

Service Pro 2023

Single Family Instructions for Excel 2016 and later.

User's Manual



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Durand & Associates

Using Service Pro 2023 with Excel

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The **Service Pro 2023** software is a spreadsheet template software program for calculating main service panel size, feeder sizes and single family 1-Line drawings. The **Service Pro 2023** software is for reference purposes only, and Durand & Associates cannot assume any responsibility for the accuracy of the program contents. In using this program the user agrees to hold harmless and wave all claims against Durand & Associates.

SOFTWARE REQUIREMENTS

Service Pro 2023 was created with Microsoft Excel 2007. To use these templates you must have Microsoft Excel (Version 2007 or later) installed on your computer.

The Service Pro 2023 files are located on your C drive @ C:\Service Pro 2023

INTRODUCTION

The **Service Pro 2023** software is a spreadsheet template program. The program was designed for use in conjunction with Microsoft Excel on the Windows platform. The program should also work on other platforms that can read and write Microsoft Excel .XLSX file formats.

LOADING THE PROGRAM

Insert the CD in your drive and follow the setup instructions.

The installation of Service Pro will create the following folder on your C drive.

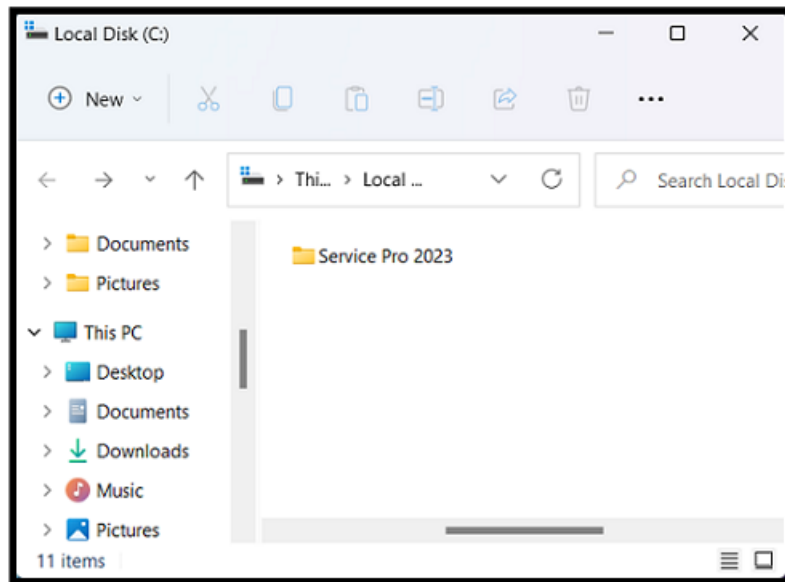
C:\Service Pro 2023

EXPLORING THE PROGRAM

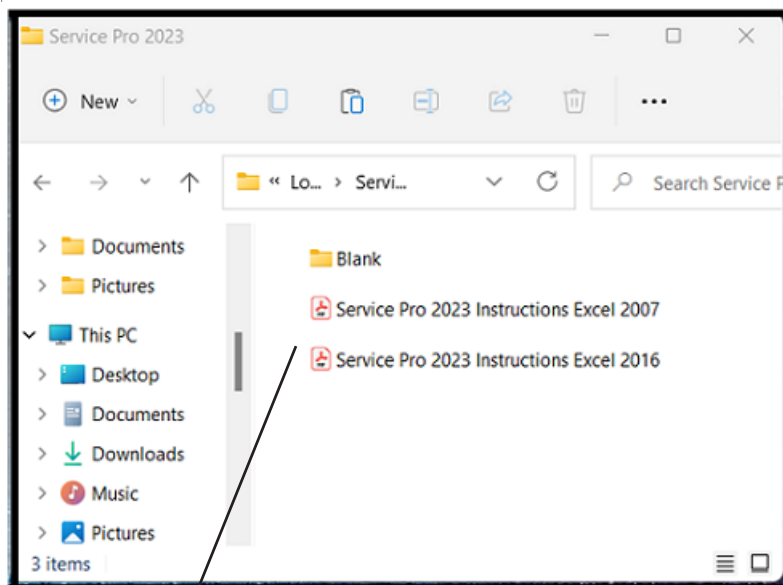
Service Pro software is a complex spreadsheet template program. The program uses 7 files which link to one another. **DO NOT CHANGE THE FILE NAMES.** If a file name is changed the template can become corrupt.

LOCATING THE PROGRAM FILES

The Service Pro templates are located on your C: drive.



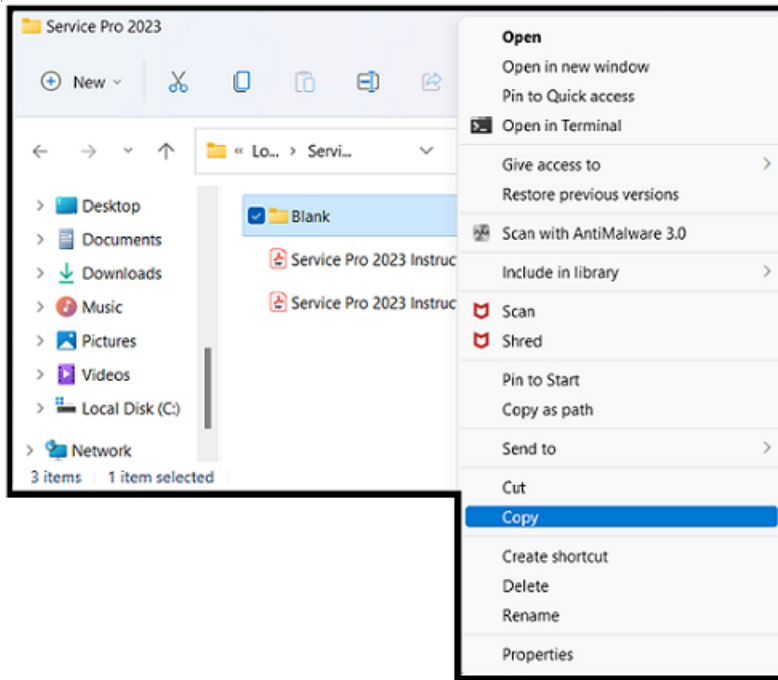
If you double click on the Service Pro folder, you will find 2-files & 1-folder. There are two instruction files. one for Excel Version 2007 and one for Excel Version 2016



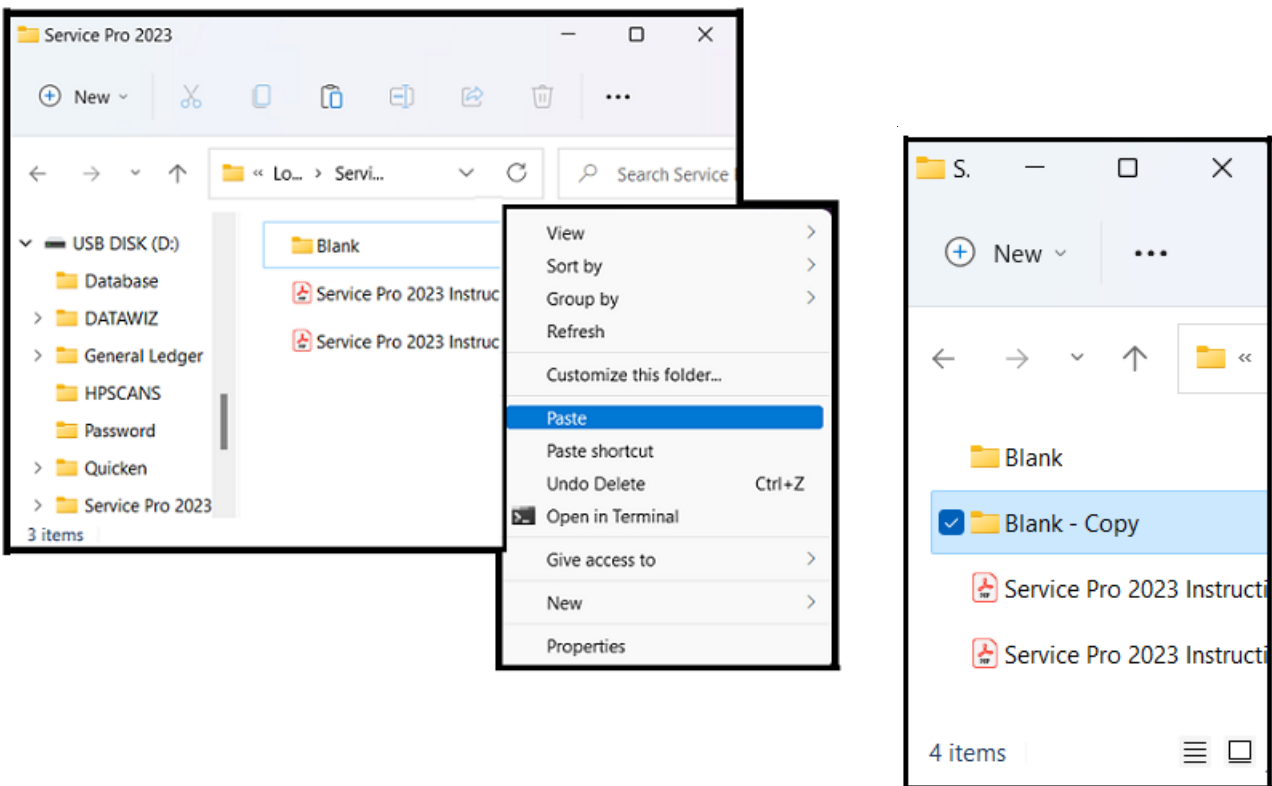
NOTE: Please double click on the “Service Pro Instructions” file and print the instructions.

