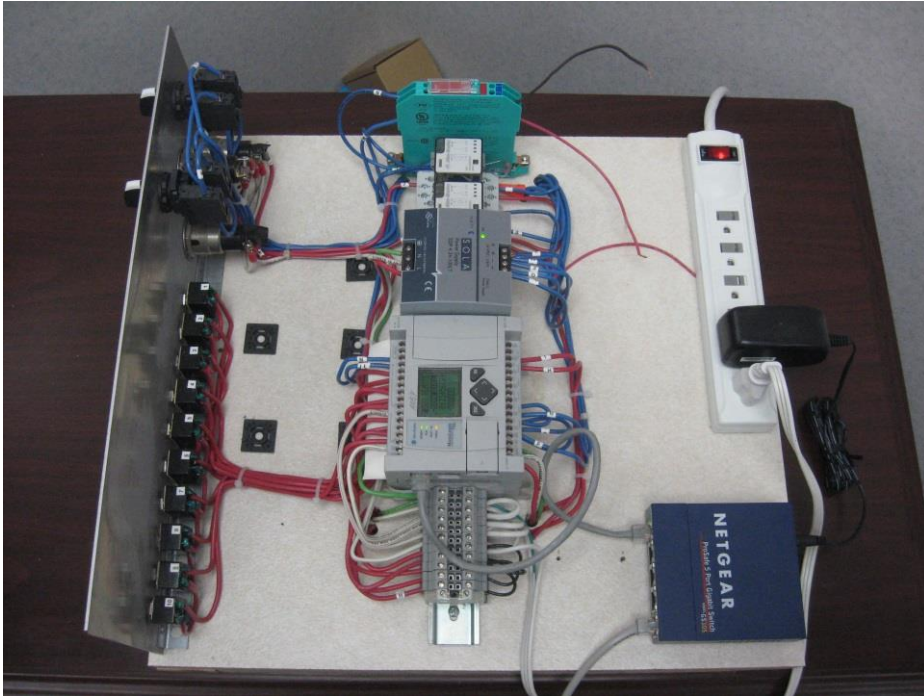
The screenshot shows a web browser window with the address bar displaying www.plctalk.net/qanda/forumdisplay.php?f=2. The browser's address bar also shows several bookmarks, including 'ArcGIS - Sign In', 'County Commission...', 'MSN.com', 'Yahoo', 'Free Hotmail', 'StreamStats in Ohio', 'Imported From IE', 'CoCoRaHS - Comm...', 'Calculation of disch...', 'Online hydraulic an...', and 'Sidney OH US Weat...'. Below the browser window, a forum page is visible. The forum title is 'Threads in Forum : LIVE PLC Questions And Answers'. The page features a list of forum threads with columns for 'Thread / Thread Starter', 'Last Post', 'Replies', and 'Views'. The threads listed include:

