

## BACKUPS

[FAQ](#)

[Why Backup?](#)

[Backup Location](#)

[Net Connections](#)

[Programs](#)

[Schedule](#)

[Procedures](#)

---

# Frequently Asked Questions

## **I do a backup once a week and sometimes longer, is this sufficient?**

In most cases, I would have to say no. It is a lot safer to do daily backups and even twice a day if a lot of is being done during the day. Frequent back ups really only have one problem in that if you are backing up a file that has been corrupted or not backing up a file that you accidentally deleted then you will find it difficult to find the last good copy of the file.

An excellent way to schedule your backups is based on the quantity of work being done. The more work performed the more often you should backup.

I may be possible with to restore older versions of a backup. Be sure to ask CADD support if they can retrieve a backups older than what you currently have on the project backup server.

## **How do I restore a backup file myself?**

When you backup your projects they are coping to a Projects Server in Roadway Design. So it is fairly easy for you to go and look for a backup copy. The backups are done over a shared directory on your computer to the Projects Server. All you have to do to get your backup is find the copy of the file on your shared directory. Just be sure to save a copy of your current file in case the backup file is not as good as your current file.

**I don't have to do normal plan project backups, but I do need backups of some of my files, is this possible?**

In some cases you can. We are currently backing up certain workstations. A directory called MYFILES should be located on your workstation. Employees that are included in the "management" or "squad leader" group should put their files under this myfile directory. If you fall under the management group then your myfiles folders are backed up for you automatically. You will need to see CADD support to restore backups. If you fall under the Squad Leader group then you must follow the procedures given later in this document.

If you do not fall in either of these group you cannot get your myfile work backed up by the CADD Support section, but we still back up your workstation user profile data. This can be used when moving your login account to another workstation.

**IMPORTANT:** Your MYFILES directory is shared on your computers. DO NOT remove this share.

## **Why do Project Backups?**

Backing up files can become a complex process from the vantage point of a system manager. There is no doubt that each user needs to keep accurate and complete backups of hard disk files. There are many reasons to make backups, here are few:

1. If a file is corrupted or removed accidentally you may need to get the backup file. This saves you from having to start over. Note: Be sure not to run the backup routines before restoring a accidentally removed file.
2. If the system crashes the hard disk may have to be rebuilt, resulting in a loss of data.

The CADD Section has devised routines for you to backup your project directories. The method involves coping you project's files to another storage location.

## **Backup Location**

We currently provide two options for backup locations. Most will backup their construction project files on the Roadway Project Server. In some cases, others files are backed up to alternate locations.

### 1. Construction Projects

Project directories located on your machine are given a name based on its project number. These directories will be backed up on the Project Server. This will serve two purposes. First, it will create a backup and second, it gives us a central location to give access to the projects on the Intranet.

### 2. Other Projects Files

For the squad leader designers who have non-construction project data to backup. It can be backed up on another workstation in the squad area. This can be done by putting these files in a local directory called MYFILES. This can then backed up through a [network connection](#) from your workstation to a selected computer in their squad area.

### 3. Office Management Files

For those that have be labels as Office Management users, a Backup Server "RWDSRVBACKUP" has been created that runs a program that looks on those machines for data to back up. This is done by creating a shared MYFILES directory on the workstation. The Server then automatically finds this shared directory and backs up any file in that directory. The backup is done daily and requires that you maintain the MYFILES shared directory. Do not remove the share on this directory. Since CADD support provides this service automatically, no action on the user's part is required. You may have to contact CADD support to restore backed up files.

The location is defined by using standard Drive letters for the shared connections. See the next topic for these settings.

## Network Connections

On the workstation, the user who does the backups (usually the squad leader) can mount network drives using Explorer. Read below to learn the correct drive letters to use:

### **PROJECT BACKUPS**

The standard drive letter for your construction project backups is the drive letter **L**. Connect to the Project Server "RWDSRVPRJ" using the drive letter L. Connect to the PROJECT share, DO NOT connect to the Construction folder under the share.

### **OTHER FILES TO BACKUP**

Office management users DO NOT have to make any network connections, although they must have their MYFILES directory shared.

If the other users (usually squad leaders) have a directory called MYFILES located on their machine they must do the following:

1. Create a directory on another workstation in their squad. We recommend creating a "BACKUP" directory on the D: drive.
2. Share this directory with the share permission set so that only the authorized users have access.
3. On their own workstation create a network connection...

The standard drive letter for this network connection is the drive letter **K**.

It is possible for a Squad Member to backup the project folders if the proper permissions and network connections are made.

1. The squad member must have a mapped drive letter called **P** connected to the squad leaders Projects Folder.
2. The squad member must also map the drive letter **L** to the Project Server. Permissions must be granted by the CADD support section for this squad member can write to the server folders.