STARTING A NEW PROJECT

If you want to start a new project, RIGHT CLICK on the blank folder and select COPY.



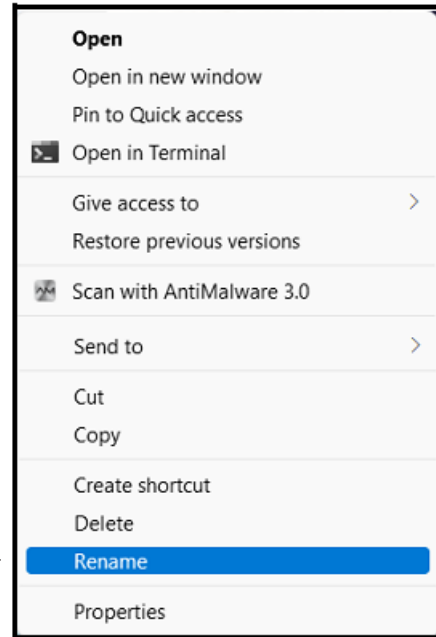
Then RIGHT CLICK on the white area of the window and select PASTE.



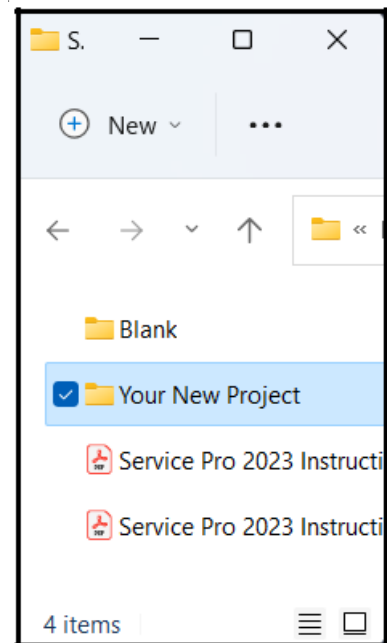
This will create a new folder titled "Blank - Copy".

RENAME THE FOLDER

You can RIGHT CLICK on the new folder and select the RENAME command.



Type in your new project name.

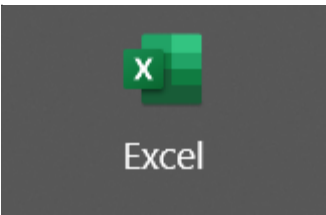


Use this method to create a new project each time you start a new Service Pro.

Now that you have created a new folder close all windows.

USING THE PROGRAM

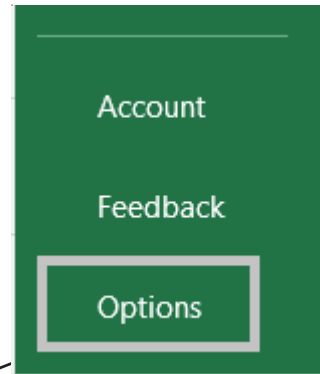
Double click on your Excel icon



This will start your Excel spreadsheet program.

TURNING ON AUTOMATIC UPDATING IN EXCEL

Go to the FILE menu and select OPTIONS

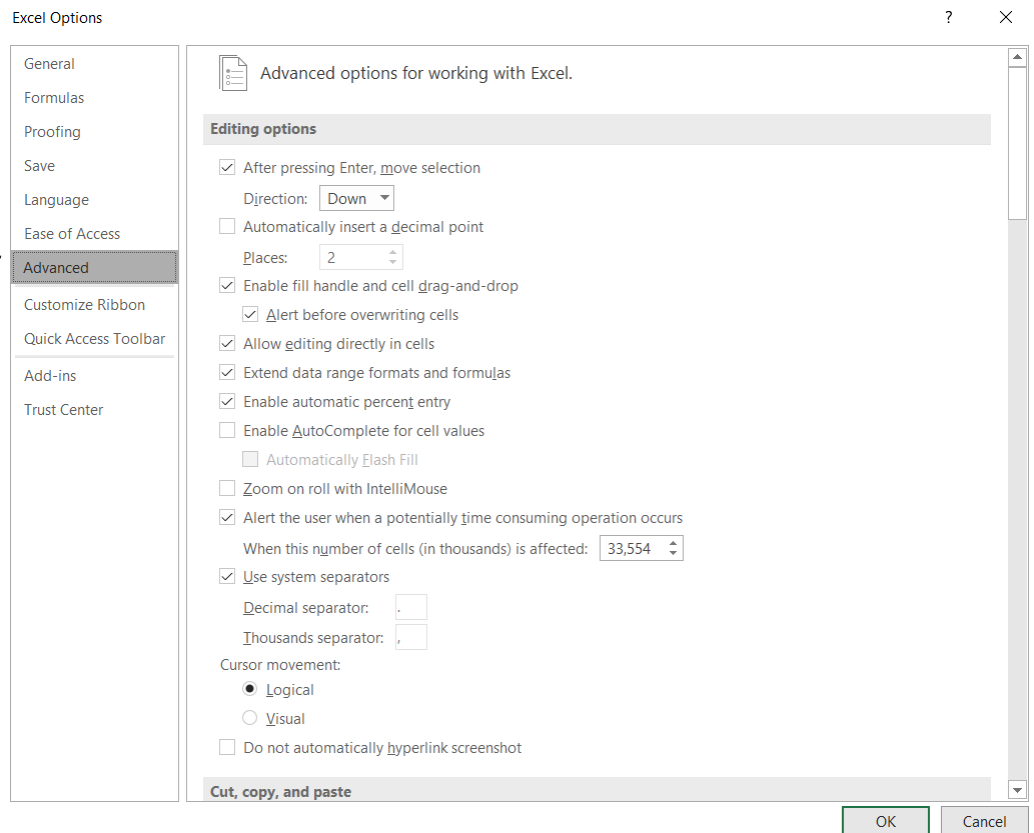


Excel Options

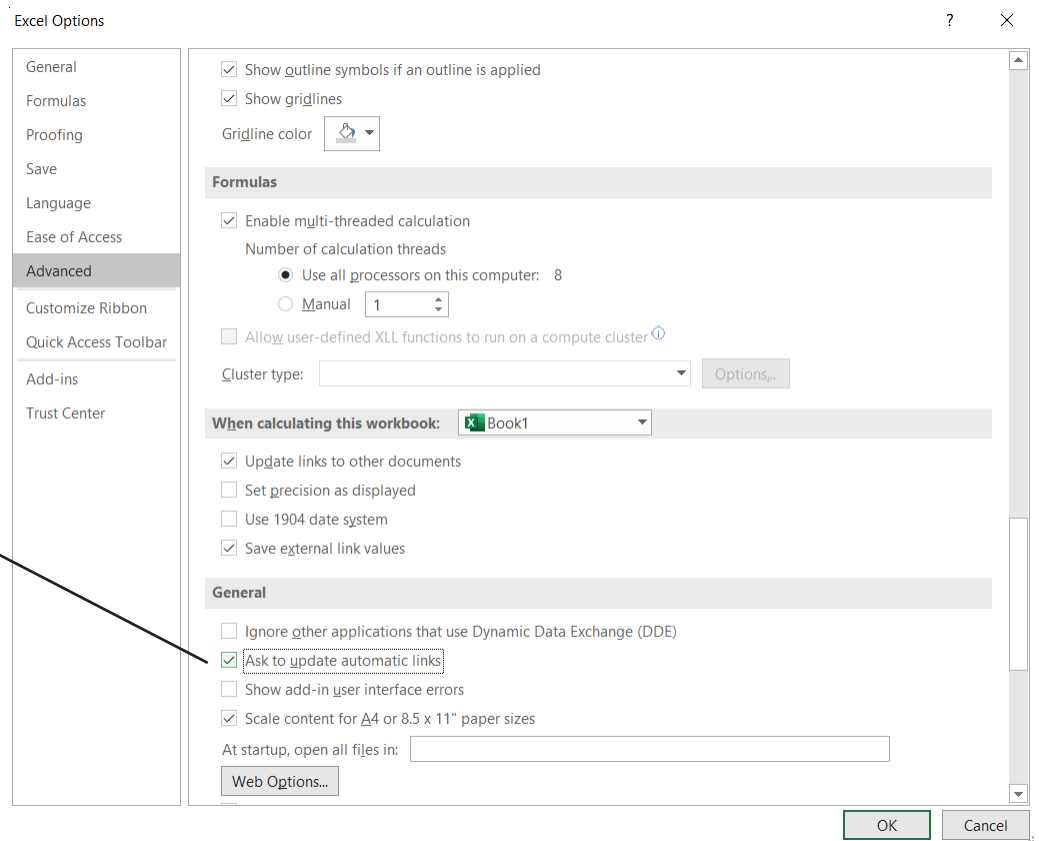
TURNING ON AUTOMATIC UPDATING IN EXCEL (Continued)

Go to the Tools menu and select Options

Click on the Advanced tab.