- Sticky: New PLCs.net Site Features and Design** (1 | 2 | 3 | 4) - Started by: Phil Melore (December 29th, 2015) - Last Post: February 15th, 2016 09:04 AM by [TWControls](#) - 54 Replies, 4,057 Views
- Logix5000 v20 Fatal Error after Windows Update KB3102433** - I've been using RSLogix5000 v20 for several years now on win7 64 with no real problems. So it was a... - Started by: Peter Laing (February 18th, 2016) - Last Post: Today 12:05 PM by [Peter Laing](#) - 2 Replies, 83 Views
- FTView ME** - Is there any way to go from a .mer file to a .apa file? I can get the apa file if I need to, but if... - Started by: sparkie (February 18th, 2016) - Last Post: Today 11:59 AM by [sparkie](#) - 2 Replies, 32 Views
- PLC/DCS Best Practices** - I started programming A-B MLX1000 PLCs when I was about 18. In 1993-4, I never had any formal... - Started by: dburnum (February 18th, 2016) - Last Post: Today 11:58 AM by [mk42](#) - 1 Reply, 53 Views
- PID Software - real time tuning** - Hello all, I was asked to check if there is a PID real - time software which automatically... - Started by: Purple Lisa (February 18th, 2016) - Last Post: Today 11:50 AM by [Peter Nachtwey](#) - 1 Reply, 64 Views
- Looking for opinions: Wave Guided Radar** - I first asked about ultrasonic here... - Started by: KingPresident (February 16th, 2016) - Last Post: Today 11:44 AM by [KingPresident](#) - 9 Replies, 300 Views
- Remote support capabilities AB & Siemens** - Hey everyone, I was wondering if the siemens and Allen Bradley have some sort of remote support for... - Started by: XxLinkX (February 18th, 2016) - Last Post: Today 11:40 AM by [mk42](#) - 8 Replies, 103 Views
- Blinking Lamp / Flashing Light - Structured Text** - Hey, New to the forum so apologise if I break any rules. I am trying to write a program... - Started by: GimmeTheLoot420 (February 18th, 2016) - Last Post: Today 11:36 AM by [tragically1969](#) - 2 Replies, 41 Views
- Tips on trolley project.** (1 | 2) - The plant where I work is putting a peling line in. This line will have an overhead hoist. There... - Started by: RussellRR (February 17th, 2016) - Last Post: Today 11:23 AM by [Jtec513](#) - 16 Replies, 327 Views
- STEP7 Professional V13; FB Declaration Static: Data type TON is not allowed here** - Product: STEP7 Professional V13 Reference: FB Declaration Static: Data type... - Started by: Traloch (February 18th, 2016) - Last Post: Today 11:21 AM by [Traloch](#) - 0 Replies, 18 Views
- help with current monitoring setup** - I've had some issues with a vacuum pump tripping but I believe we have resolved them... in dealing... - Started by: electric101 (February 18th, 2016) - Last Post: Today 11:00 AM by [OkiePC](#) - 2 Replies, 49 Views
- Controller Name Online Change** - Hi Guys, We have to open the discussion in our company if its a possible to change the controller... - Started by: maiko (February 18th, 2016) - Last Post: Today 10:54 AM by [maiko](#) - 0 Replies, 37 Views
- GE 90-30 Alspa C80-35 Failure** - Hello, I have an problem with one plc... suddently the CPU stopped and we were not able to start... - Started by: Ralf_GER (February 17th, 2016) - Last Post: Today 10:45 AM by [Ralf_GER](#) - 6 Replies, 111 Views
- Using FTView Studio ME to transfer over Enet** - So I have FTV5 ME 8.10 and I'm trying to upload PV+ programs over Eth/IP. I have an RSLinx... - Started by: sparkie (February 17th, 2016) - Last Post: Today 10:30 AM by [sparkie](#) - 11 Replies, 147 Views
- INT to SST in LADDER** - Really struggling to convert a variable INT to a TYPE accepted by an S7 timer. Int is 0-255 ... - Started by: gripster (February 17th, 2016) - Last Post: Today 10:25 AM by [gripster](#) - 6 Replies, 125 Views
- RSlogix 500 PID Block** - What is better? Scaling the Set point to 0-16383 (Attached Image 7) Or leaving the set...

Needed hands on Experience

- Built test Panel
 - Used Spare parts to build a test panel
 - Experimented with test panel instead of Pump stations. (Our sewer director really appreciated that!)
 - Began process of acquiring the KNOWLEDGE Side of the equation.
 - Still use this test panel today to test program changes.

Test Panel



AB Program Example

The screenshot displays the RSLogix Micro Starter Lite software interface. The main window shows a Ladder Logic (LAD) program titled "LAD 4 -- PUMP_RUN". The program is organized into three rungs (0002, 0003, and 0004).