NOTE: You cannot change these drive letter connection names. Doing so will nullify the usage of the backup programs.

# Backup Programs

To make it easier to backup, a few programs are available for you to use. In order for these programs to work properly you must have your [network connection drive letters](#) assigned.

The provided programs are as follows:

---

**robobup:** Backs up files from the directory **D:\PROJECTS** to the drive letter **L:**

This program is designed to backup project files to the Project Server. With local files being located on the D: drive. The proper network connections must be made. Permissions must set on the Project Server for this to work. See CADD support for help setting this up.

The Mapped location L is created by connecting to the share \\rwdsrvprj\projects

Usage:

1. Start using a shortcut icon located in the desktop folder...  
\_RWD\_APPS > APPS FOR RWD ONLY > ROBO BUP



Note: You may copy this shortcut to your main desktop or pin to you task bar for easier access.

2. Let the program process your project folders and backup files as needed.
3. View the backup log file to confirm files were backed up properly.

The following is a detail description of the robobup process:

The program uses a command called “robocopy” instead of the “XCopy” command as did the previous backup routines. In order to simplify the usage of the robocopy command I have created a new program (ROBOBUP) that will do the following:

1. It checks to see what project folders you have in your D:\projects folders and checks to see if there is an identically named folder under L:\construction. If any of these test fail the program will not perform a backup.
2. If all the checks are good, it steps through each of your local project folders and files one at a time and then backups any file that is new or modified that does not already exist on the backup. It should skip any file that is already backed up and it has not changed since the last backup.

3. It will also locate any files that no longer exist on your local computer (the source) and delete if from the backup location (the destination). This is what robocopy calls "purge" or in the backup report they are called extra files.
4. The program status or the reporting that robocopy does is a lot different from what xcopy does and is not really suited to view while in progress in the console window, this is due to a larger amount of information that it reports. Instead of sending the data to the command window, A report log is displayed, that you can view at the end of the process.

Here is a sample of the report log generated, explaining how to read the results...

```
-----  
ROBOCOPY      ::      Robust File Copy for Windows  
-----  
  
Started : Fri Dec 07 11:30:49 2012  
Source  : d:\projects\5\  
Dest    : l:\construction\5\  
Files   : *  
Options : /NS /NDL /S /COPY:DAT /PURGE /NP /XO /R:0 /W:30  
-----  
  
2012/12/07 11:30:49 ERROR 2 (0x00000002) Accessing source directory d:\projects\5\  
The system cannot find the file specified.
```

The program creates an array list of your project folders and then steps through each folder in order. The first item in the array is the number of project folders you have. In this example there are five (5) folders. The number 5 is the first item in the array and the program reads that item and it tries to use that as a project folder name. This of course is not one of your project folders so the output file shows this as an ERROR as shown above. You can ignore this first section in the report for it currently will always show up in the report. The actual backup starts when it moves to the next folder in the array list as shown in the next image...

```

-----
ROBOCOPY      ::      Robust File Copy for windows
-----

Started : Fri Dec 07 11:30:49 2012
Source  : d:\projects\012-345-6789(01)\
Dest    : l:\construction\012-345-6789(01)\
Files   : *
Options : /NS /NDL /S /COPY:DAT /PURGE /NP /XO /R:0 /w:30
-----

*EXTRA File                                l:\construction\012-345-6789(01)\test.dgn
-----

      Total    Copied    Skipped    Mismatch    FAILED    Extras
Dirs  :        1         0         1           0           0         0
Files :         4         0         4           0           0         1
Bytes :    241.2 k         0    241.2 k         0           0    219.5 k
Times :    0:00:00    0:00:00                    0:00:00    0:00:00

Ended : Fri Dec 07 11:30:49 2012

```

The first folder as shown in the previous image shows up in the report with the Source and Destination folders listed. If any backup process is performed, you will see it listed on the backup options line. You can see that an EXTRA file was reported here (test.dgn). When you see an extra file this indicates that this file was located on the destination folder, but no longer exist in the source folder. This indicates the user deleted this file. The program finds the “extra” file and deletes it from the destination location.