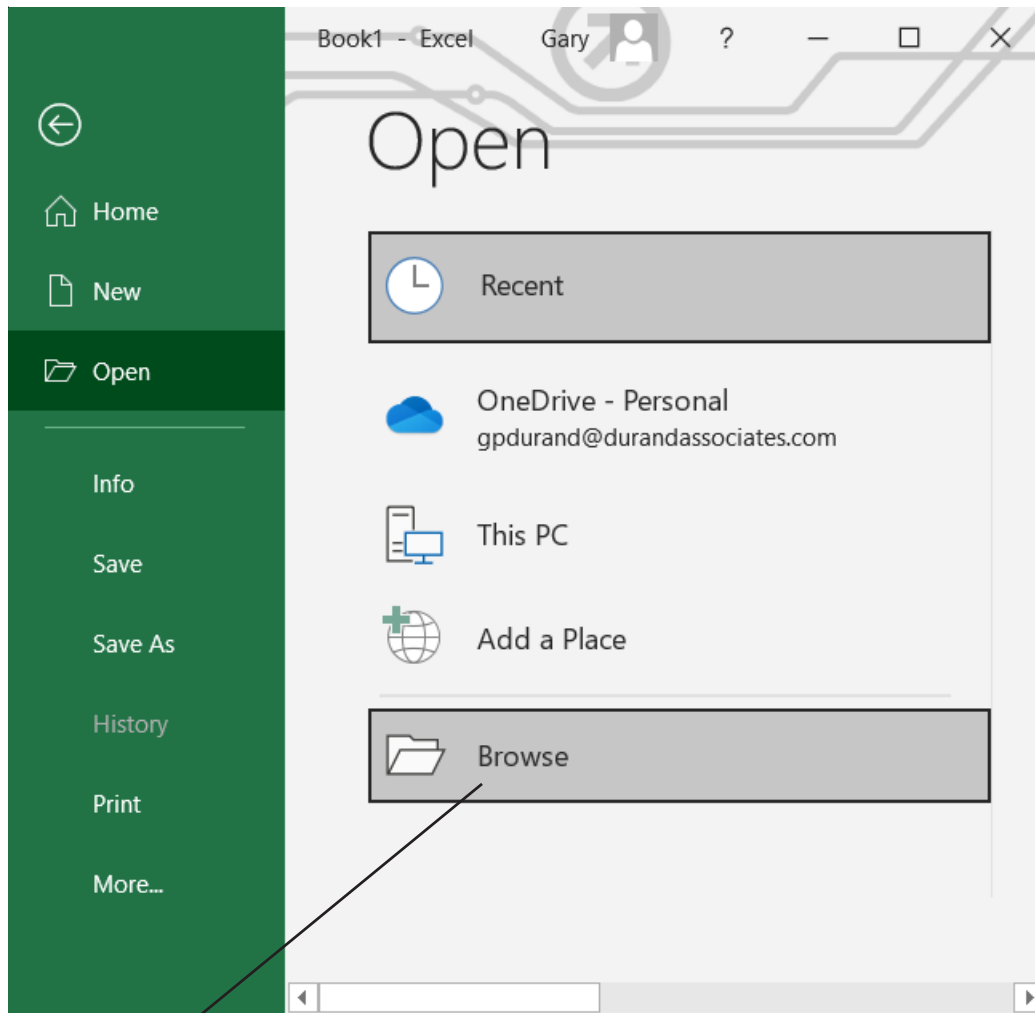


Scroll down to the General section and uncheck the "Ask to update automatic links"



USING THE PROGRAM

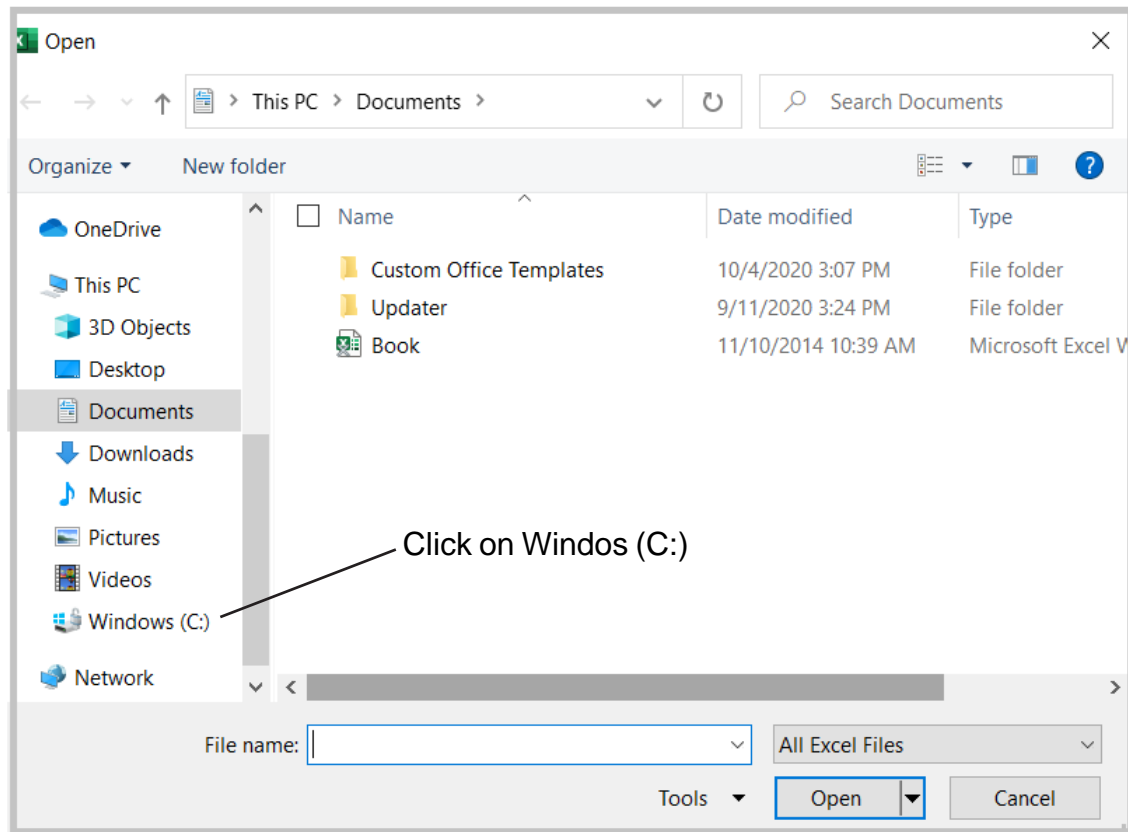
Select the FILE OPEN (Ctrl + O) command and then click BROWSE



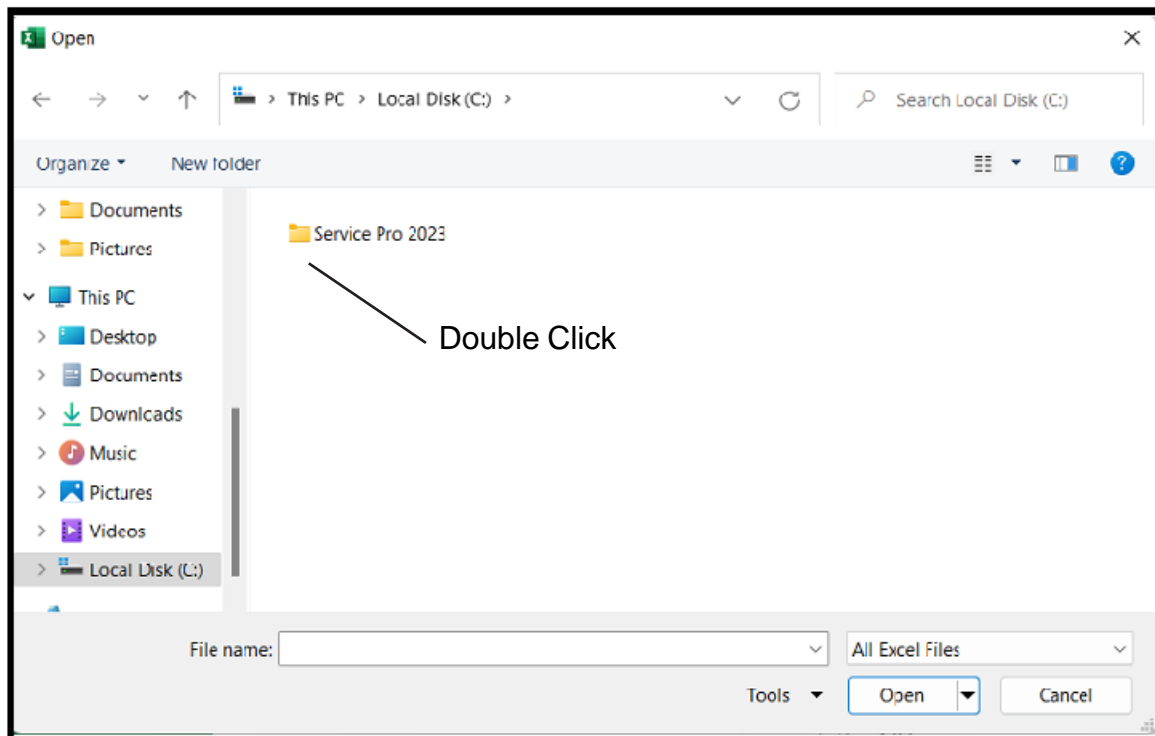
Browsed

USING THE PROGRAM

Click on the Windows (C:) which will display the contents of the C drive.