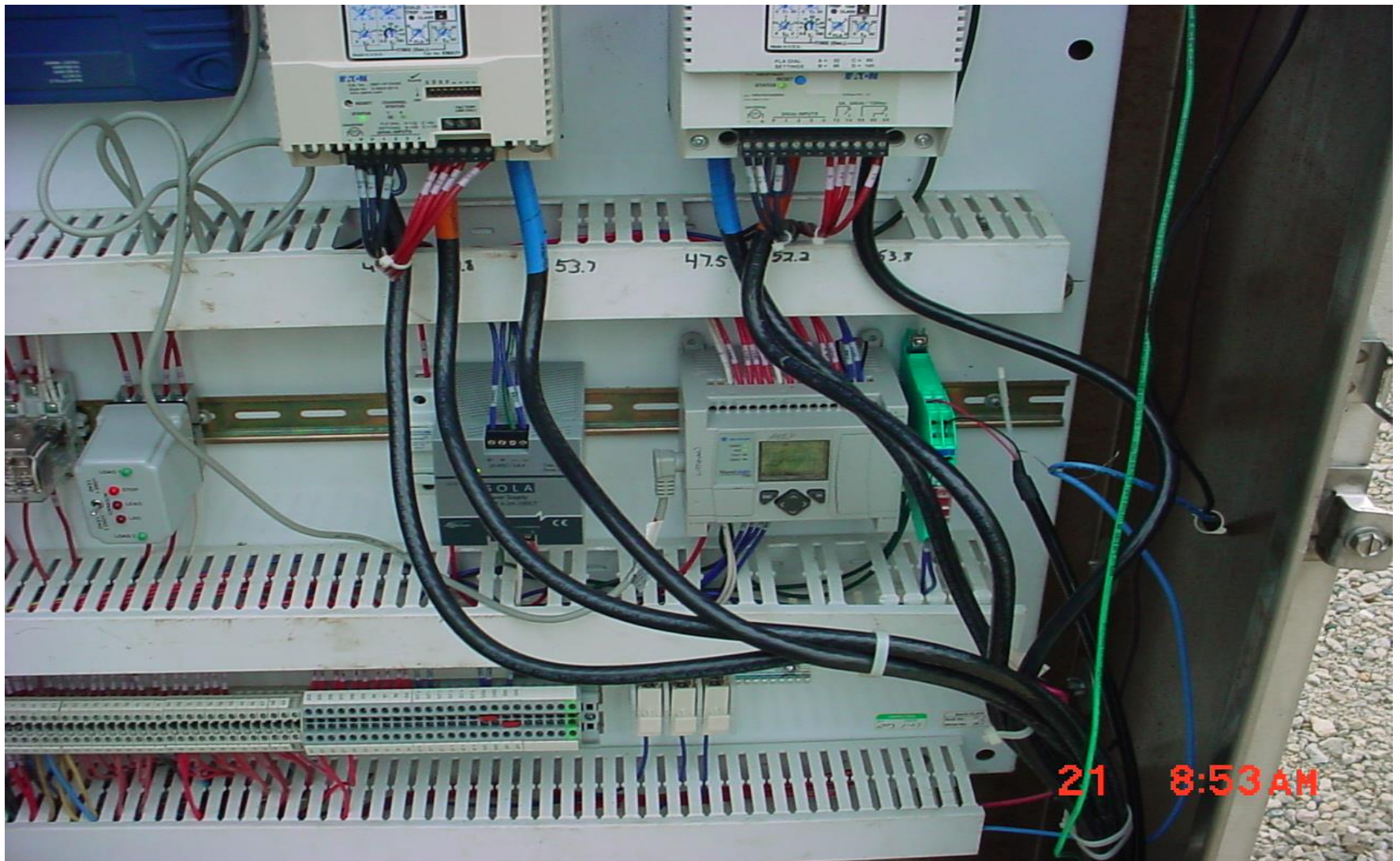
Rung 0002: A normally open contact labeled "New level timer" (T4:12) is connected to a coil labeled "Run latch" (B3:0).

Rung 0003: This rung contains two parallel branches. The top branch starts with a normally open contact "Run latch" (B3:0) and a coil "PUMP 1 ON" (O:0). The bottom branch starts with a coil "EQU" (Equal) comparing Source A (C5:0.ACC) and Source B (1). This coil is followed by a normally open contact "LEAD" (B3:1) and a normally closed contact "LEAD To Delay" (B3:0).

Rung 0004: This rung starts with a normally open contact "Run latch" (B3:0) and a coil "EQU" (Equal) comparing Source A (C5:0.ACC) and Source B (2). This coil is followed by a normally open contact "LEAD" (B3:1) and a normally open contact "P1 OT catch" (I:0).

The software interface includes a menu bar (File, Edit, View, Search, Comms, Tools, Window, Help), a toolbar with various icons, and a status bar at the bottom. The project tree on the left shows the file structure, including "LAD 4 - PUMP_RUN".

Converted Existing Panels



Software-SCADA Pc

InTouch - WindowViewer - C:\PROGRAMDATA\SHELBY5
File Logic Special Development!

SHE_MAIN_MENU

12:16:58 PM
2/22/2016

SHELBY COUNTY SEWER DISTRICT
SUPERVISORY CONTROL AND DATA ACQUISITION

CLOCK
12 : 16 : 58
PLC CLOCK
12 : 16 : 56

2016

PS #02 - LUTHMAN RD. McCartyville Vacuum

PS #03 - BON TON L.S. FLOW DATA

PS #09 - EILERMAN RD. COMMUNICATIONS

PS #11 - McCARTYVILLE RAINFALL DATA

PS #12 - KETTLERSVILLE ALARMS

CURRENT USER:
None

Desktop Links 12:16 PM 2/22/2016



McCARTYVILLE PS NO. 11



Normal

Low Vacuum

High Level

<u>ON</u>	<u>Off</u>
16	20



Vacuum Level
16.01 ("Hg)