Shown in the next image is the next folder it backs up in the array list of project folders. You again see the Source and Destination folders listed, etc. Notice that in this case nothing as

changed in this folder, therefore no files were listed.

```
-----  
ROBOCOPY      ::      Robust File Copy for windows  
-----  
  
Started : Fri Dec 07 11:30:49 2012  
  
Source : d:\projects\098-765-4321(02)\  
Dest  : l:\construction\098-765-4321(02)\  
  
Files : *  
  
Options : /NS /NDL /S /COPY:DAT /PURGE /NP /XO /R:0 /W:30  
  
-----  
  
-----  
  
      Total      Copied      Skipped      Mismatch      FAILED      Extras  
Dirs  :          2          0          2          0          0          0  
Files :          2          0          2          0          0          0  
Bytes :      1.35 m          0      1.35 m          0          0          0  
Times :      0:00:00      0:00:00          0:00:00      0:00:00      0:00:00  
  
Ended : Fri Dec 07 11:30:49 2012
```

You may also notice that each backup folder process shows a list of sub-directories, files, bytes, times, and a “Ended” statement along with the their total numbers, how many copies were made, how many files were skipped, were mismatched, failed to copy, and how many extra files.

This is useful information, but may be misleading if you don’t understand the results. The items to look out for initially are in the FAILED column. If you see an failures, you will know that some files did not get backed up. This may be casues from files being open during the backup process or some sort of security setting blocking the writing of the file on the destination.

The next image show the next project directory to backup. Again, you see similar information, but you see that this folder has a lot of “Extra Files” listed...

```

-----
ROBOCOPY      ::      Robust File Copy for windows
-----

Started : Fri Dec 07 11:30:49 2012

Source : d:\projects\100-666-5555(05)\
Dest   : l:\construction\100-666-5555(05)\

Files  : *

Options : /NS /NDL /S /COPY:DAT /PURGE /NP /XO /R:0 /W:30

-----

*EXTRA File          l:\construction\100-666-5555(05)\DATEED32.DLL
*EXTRA File          l:\construction\100-666-5555(05)\DATEED64.DLL
*EXTRA File          l:\construction\100-666-5555(05)\DATEEDIT.GID
*EXTRA File          l:\construction\100-666-5555(05)\DATEEDIT.HLP
*EXTRA File          l:\construction\100-666-5555(05)\DATEEDIT.INF
*EXTRA File          l:\construction\100-666-5555(05)\DATEEDIT.TXT

-----

      Total      Copied  Skipped  Mismatch  FAILED  Extras
 Dirs  :         4         0         4         0         0         0
Files  :        161         0        161         0         0         6
Bytes  :    16.66 m         0    16.66 m         0         0    283.9 k
Times  :    0:00:00    0:00:00          0:00:00    0:00:00    0:00:00

Ended : Fri Dec 07 11:30:49 2012

```

This indicates again that those files were removed from the source folders sometime since you last backup. Therefore, the program DELETES these files from the destination location.

This process differs from earlier procedures, where you now maintain an exact copy of the source files and destination files. If you take advantage of using the destination to store extra files then you MUST not do this any longer. They will get removed if they do not exist in the source folders.

The final example project folder shown in the next image, shows a combination of things. It shows some extra files and some new files. Since the last backup the users deleted two files (fontchange.dgn.bak and test.txt). These two files were also deleted on the destination backup location. The user also created around 10 new files in the project folders. The report shows these as newer files that were backed up.

```

-----
ROBOCOPY      ::      Robust File Copy for windows
-----

Started : Fri Dec 07 11:30:49 2012

Source : d:\projects\147-258-3690(03)\
Dest   : l:\construction\147-258-3690(03)\

Files  : *

Options : /NS /NDL /S /COPY:DAT /PURGE /NP /XO /R:0 /W:30
-----

```

```

*EXTRA File      l:\construction\147-258-3690(03)\FONTCHANGE.dgn.bak
*EXTRA File      l:\construction\147-258-3690(03)\test.txt
New File         d:\projects\147-258-3690(03)\Network_diagram.dgn
New File         d:\projects\147-258-3690(03)\rsc.bat
New File         d:\projects\147-258-3690(03)\rwdconfig.exe
New File         d:\projects\147-258-3690(03)\SetEnv.exe
New File         d:\projects\147-258-3690(03)\SetMstDefwrkSpace.exe
New File         d:\projects\147-258-3690(03)\showmem.exe
New File         d:\projects\147-258-3690(03)\showmem.txt
New File         d:\projects\147-258-3690(03)\SHRSEC.EXE
New File         d:\projects\147-258-3690(03)\shutdown.exe
New File         d:\projects\147-258-3690(03)\sid.bat
-----

```

	Total	Copied	Skipped	Mismatch	FAILED	Extras
Dirs :	1	0	1	0	0	0
Files :	15	10	5	0	0	2
Bytes :	1.25 m	1.11 m	144.8 k	0	0	140.5 k
Times :	0:00:00	0:00:00			0:00:00	0:00:00

```

Speed :          11461421 Bytes/sec.
Speed :           655.827 MegaBytes/min.

Ended : Fri Dec 07 11:30:50 2012
-----

```

**USED FOR THE PREVIOUS BACKUP ROUTINES, DO NO USE THESE WITHOUT PERMISSION**

**SEE THE ROBOBUP PROCEDURE ABOVE.**

**bupd:** Backs up files from the directory **D:\PROJECTS** to the drive letter **L:**

This program is designed to backup project files to the Project Server. With local files being located on the D: drive. The proper network connections must be made. Permissions must set on the Project Server for this to work. See CADD support for help setting this up.