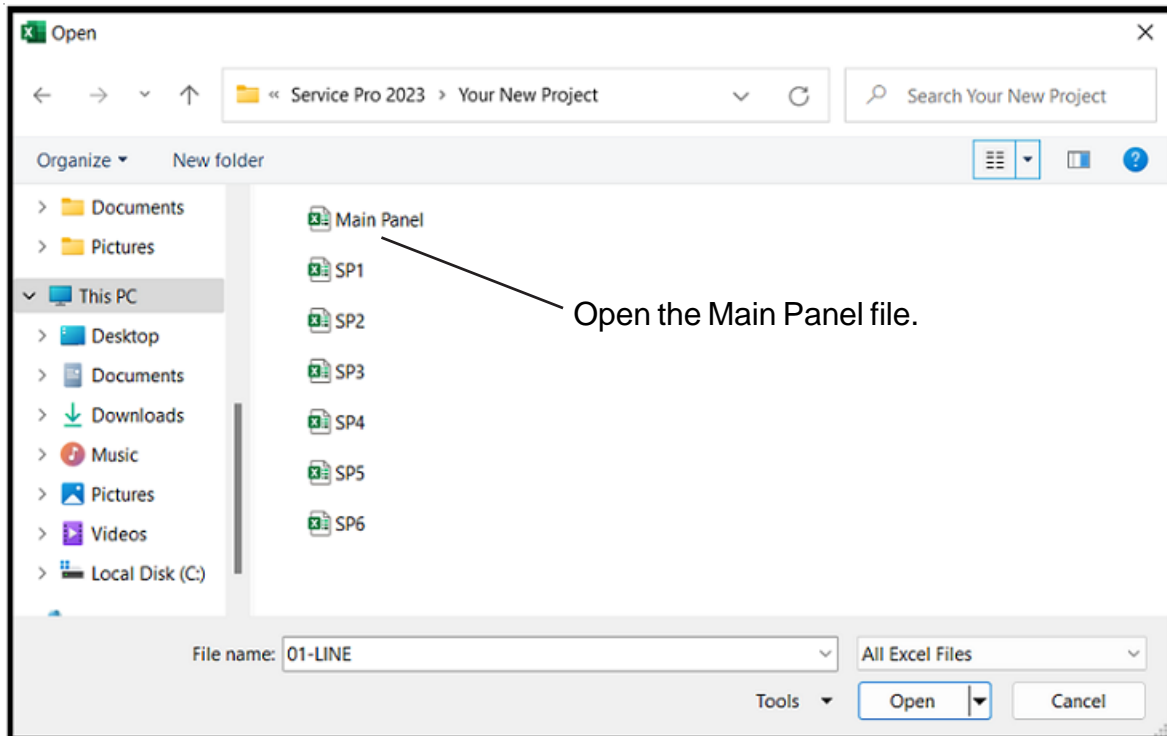
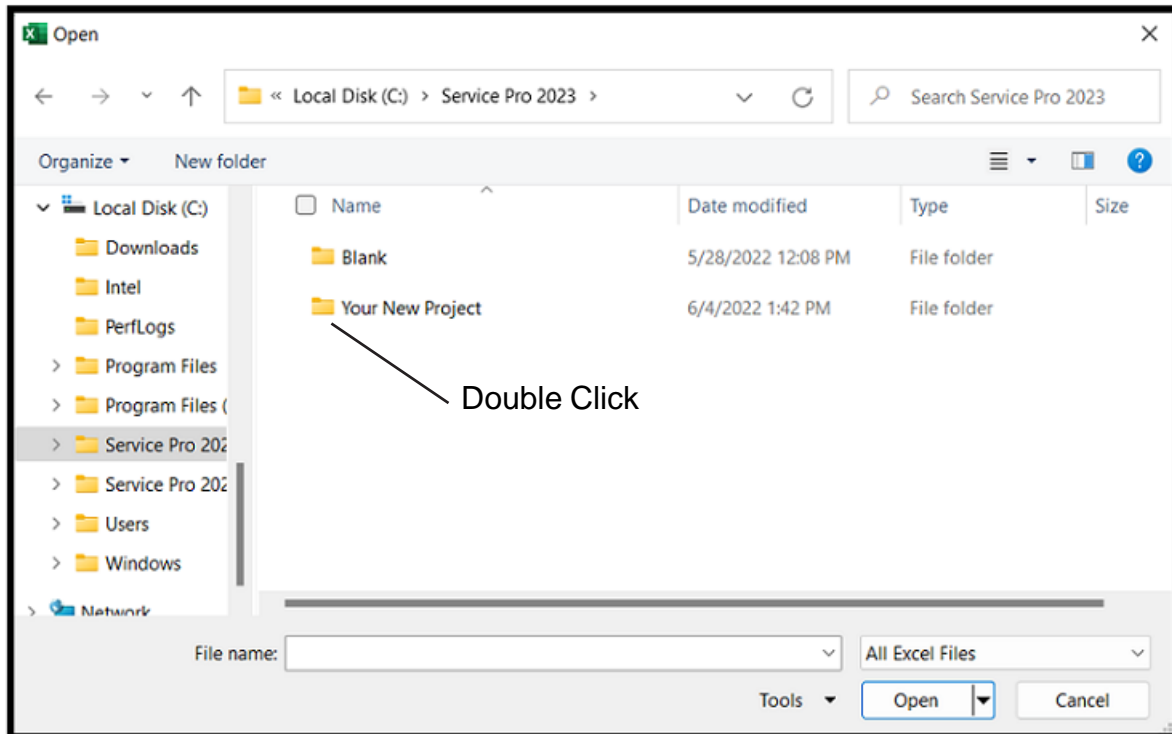


Locate the Service Pro 2016 folder on the C drive and DOUBLE CLICK on that folder.



OPENING YOUR PROJECT

Select the FILE OPEN command and locate the Service Pro 2023 folder on your C: drive. Double click the Service Pro 2023 folder to display the contents.



The files in this folder are MAIN PANEL and SP1-SP6.

DO NOT RENAME THESE FILES (This will corrupt the files).

WORKING WITH THE MAIN PANEL

Double click on the MAIN PANEL file to display the Main Panel Template

This may take a few seconds to open as Excel updates the links to the other files.

GENERAL INFORMATION	
PROJECT NAME	SAMPLE
ADDRESS	123 MAIN
CITY/STATE/ZIP	FOLSOM, CA 95630
CODE YEAR	2008
CALCULATION METHODE	OPTIONAL

GENERAL INFORMATION

- **Project Name** (Enter the project name)
- **Address** (Enter the address)
- **City/State/Zip** (Enter the city, state, and zip code)
- **Code Year** (Select the Code Year from the pulldown menu)
- **Calculation Method** (Select Standard or Optional)

VOLTAGE DROP CALCS	YES
HIGH VOLTAGE	240
LOW VOLTAGE	120
FAULT CURRENT CALCS	YES
AVAILABLE FAULT CURRENT	22,000
PANEL NAME	MAIN PANEL
PHASE	1
TOTAL SQUARE FOOTAGE	1,500
APPLIANCE CIRCUITS	2
LAUNDRY CIRCUITS	1

LOAD INFORMATION

- **Voltage Drop Calcs** (Select YES or NO)
- **High Voltage** (Enter the line to line voltage)
- **Low Voltage** (Enter the line to neutral voltage)
- **Fault Current Calcs** (Select YES or NO)
- **Available Fault Current** (Enter fault current)
- **Panel Name** (Enter Panel Name)
- **Phase** (Select 1 or 3Y)
- **Total Square Footage** (Enter square footage)
- **Appliance Circuits** (Enter number of appliance circuits)
- **Laundry Circuits** (Enter number of laundry circuits)