Flow in GPM
0.0



SW1



SW2



Vac1



Vac2



Generator

STATION DETAILS

MASTER MENU

McCartyville Vacuum Sta. NO. 11

VACUUM **15.70** "Hg

	<u>SW P1</u>		<u>SW P2</u>		<u>SW P1 & P2</u>	
	<u>Hrs</u>	<u>Min</u>	<u>Hrs</u>	<u>Min</u>	<u>Hrs</u>	<u>Min</u>
<u>CURRENT</u>	5061	47	5083	43	122	29
<u>7 AM</u>	5061	16	5082	57	122	29

	<u>Vac P1</u>		<u>Vac P2</u>		<u>Vac P1 & P2</u>	
	<u>Hrs</u>	<u>Min</u>	<u>Hrs</u>	<u>Min</u>	<u>Hrs</u>	<u>Min</u>
<u>CURRENT</u>	7791	23	7767	58	556	35
<u>7 AM</u>	7790	36	7767	16	556	34

Gallons

<u>CURRENT</u>	54,934,250.0
<u>7 AM</u>	<u>54,926,925.0</u>

PRINT
SCREEN

STATION CONTROLS

MASTER MENU

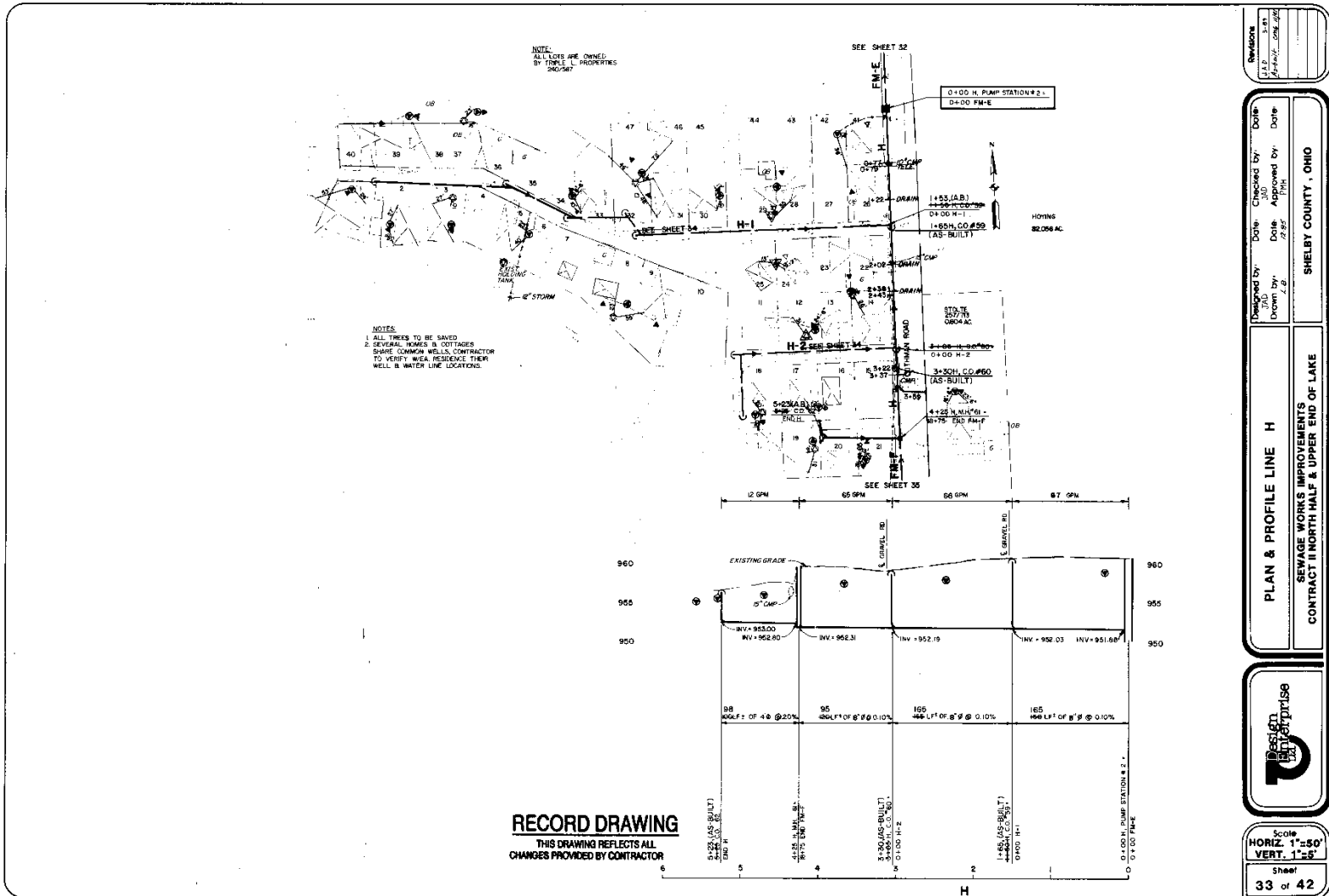
