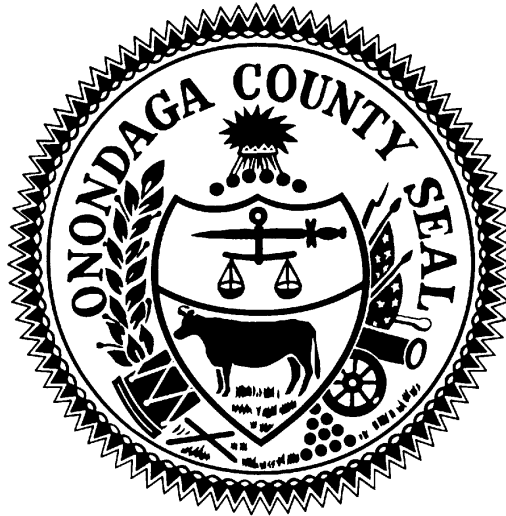




Save the Rain



**Onondaga County Department of Water
Environment Protection (WEP) -
*Record Drawing and Equipment Operation &
Maintenance Manual Transmittal
Procedures***

Version date: 3/6/15

1. Purpose

This document describes how Record Drawings and O&M Manuals are to be provided to WEP.

2. Background

WEP employs Microsoft Sharepoint® as a document management platform to maintain and organize its Record Drawing and Equipment O&M Manual information. The system is designed to allow various WEP staff to search for Record Drawings and/or O&M Manuals in a variety of ways. WEP has developed Record Drawing and O&M Manual Indexes to facilitate the upload of such information into the Sharepoint system. Detailed below, along with attachments 1 thru 5, are the procedures by which the Engineer is to supply Record Drawing and Equipment O&M manual information to WEP.

3. CD Content Transmittal Form

- 3.1. Attachment #1 of this guidance shall be completed by the Engineer and included as a pdf copy with the Record Drawing and Equipment O&M Manuals supplied to WEP.
- 3.2. CDs and covers shall be provided with hard plastic (jewel) cases and labeled with the project name, design engineer, year of final design drawings, and the words "Record Dwgs and Equipment O&M Manuals."

4. Record Drawings

- 4.1. Record drawings shall show the precise as-built locations of all installed and/or modified work by the contractor. The Engineer shall supply four (4) sets of "D" size as-built prints: two on Mylar; and two on paper. The Engineer shall also provide four (4) sets of reduced size as-built prints in paper format to the County. In addition, one (1) complete set of as-built drawings shall be provided in the latest version of AUTOCAD (.DWG); along with one complete set and individual drawing sheets in pdf format (pdf), on compact disk (CD) or single external electronic storage drive (flash drive).
- 4.2. The CAD drawing files turned over to WEP shall also be in an AUTOCAD format compatible with AUTOCAD LT 2013 with no external references. CAD files containing 3-D objects or blocks and/or requiring additional plug-ins shall not be acceptable.
- 4.3. CAD drawings and files shall be supplied to WEP in accordance with the requirements listed in Attachment #2, WEP AUTOCAD File Requirements.
- 4.4. The Engineer shall prepare record drawings as virgin files; that is, tiff, pdf, and other similar image types of files are not to be used for backgrounds. The goal is for WEP to be provided with comprehensive and high-quality drawings that are clear for all to read and understand.
- 4.5. Record Drawings shall be supplied as individual scans/sheets and complete sets. Pdf copies shall be supplied for each individual sheet and the complete set. Dwg copies shall be supplied for complete sets only.
- 4.6. Scan/resolution quality shall be 300 dpi or higher.

5. Record Drawing Index

- 5.1. Table 1, included herein as Attachment #3, lists all of the drawing attributes that must be completed in the index. The Record Drawing Index must be completed, in electronic Excel® format, for each Record Drawing provided to WEP. The most current electronic copy of the Record Drawing Index is located on WEP's website at the address of <http://www.ongov.net/wep/rfp.html>, Request For Proposals – Supporting Documentation. The file contains a number of named tabs associated with the index. It is noted that the index listing are actually columns in the actual index spreadsheet.
- 5.2. The Engineer shall provide WEP with a complete and accurate copy of the Record Drawing Index following the procedures and specifications described herein. The index shall be in Microsoft Excel® format, compatible with 2010 version.
- 5.3. No changes shall be made to the Drawing Index template.
- 5.4. Index/attribute fields, 1 – 13, are required; conveyance information, items 14 - 17, shall be additional requirements for conveyance projects.
- 5.5. Index information shall be selected from drop down choices where applicable.

6. Record Drawing Electronic File Naming Convention

- 6.1. Location (use county location names).
- 6.2. Project name (key words – consultant with WEP on nomenclature).
- 6.3. Project year (date on final design drawings).
- 6.4. Drawing number.
- 6.5. See Table 2, attachment #4, for additional guidance.

6.5.1. Example: "METRO_GRIT UPGRADES_2012_S-101.pdf"

7. Equipment O&M Manuals

The Engineer shall provide original equipment manufacturer O&M Manuals to WEP for each piece of equipment installed as part of the project. Four paper copies shall be supplied for each piece of equipment one week prior to the start of the 14-day equipment test period. Each paper copy shall contain a CD with an electronic copy of the manual in pdf format. Thereafter, the Engineer shall provide WEP with electronic pdf copies of all Equipment O&M Manuals on the same CD supplied for Record Drawings.

8. Equipment O&M Manual Index

- 8.1. Table 3, included herein as Attachment #5, lists all of the O&M manual attributes that must be completed in the index. The O&M Manual Index must be completed, in electronic Excel® format, for each O&M Manual provided to WEP. The most current electronic copy of the O&M Manual Index is located on WEP's website at the address of <http://www.ongov.net/wep/rfp.html>, Request For Proposals – Supporting Documentation. It is noted the index listing are actually columns in the actual index spreadsheet.