The Mapped location L is created by connecting to the share \\rwdsvprj\projects

**USED FOR THE PREVIOUS BACKUP ROUTINES, DO NO USE THESE WITHOUT PERMISSION**

**SEE THE ROBOBUP PROCEDURE ABOVE.**

The next program will allow other squad members besides the squad leader the ability to backup project files to the Project Server. This program backups from the source drive **P:** to the network connection drive **L:**. The proper network connections must be made. Additional permissions must set on the Project Server for this to work. See CADD support for help setting this up.

**bupp:** Backs up files from the directory **P:** to the drive letter **L:**.

---

**USED FOR THE PREVIOUS BACKUP ROUTINES, DO NO USE THESE WITHOUT PERMISSION**

**SEE THE ROBOBUP PROCEDURE ABOVE.**

The next program will allow other squad leaders the ability to backup needed files other than official projects on their workstation. These files must be located in the local folder **D:\MYFILES**. Squad leader must select another workstation in their area and create a directory on that workstation (we recommend **D:\backups**, with the share name **MYBACKUPS**). This folder must be shared with the required share permissions to allow write access. Then the squad leader must also have mapped a network drive called **K:** on their workstation to that shared folder.

**bupmy :** Backs up files from the directory **D:\MYFILES** to the drive letter **K:**

# Backup Schedule

Once you have all the proper network connections and have located the proper programs to be used to backup, you need to determine when and how often to do backups. The following section provides some recommendations.

## **Daily**

A daily backup schedule is recommended in most cases. Additional backups can be done if there are a lot of new file changes done during that day. For example, let's say you modify a project number on 45 design files in one morning. If something were to happen to your workstation that afternoon that causes you to lose those files you would have to do that work again. That is because you were planning a late afternoon backup.

## **Every couple of days or Weekly**

Although a weekly backup schedule is not recommended. In some cases you may not have done many file changes during the week. Reasons could be that you haven't worked on but maybe one or two files and it's not real critical that these changes be backed up. You must determine the importance of the work you have done and decide if you feel safe waiting.

Waiting any longer than a few days or a week is asking for trouble.

# Backup Procedures

The following section steps through the entire process of doing backups.

## Step 1

Have all of your project directories located under the directory **D:\PROJECTS**. Have directory MYFILES under the same drive as **D:\MYFILES**. These should be created for you by CADD Support.

## Step 2

The squad leader must be mounted to a network directory called **L:** which is a connection project server backups. This can be done through **Windows Explorer**. Make the network connection to the drive letter **K:** drive if you intend on backing up your MyFiles. See the [Network Connections](#) section if you need details on these net connects.

## Step 3

Using a Command Window, and using the proper backup programs to start a backup procedure.

The command syntax for backup must be typed in as:

### **bupd**

use when Projects are on the D drive and the Backup Drive is L. (L is mapped to \\rwdsrvprj\projects)

### **bupp**

use when Projects are on the network connection P drive and the Backup Drive is L. (L is mapped to \\rwdsrvprj\projects)

### **bupmy**

use when MyFiles are on the D drive and the Backup Drive is K. (K is mapped to another computer selected by the user)

## Step 4

Monitor the process of the backup on the screen. You should see it backing up the files you have modified since your last backup. If you get errors, check the following:

1. Make sure you do not have an invalid directory in your projects folder. Only valid project folders names that have be correct syntax and are also located on the project server are

allowed. If you think you have valid directory names, check the names very closely. Make sure the syntax of each project folder is correct in both locations. They MUST match exactly.

2. If you have a invalid directory and still wish to back it up, move it to your MYFILES directory and implement the MyFile backup routine.

3. Have CADD support check security privileges on the project server. You must have your specific user login account name assigned to have write access to that project.

## Restoration of Files

To restore backed up files to your workstation...

1. Using **Windows Explorer**, go to your drive letter were your files are located and search out your file and copy it back to your computer. You should check the contents of the backup file first to insure that you wish to use it instead of the local file.

2. If you backup corrupted files and can't find a good version on the backup, you still may be able to recover even older backed up files by contacting CADD Support and see if they can recover later versions of the files from the SANS Server Backup.

[BACK](#)