SERVICE FEEDER	
OVERHEAD / UNDERGROUND	UNDERGROUND
METER-MAIN.PANEL	METER
MAIN-PANEL	MAIN PANEL
CONDUIT SIZE	3"
CONDUIT TYPE	PVC

SERVICE FEEDER INFORMATION

- **Overhead/Underground** (Select overhead or underground)
- **Meter-Main-Panel** (Select from pulldown menu)

METER

METER
METER MAIN
METER MAIN PANEL

- **Main-Panel** (Select from pulldown menu)

MAIN

MAIN
MAIN PANEL
MAIN PANEL TRANSFER

- **Conduit Size** (Select the conduit size)

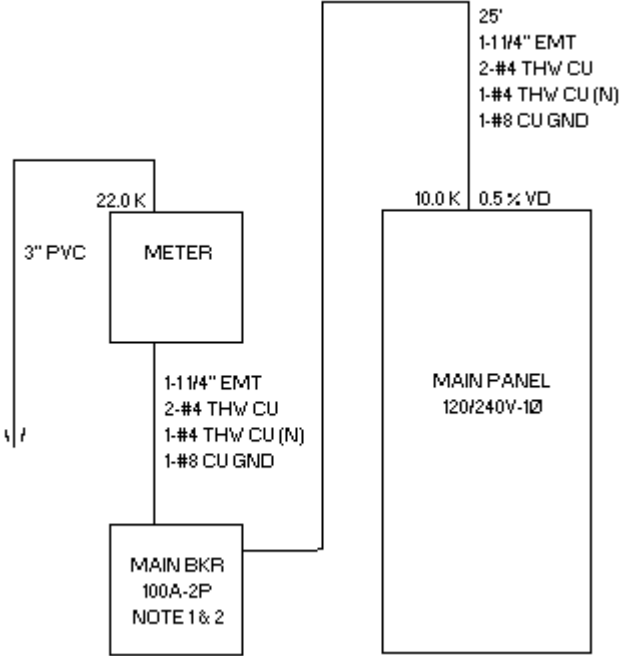
3"

1"
1 1/4"
1 1/2"
2"
2 1/2"
3"
3 1/2"
4"

- **Conduit Type** (Select conduit type)

PVC

RIGID
IMC
PVC



FEEDER	
FEEDER TYPE	CONDUIT
LENGTH	10'
WIRE CU/AL	AL
WIRE TEMP	75° C
MINIMUM AMPS	0
% FACTOR	0%
GROUND WIRE Y/N	YES
SELECT WIRE TYPE	THW
CONDUIT TYPE	EMT
VOLTAGE DROP % FACTOR	0%

FEEDER INFORMATION

- **Select Feeder Type** (Conduit, SER cable or MC cable)
- **Length** (Enter length of main feeder)
- **Wire CU/AL** (Select CU or AL)
- **Wire Temp** (Select 60, 75, or 90)
- **Minimum Amps** (Enter minimum amps)

Note: If you use the Optional calculation method the program automatically sizes the main feeder at a minimum of 100 amps per Code requirements.
If you use the Standard calculation method the program automatically sizes the main feeder at a minimum of 60 amps.

- **% Factor** (Enter % Factor)

Note: This factor will add the percentage of the connect load for future use.

- **Ground Wire Y/N** (Select YES or NO)
- **Select Wire Type** (Select from pulldown menu)

THW
RHW
THHN
XHHW
THW-CA
THHN-CA
XHHW-CA

- **Conduit Type** Select from pulldown menu)

EMT
RIGID
IMC
PVC-40
RIGID/PVC
FLEX
LT-FLEX

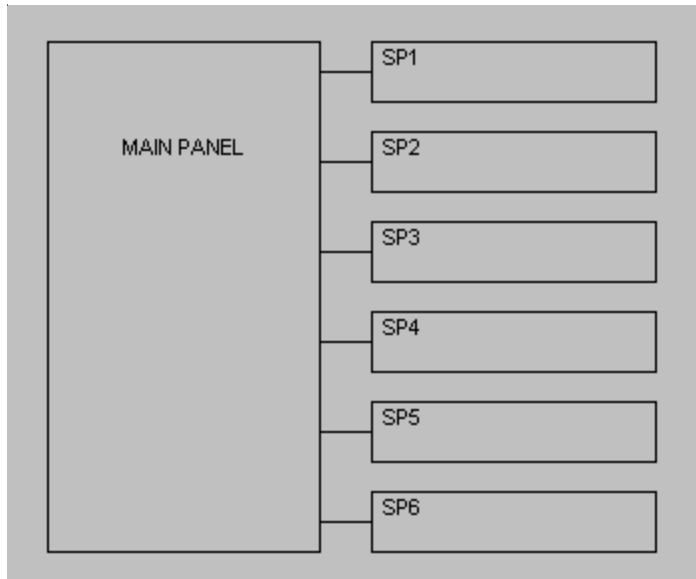
- **Voltage Drop % Factor** (Enter % Factor)

Note: This factor will increase the wire size reducing voltage drop.

SUBPANELS

NUMBER OF SUBPANELS

6

**SUBPANEL INFORMATION**

- **Number of Subpanels** (Enter number of subpanels)

Note: You may have up to six (6) subpanels fed from the main panel.

All calculations for sub panels use the standard calculation method per NEC requirements.

MAJOR APPLIANCES

DESCRIPTION

QTY

KVA (EA)

RANGE(S) & OVEN(S)

1

12

CLOTHES DRYER(S)

1

5.5

WATER HEATER(S)

1

4.5

MAJOR APPLIANCE INFORMATION

- **Ranges & Ovens** (Enter quantity & KVA)

- **Clothes Dryers** (Enter quantity & KVA)

- **Water Heaters** (Enter quantity & KVA)

BUILT-IN APPLIANCES (120 VOLT)

DESCRIPTION	QTY	AMPS
FURNACE	1	7.2
DISPOSAL	1	6.5
DISHWASHER	1	11.2
MIRCOWAVE	1	9
CENTRAL VAC	1	12

BUILT-IN APPLIANCES (120 VOLT) INFORMATION

- Enter the description, quantity, and amps for each load.

HEATING/COOLING

1. ENTER 100% OF THE NAMEPLATE RATING(S) OF THE AIR CONDITIONING AND COOLING EQUIPMENT. ENTER KVA

2. ENTER 100% OF THE NAMEPLATE RATING(S) OF THE HEAT PUMP WHEN THE HEAT PUMP IS USED WITHOUT ANY SUPPLEMENTAL ELECTRIC HEATING. ENTER KVA

3. ENTER 100% OF THE NAMEPLATE RATING(S) IN KVA OF THE HEAT PUMP COMPRESSOR. ENTER KVA

 ENTER 100% OF THE SUPPLEMENTARY ELECTRIC HEAT USED WITH THE HEAT PUMP. ENTER KVA
 NOTE: PROGRAM WILL AUTOMATICALLY ADJUST THIS AMOUNT TO 65%.

4. ENTER 100% OF THE NAMEPLATE RATING(S) OF ELECTRIC SPACE HEATING IF LESS THAN FOUR SEPARATELY CONTROLLED UNITS. ENTER KVA

 NOTE: PROGRAM WILL AUTOMATICALLY ADJUST THIS AMOUNT TO 65%.

5. ENTER 100% OF THE NAMEPLATE RATING(S) OF ELECTRIC SPACE HEATING IF FOUR OR MORE SEPARATELY CONTROLLED UNITS. ENTER KVA

 NOTE: PROGRAM WILL AUTOMATICALLY ADJUST THIS AMOUNT TO 40%.

6. ENTER 100% OF THE NAMEPLATE RATING(S) OF ELECTRIC THERMAL STORAGE AND OTHER HEATING SYSTEMS WHERE THE USUAL LOAD IS EXPECTED TO BE CONTINUOUS AT THE FULL NAMEPLATE VALUE. SYSTEMS QUALIFYING UNDER THIS SELECTION SHALL NOT BE CALCULATED UNDER ANY OTHER SELECTION IN 220.82(C). ENTER KVA

HEATING & COOLING INFORMATION

Enter the KVA of each item.

MISC. 120 VOLT LOADS			
	DESCRIPTION	QTY.	AMPS EACH
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			

MISC 120 VOLT LOAD INFORMATION

- Enter the description, quantity, and amps for each load.

NOTE: Do not include any loads listed under built-in appliances.

MISC. 208 OR 240 VOLT LOADS			
	DESCRIPTION	QTY.	AMPS EACH
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

MISC 208 or 240 VOLT LOAD INFORMATION

- Enter the description, quantity, and amps for each load.

NOTE: Do not include any loads listed under built-in appliances.

BACKUP POWER SYSTEM

- Select YES if you want a backup power system.