FUTURE ADDITIONS

- Additional Infrastructure
 - With Cell Phone Technology (Location)
 - Building our Knowledge base
 - Two Water Plants
 - Two existing sewage plants
 - NEWPORT SANITARY (OEPA Findings and Orders) > 2017
 - Four new pump stations
 - One Metering Building

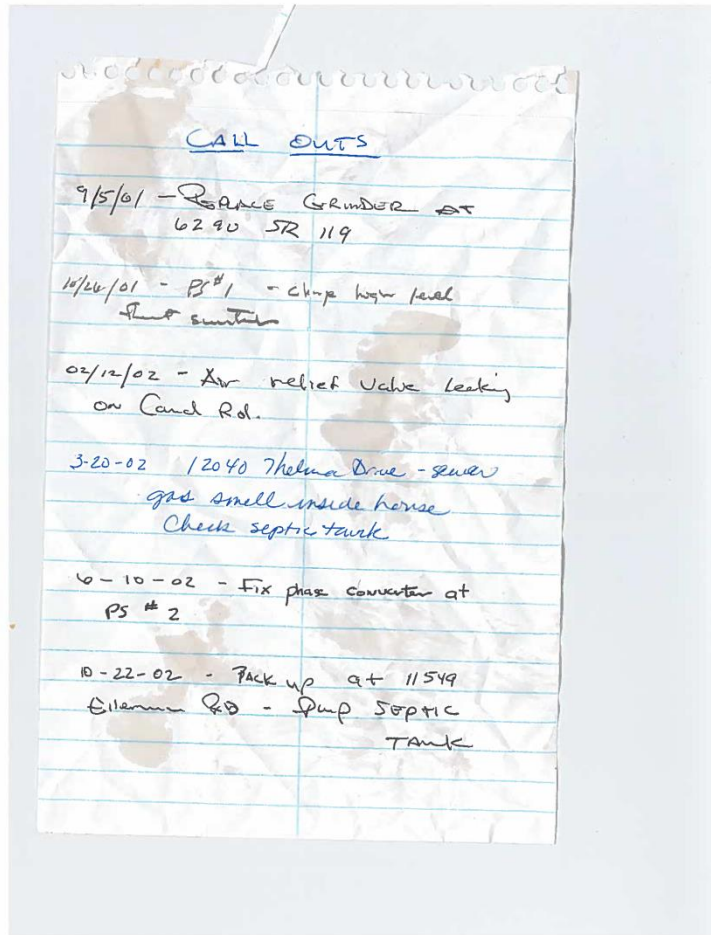
OTHER DIY PROJECTS

- ASSET INVENTORY/MAINTENANCE
 - RECORDS
 - Did not have a good inventory
 - Old Plans
 - Old Hand written notes
 - OLD memories (really OLD memories 😊)

Typical Plan Sheet



Hand written Notes



How could we improve?

- Convert Records to Digital Media
 - Had access to Microsoft Office products
 - Excel
 - Access
 - Word