BACKUP POWER SYSTEM
BACKUP POWER

- Enter the data for your backup power system

BACKUP POWER SYSTEM

BACKUP POWER	YES
DESCRIPTION	GEN SET
KW	13
MAIN BREAKER SIZE	50
PHASE	1
TRANSFER SW AMPS	100

- Enter the description for the backup power feeder

BACKUP FEEDER MAKEUP

LINE 1	2" EMT
LINE 2	3-#1 THW CU
LINE 3	1-#6 THW CU (N)
LINE 4	1-#8 CU GND
LINE 5	

BACKUP POWER OPTIONS

- The following selections will produce this 1-Line Riser

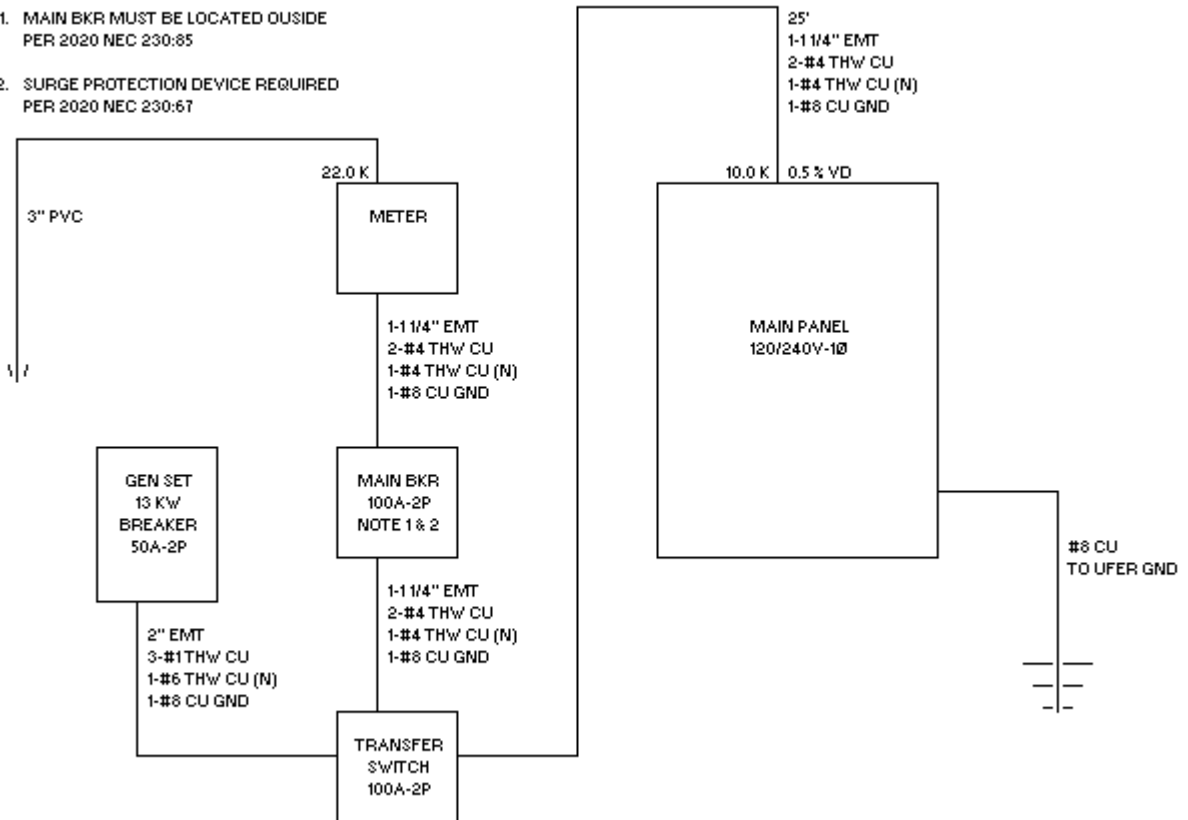
SERVICE FEEDER	
OVERHEAD / UNDERGROUND	UNDERGROUND
METER-MAIN.PANEL	METER
MAIN-PANEL	MAIN
CONDUIT SIZE	3"
CONDUIT TYPE	PVC

BACKUP POWER SYSTEM	
BACKUP POWER	YES

NOTES

1. MAIN BKR MUST BE LOCATED OUTSIDE PER 2020 NEC 230:85
2. SURGE PROTECTION DEVICE REQUIRED PER 2020 NEC 230:67

FEEDER PER TABLE 310.12(D)



BACKUP POWER OPTIONS

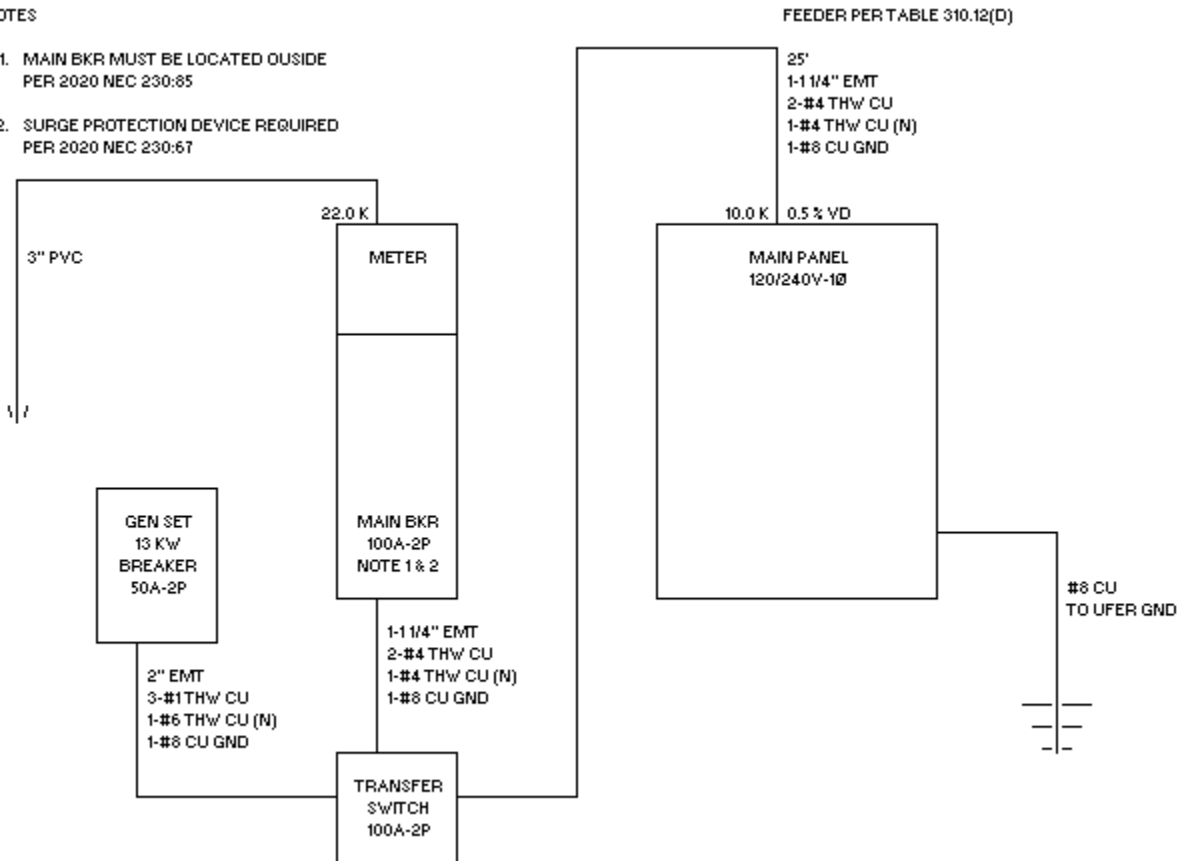
- The following selection will produce this 1-Line Riser

SERVICE FEEDER	
OVERHEAD / UNDERGROUND	UNDERGROUND
METER-MAIN PANEL	METER MAIN
CONDUIT SIZE	3"
CONDUIT TYPE	PVC

BACKUP POWER SYSTEM	
BACKUP POWER	YES

NOTES

1. MAIN BKR MUST BE LOCATED OUTSIDE PER 2020 NEC 230:85
2. SURGE PROTECTION DEVICE REQUIRED PER 2020 NEC 230:67



BACKUP POWER OPTIONS

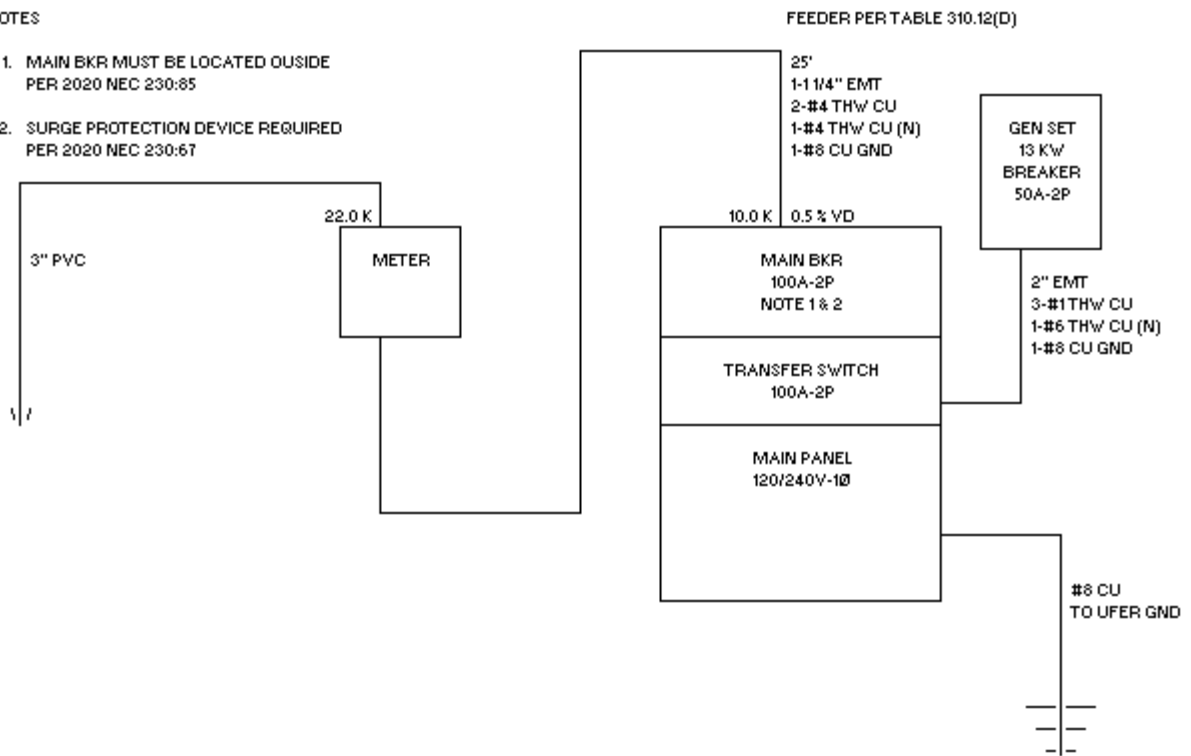
- The following selection will produce this 1-Line Riser

SERVICE FEEDER	
OVERHEAD / UNDERGROUND	UNDERGROUND
METER-MAIN.PANEL	METER
MAIN-PANEL	MAIN PANEL TRANSFER
CONDUIT SIZE	3"
CONDUIT TYPE	PVC

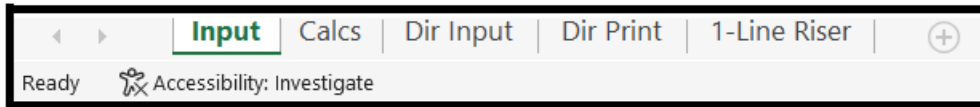
BACKUP POWER SYSTEM	
BACKUP POWER	YES

NOTES

1. MAIN BKR MUST BE LOCATED OUTSIDE PER 2020 NEC 230:85
2. SURGE PROTECTION DEVICE REQUIRED PER 2020 NEC 230:67



TABS

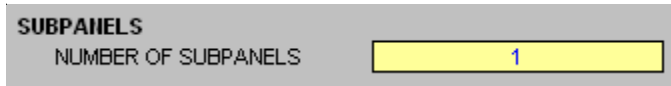


Located at the bottom of the screen are 5 tabs.

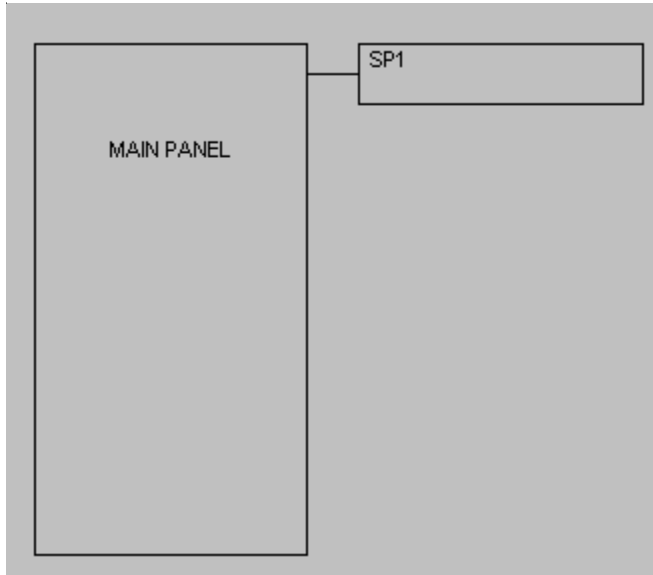
1. Input tab is used to enter your project's information.
2. Calcs tab is used to view and print your load calculations.
3. Dir Input tab is used to input the circuit directory information.
4. Dir Print tab is used to print the circuit directory.
5. The 1-Line Riser tab is used to print the 1-Line drawing.

WORKING WITH SUBPANELS

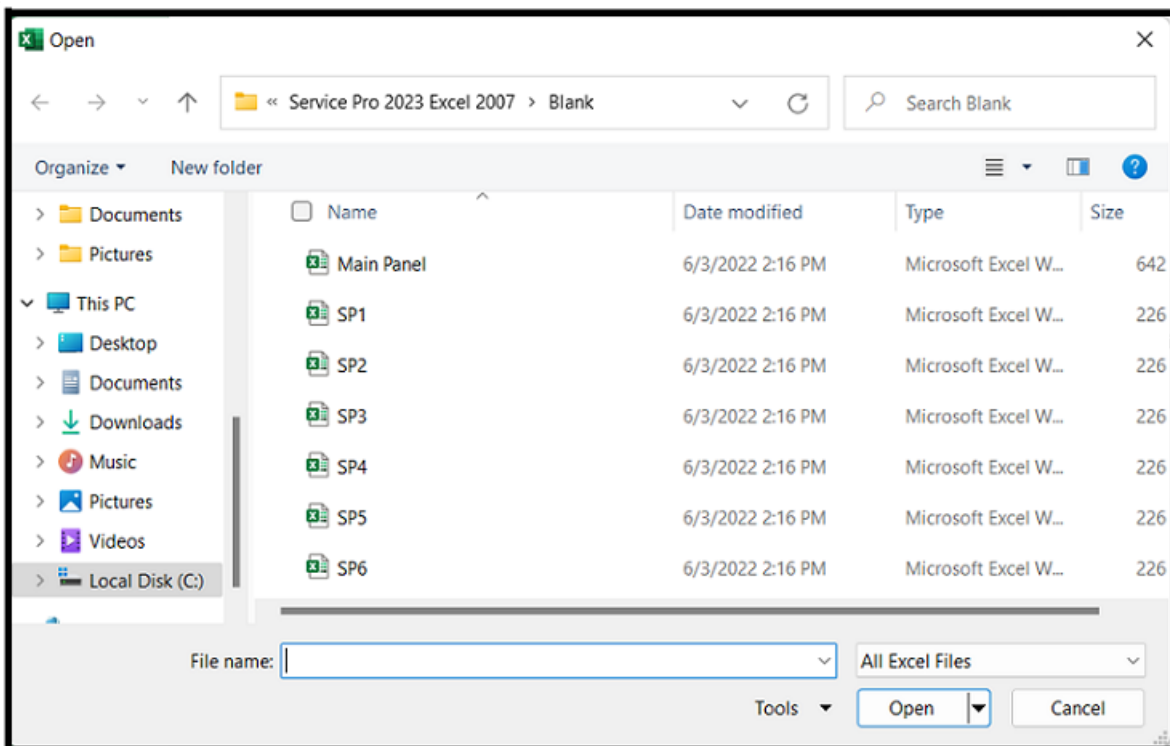
Let's say you wish to have a sub panel fed from the main panel.
On the main panel input tab enter 1 sub panel.



The display will now show 1 subpanel.



Now use the FILE OPEN command and select SP1, then click open.



GENERAL ENTRIES

GENERAL INFORMATION

PROJECT NAME: SAMPLE

HIGH VOLTAGE: 240
LOW VOLTAGE: 120

Subpanel #1

PANEL NAME: SP1
PHASE: 1
TOTAL SQUARE FOOTAGE: 600
APPLIANCE CIRCUITS: 0
LAUNDRY CIRCUITS: 1

FEEDER

FEEDER TYPE: CONDUIT
LENGTH: 25'
WIRE CU/AL: AL
WIRE TEMP: 75° C
MINIMUM AMPS: 0
% FACTOR: 0%
GROUND WIRE Y/N: YES
SELECT WIRE TYPE: THW
CONDUIT TYPE: EMT
VOLTAGE DROP % FACTOR: 0%

FEEDER

1-1" EMT
2-#4 THW AL
1-#6 THW AL (N)
1-#8 AL GND

AFC AT THIS PANEL

6,580 CLC

Enter the feeder details

Information automatically generated by the program.

Enter the portion of the total square feet fed by this panel and any appliance or laundry circuits.