Simple Excel Sheet

Pump Stations.xlsx - Microsoft Excel

File Home Insert Page Layout Formulas Data Review View Developer Acrobat Team

Clipboard Font Alignment Number Styles Cells Editing

C5 SR 363 - Northvi

	A	B	C	D	E	F	G	H	I	J
1	PSObjID	REF	LOCATION	PHASE	INSTALLED	PUMP_TYPE	COMMENTS	COMMENTS2	GPSX	GPSY
2	1	PS#01	Lehmkuhl's East	PC	1990	Hydromatic Submersible 2 - 7.5 HP			1468380.459	267639.6
3	2	PS#02	Luthman Rd.	3	2012	Hydromatic Submersible 2 - 30 HP			1467799.887	269389.2
4	3	PS#03	Bon Ton Rd.	3	1990	Hydromatic Submersible 2 - 30 HP			1456313.926	265499.4
5	4	PS#04	SR 363 - Northvi	3	1990	Hydromatic Submersible 2 - 15 HP			1453641.001	263491.9
6	5	PS#05	Lotus Cove Rd.	PC	1990	Hydromatic Submersible 2 - 15 HP			1451875.534	262467.1
7	6	PS#06	SR 362	PC	1990	Hydromatic Submersible 2 - 10 HP			1449696.336	262867.4
8	7	PS#6a	Westlake Village	3	1990	Hydromatic Submersible 2 - 7.5 HP			1449471.016	262938.1
9	8	PS#07	Lakeview	PC	1990	Hydromatic Submersible 2 - 10 HP			1448965.278	262519.3
10	9	PS#08	Filburn's Island	PC	1990	Hydromatic Submersible 2 - 15 HP			1456281.613	261855.3
11	10	PS#09	Eilerman Rd.	PC	1990	Hydromatic Submersible 2 - 40 HP			1456148.432	259519.1
12	11	PS#10	Canal Rd.	PC	1990	Hydromatic Submersible 2 - 10 HP			1449003.078	260032.6
13	12	PS#14	SCHENK ROAD	SI	2007	BARNES			1482279.257	217716.1
14	13	PS#15	NFO	SI	2007	E1-Retro			1475592.612	269909.4
15	14	PS#16	MALLARD POINT	SI	2002	BARNES	DUPLEX 2HP		1455855.062	262164.0
16	15	PS#11	MCCARTYVILLE	3	2007	YEOMANS SEWAGE PUMPS - 20 HP , RA	VACUUM STATION IN SERVICE 07/19/2007		1479049.826	270347.0
17	16	PS#16	MIDDENDORF SUB	SI	2008	3 HP BARNES SVG3072L	In Service 03/2008		1451337.013	255936.3
18	17	PS#13	McCarthyville Road	SI	2012	BARNES 2HP DUAL 36" X 108"	In Service 2012		1478632.223	284169.1
19	18	PS#12	Kettlersville	3	2012	MYERS WG15OH-43 15HP	In Service 2012		1478041.624	286138.0
20	19	0 LLP	LLPLANT Radio	NA	2013	SCATA Radio System	Radio System Scata System		1447705.635	259769.4
21	20	0 FLW	Ft Lor Water Tow	NA	2013	SCATA Radio System	Radio System Scata System Main Repeater		1446354.218	254785.4
22	21	0 SR1	SR119Rad	NA	2013	SCATA Radio System	Radio System Scata System Repeater - Lehmkuhl's		1466011.715	269794.5
23	22	PS#18	ODNR	SI	2007	BARNES DUPLEX GRINDER	CONCRETE VAULT	Replaced Pump 2 - 8/30/2013	1451154.365	257743.
24	23	PS#19	ODNR	SI	2007	BARNES DUPLEX GRINDER	CONCRETE VAULT		1451429.336	257165.4
25	24	PS#0	Lake Loramie Pla	3	2006	Myers	Pump #1 rebuilt 08/19/2013 - seal fail Pump #2 - pull w/ seal fail 9/11/2013		1447892.373	260179.
26										

Sheet1 Sheet2 Sheet3

Ready 100%

Moved data to Access DB

Microsoft Access - Table Tools

Tables: GP_Work_Hist, GrinderPumpList, MH_CO_VaClifts, MH_CO_Work_Hist, OLD_Valves, PS_Work_Hist, PumpSta, ST_VAC_Tanks, ST_VAC_Work_Hist, Valves_AirReleases, Valves_AirReleases_Work_Hist

PSOBJID	PUMP_TYPE	REF	LOCATION	PHASE	INSTALI	COMMENTS
1	Hydromatic Submersible 2 - 7.5 HP	PS#01	Lehmkuhl's East	PC	1990	
2	Hydromatic Submersible 2 - 30 HP	PS#02	Luthman Rd.	3	2012	
3	Hydromatic Submersible 2 - 30 HP	PS#03	Bon Ton Rd.	3	1990	
Date						
Hist_work1						
4/1/2007 New Control Panel						
8/1/2010 P#2 replaced						
8/1/2010 Phone line dialer installed						
8/1/2010 3 phase service						
6/1/2012 Generator adde with new disconnect - Kettlersville Project funded this						
12/24/2015 P2 pump stopping at +/- 0.6' higher than it should and then the pump will not restart.						
12/28/2015 Changed Alternator and the Base						
12/28/2015 Change Relay Cubes from MR1 to MR2 and OT1 to OT2						
12/31/2015 Changed Stop Float						
1/2/2016 Moved Starter No. 1 over to Starter No. 2 postiion						
1/4/2016 Changed Lag Float and Lead Float						
1/7/2016 Converted over to PLC control. Removed Alternator and put a 5 sec. delay on the emergency Stop Float						
1/9/2016 Replaced P2 with rebuilt unit @1353 hrs 30 Min. Removed unit taken to Piqua Elec. To have rebuilt						
*						
4	Hydromatic Submersible 2 - 15 HP	PS#04	SR 363 - Northvi	3	1990	
5	Hydromatic Submersible 2 - 15 HP	PS#05	Lotus Cove Rd.	PC	1990	
6	Hydromatic Submersible 2 - 10 HP	PS#06	SR 362	PC	1990	
7	Hydromatic Submersible 2 - 7.5 HP	PS#6a	Westlake Village	3	1990	
8	Hydromatic Submersible 2 - 10 HP	PS#07	Lakeview	PC	1990	
9	Hydromatic Submersible 2 - 15 HP	PS#08	Filburn's Island	PC	1990	
10	Hydromatic Submersible 2 - 40 HP	PS#09	Eilerman Rd.	PC	1990	
11	Hydromatic Submersible 2 - 10 HP	PS#10	Canal Rd.	PC	1990	
12	BARNES	PS#14	SCHENK ROAD	SI	2007	