MAJOR APPLIANCES

DESCRIPTION	QTY	KVA (EA)
RANGE(S) & OVEN(S)	1	12
CLOTHES DRYER(S)	1	5.5
WATER HEATER(S)	1	4.5

BUILT-IN APPLIANCES (120 VOLT)

DESCRIPTION	QTY	AMPS
FURNACE	1	7.2
DISPOSAL	1	6.5
DISHWASHER	1	11.2
MIRCOWAVE	1	9
CENTRAL VAC	1	12

Enter loads for any appliances fed from this panel

HVAC ENTRIES

HEATING/COOLING	
1. ENTER 100% OF THE NAMEPLATE RATING(S) OF THE AIR CONDITIONING AND COOLING EQUIPMENT.	ENTER KVA 4
2. ENTER 100% OF THE NAMEPLATE RATING(S) OF THE HEAT PUMP WHEN THE HEAT PUMP IS USED WITHOUT ANY SUPPLEMENTAL ELECTRIC HEATING.	ENTER KVA 0
3. ENTER 100% OF THE NAMEPLATE RATING(S) IN KVA OF THE HEAT PUMP COMPRESSOR.	ENTER KVA 0
ENTER 100% OF THE SUPPLEMENTARY ELECTRIC HEAT USED WITH THE HEAT PUMP. <i>NOTE: PROGRAM WILL AUTOMATICALLY ADJUST THIS AMOUNT TO 65%.</i>	ENTER KVA 0
4. ENTER 100% OF THE NAMEPLATE RATING(S) OF ELECTRIC SPACE HEATING IF LESS THAN FOUR SEPARATELY CONTROLLED UNITS. <i>NOTE: PROGRAM WILL AUTOMATICALLY ADJUST THIS AMOUNT TO 65%.</i>	ENTER KVA 0
5. ENTER 100% OF THE NAMEPLATE RATING(S) OF ELECTRIC SPACE HEATING IF FOUR OR MORE SEPARATELY CONTROLLED UNITS. <i>NOTE: PROGRAM WILL AUTOMATICALLY ADJUST THIS AMOUNT TO 40%.</i>	ENTER KVA 0
6. ENTER 100% OF THE NAMEPLATE RATING(S) OF ELECTRIC THERMAL STORAGE AND OTHER HEATING SYSTEMS WHERE THE USUAL LOAD IS EXPECTED TO BE CONTINUOUS AT THE FULL NAMEPLATE VALUE. SYSTEMS QUALIFYING UNDER THIS SELECTION SHALL NOT BE CALCULATED UNDER ANY OTHER SELECTION IN 220.82(C).	ENTER KVA 0

Enter heating & cooling loads fed from this panel.

NOTE:

Displayed above is the heating & cooling loads for the 2023, 2020, 2017, 2014, 2011, and 2008 NEC. Other Code years will appear differently.

MISC. 120 VOLT LOADS			
	DESCRIPTION	QTY.	AMPS EACH
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			

MISC 120 VOLT LOAD INFORMATION

- Enter the description, quantity, and amps for each load fed from this panel.

NOTE: Do not include any loads listed under built-in appliances.

MISC. 208 OR 240 VOLT LOADS			
	DESCRIPTION	QTY.	AMPS EACH
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

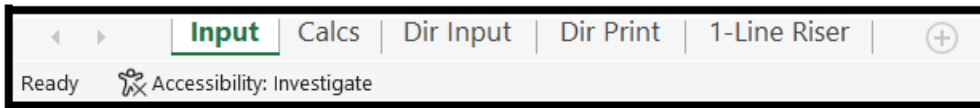
MISC 208 or 240 VOLT LOAD INFORMATION

- Enter the description, quantity, and amps for load fed from this panel.

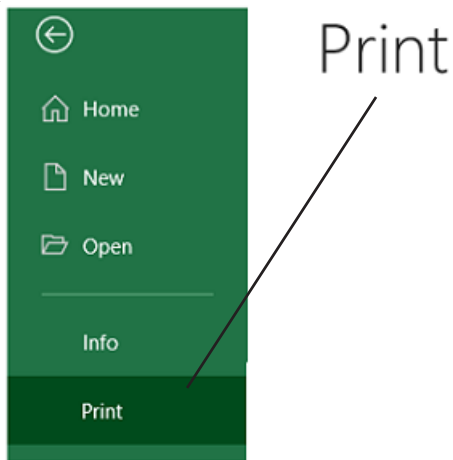
NOTE: Do not include any loads listed under built-in appliances.

PRINTING

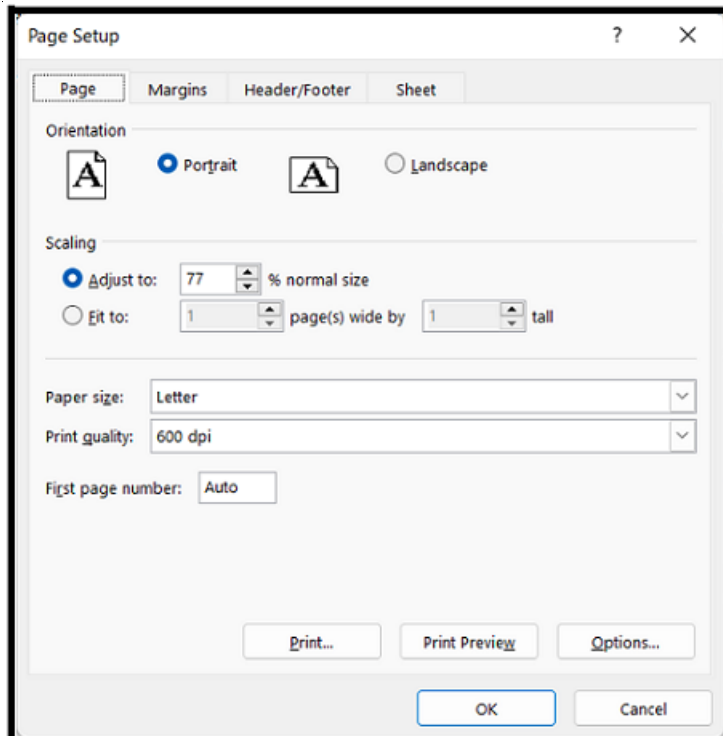
To print your load calculations, circuit directory, or 1-Line click on the Calcs Tab.



Select the File Print Command

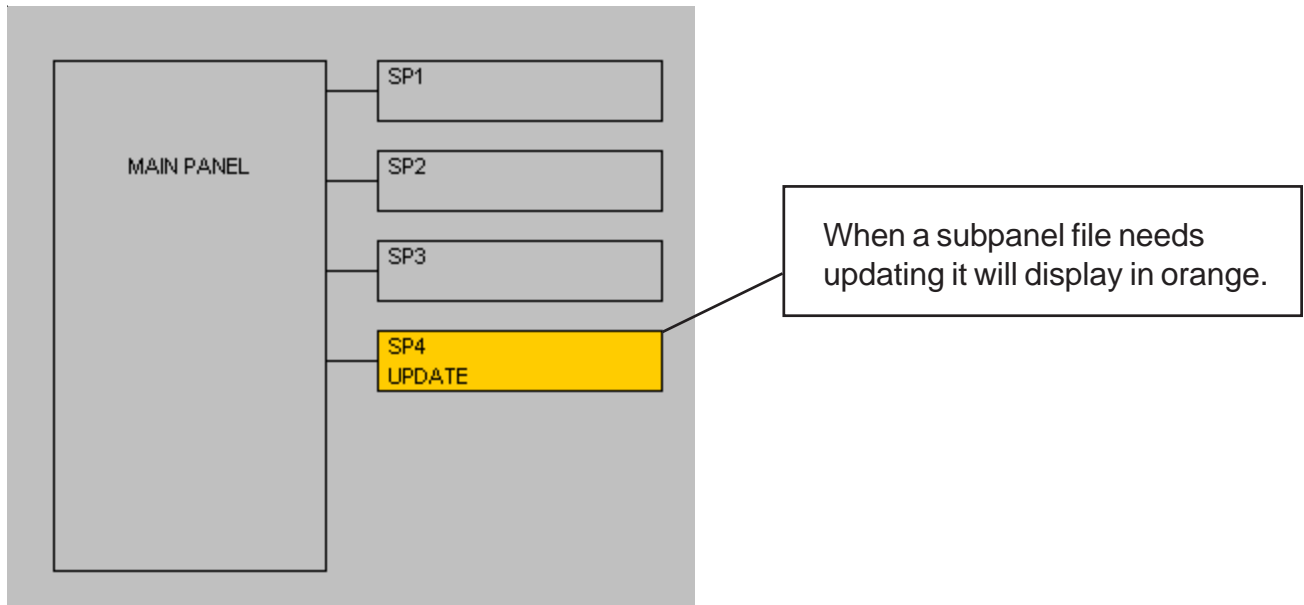


If the calculations print on more than one page, go to the “File Page Setup Command” and reduce the percentage.



UPDATE

The subpanel files link to the main panel file. When certain information in the main panel changes the subpanel file may require updating.



To update a file use the FILE OPEN command and select the desired file.