Record: 1 of 24

NEXT STEP - GIS

- GIS – Geographical Information System
 - Store, manipulate, analyze, manage and present data in a spatial format.
- Vendors
 - Too many to list all of them
 - Auto Cad – Map
 - ESRI

GIS - Filburns

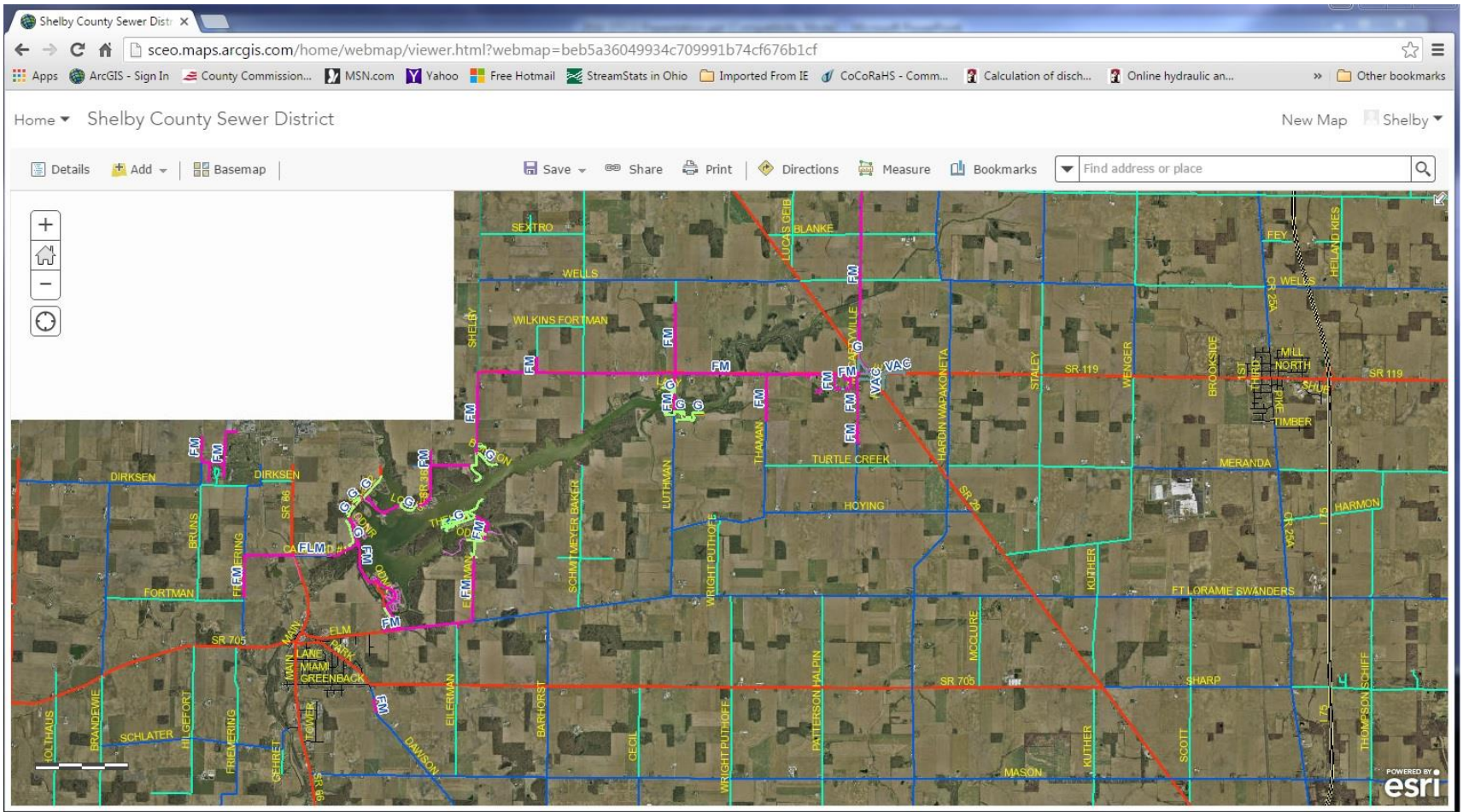
The screenshot displays the ArcMap interface for a project named 'Rbg_MASTER_64bit.mxd'. The main map area shows an aerial view of a residential neighborhood with several streets highlighted in blue and green. The streets are labeled with names such as 'DOROTHY', 'THURMAN', 'ETTERMAN', 'N. WILSON', 'N. GREEN', 'N. BROWN', 'N. THOMA', 'N. PEARSON', 'N. WILSON', 'N. GREEN', 'N. BROWN', 'N. THOMA', and 'N. PEARSON'. The map also shows various parcels and roadways.

The Table of Contents on the left side of the interface lists the following layers:

- ADDRESSES
- Railroads
- RoadWay_Traffic
- RoadWay_Uilities
- RoadWay_Inventory
- Survey
- SCSD
- School Info
- SCEO_Maps
- DRAINAGE
- Parcel Data
 - 100Scale
 - 400Scale
 - Boundaries
 - Polygons
 - School_Districts
 - Subdivisions
 - Condominiums
 - TaxParcels
 - Blocks
 - Hydrography
 - ROWs
 - Sections
 - Areas
 - Corporate
 - OwnershipParcels
 - ParcelsAssessment
 - PoliticalTownships
 - DetailPages
 - Pages
- sc_parcels.DBO.Soilmu_a_oh149
- sc_parcels.DBO.Shelby_Landuse
- CONTOURS
- Orthos - Web Services
- Orthos - Mapped

The software interface includes a menu bar (File, Edit, View, Bookmarks, Insert, Selection, Geoprocessing, Customize, Windows, Help), a toolbar, and a status bar at the bottom showing the drawing tool, scale (1:1,824), and font settings (Arial Black, 9.75).

Next – ArcGIS Online



ArcGIS Online Filburns

The screenshot displays the ArcGIS Online interface for a web map titled "Shelby County Sewer District". The browser address bar shows the URL: `sceo.maps.arcgis.com/home/webmap/viewer.html?webmap=beb5a36049934c709991b74cf676b1cf`. The map shows an aerial view of a residential area with a sewer network overlaid in green lines and yellow nodes. The network is connected to a larger system, with a pink line labeled "FM" visible on the right. Street names such as EILERMAN, THURMAN, KENNEDY, and DOROTHY are visible. The interface includes a search bar, a toolbar with navigation and analysis tools, and a footer with the ESRI logo.

Data available in the field

The screenshot shows an ArcGIS web map interface for the Shelby County Sewer District. The browser address bar displays the URL: `sceo.maps.arcgis.com/home/webmap/viewer.html?webmap=beb5a36049934c709991b74cf676b1cf`. The map shows a network of sewer lines in pink and green over an aerial view. A pop-up window is open over a specific feature, displaying the following information:

(1 of 6)	
REF	PS#03
GPSX	1,456,313.93
GPSY	265,499.41
PSObjID	3.00
REF	PS#03
LOCATION	Bon Ton Rd.
PHASE	3
INSTALLED	1990
PUMP_TYPE	Hydromatic Submersible 2 - 30 HP
COMMENTS	
COMMENTS2	
GPSX	1,456,313.93
GPSY	265,499.41

Below the pop-up window, there are links for [Zoom to](#), [Get Directions](#), and [Show Related Records](#). The map interface includes standard navigation tools (zoom in, zoom out, home, refresh) and a search bar.

SCSDwebPage - CO Private.DBO.PS Work Hist (13 features)

Date	PSObjID	Hist_work1
July 31, 2010	3	Phone line dialer installed
December 30, 2015	3	Changed Stop Float
January 1, 2016	3	Moved Starter No. 1 over to Starter No. 2 postion
July 31, 2010	3	P#2 replaced
January 3, 2016	3	Changed Lag Float and Lead Float
December 23, 2015	3	P2 pump stopping at +/- 0.6' higher than it should and then the pump will not restart.

QUESTIONS ?

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