- 8.2. The Engineer shall provide WEP with a complete and accurate copy of the O&M Manual Index following the procedures and specifications described herein. The index shall be in Microsoft Excel® format, compatible with 2010 version.
- 8.3. No changes shall be made to the O& M Index template.
- 8.4. All index fields must be completed unless otherwise noted in Table 2.
- 8.5. Index information shall be selected from drop down choices where applicable.

9. Equipment O&M Manual Electronic File Naming Convention

- 9.1. Location (use county locations names)
- 9.2. Project name (key words – consultant with WEP on nomenclature).
- 9.3. Project year (date on final design drawings).
- 9.4. Equipment Name (and number if multiple pieces of the same equipment)
- 9.5. See Table 2, attachment #4, for additional guidance.

9.5.1. Example: "METRO_GRIT UPGRADES_2012_RAS pump_100. pdf"

10. Electronic File Folder Organization

The Engineer shall provide the electronic Record Drawing and Equipment O&M Manual information using the following computer folder system.

- Record Drawings – dwg files
- Record Drawings – pdf files
- Equipment O&M Manuals - pdf

11. Questions

Questions regarding this index can be directed to any WEP Construction Division team member and/or the WEP Project Manager at (315) 435-6820.

**Onondaga County Department of Water Environment Protection -
Record Drawing and Equipment O&M Manual CD Content Transmittal Form**

Project Name: _____
Date: _____
Location: _____
Consulting Firm: _____
General Contractor: _____

	<u>CD Content</u>	<u>Submitted</u> <small>(check box)</small>	<u># Submitted</u>
➔	Record Drawings - Complete Set (PDF)	<input type="checkbox"/>	_____
➔	Record Drawings - Individual Sheets (PDF)	<input type="checkbox"/>	_____
➔	Record Drawings - Complete Set AutoCAD Files (DWG)	<input type="checkbox"/>	_____
➔	Equipment O&M Manuals (PDF)	<input type="checkbox"/>	_____

Comments:

Consultant Signature and Date:

WEP CAD DRAWING FILE REQUIREMENTS

CAD DRAWINGS FILE REQUIREMENTS: The CAD drawings files turned over to the owner shall be in an AutoCad format with no external references. Where external references have been used during development of the drawings, those external references shall be bound to the drawings before the CAD files are provided to the OWNER. The file format shall contain separate layers, appropriate to the PROJECT, for the following features:

- Drawings borders and title blocks;
- All Work items to be “removed”.
- Dimensions, column lines & designations and centerlines;
- Fire rating indicators;
- Building walls doors ,and windows and general construction details and features;
- Building reflected ceiling plans;
- Building modular furniture;
- Building HVAC;
- Building plumbing;
- Building sprinkler/fire protection;
- Building electrical;
- Building lighting plans;
- Topographical information;
- Easements, Right of Ways lines, property lines and monuments;
- All control monumentation (RCS, USC, & GS, etc.);
- Street Curb Lines;
- Sidewalks;
- Driveway aprons with labels, if applicable;
- Street lights with labels, if applicable;
- Street lines (determined by survey methods);
- Grid or grid tics (100’ spacing) with NAD ’83 coordinate values labeled on grid;
- Water mains (if constructed as part of the PROJECT);
- Sewer Mains (if constructed as part of the PROJECT);
- Public utilities.

Notes related to any one of the above items should be created on the same layer. The CONSULTANT may create additional layers or sub-layers to suit PROJECT needs. Any layers listed above that do not pertain to the PROJECT may be omitted.

Table 1 - WEP Record Drawing Index Spreadsheet Standards

Index #	Conveyances	WWTP's	Standard Dropdown List Selection (Y or N)	Excel® Field Type	Specifications
1	Facility Name	Facility Name	Y	text	WEP Facility Name; must use name from Facility Name tab. Refer to Record Drawing Index spreadsheet on WEP's website.
2	Project Title	Project Title	N	text	As stated on the Record Drawings.
3	Sheet Title	Sheet Title	N	text	Sheet Title as it appears on Record Drawing (e.g., General Plan, Grading Plan, Details).
4	Sheet #	Sheet #	N	text	Sheet Title as if appears on Record Drawing (e.g., G-002, G-016).
5	Trade	Trade	Y	text	Construction Trade (civil, mech., electrical, HVAC, plumbing, structural). Refer to Record Drawing Index spreadsheet on WEP's website.
6	File Type (pdf, dwg)	File Type (pdf, dwg)	Y	text	Describes electronic file type: must be in pdf or dwg format.
7	File Name	File Name	N	text	Name of the electronic file. Use naming convention provided by WEP.
8	Drawing Type	Drawing Type	Y	text	Record or Bid. Engineer to only supply Record Drawings. Bid code is used for internal WEP use only.
9	Complete Set (yes or no)	Complete Set (yes or no)	Y	text	Yes or No. Record Drawings shall be supplied as individual sheets and complete sets. Pdf copies shall be supplied for each individual sheet and the complete set.
10	Engineer	Engineer	N	text	Do not use abbreviations.
11	Prime Contractor	Prime Contractor	N	text	Prime construction contractor's full name. Do not include subcontractor names.
12	Year	Year	N	number	Year of final design drawings.
13	Bid #	Bid #	N	number	WEP 4-digit #.
14	Sewer District	non-applicable	Y	text	Must use name from Sewer District tab. Refer to Record Drawing Index spreadsheet on WEP's website.
15	Service Area	non-applicable	Y	text	Must use name from Service Area tab. Refer to Record Drawing Index spreadsheet on WEP's website.
16	Trunk Sewer	non-applicable	Y	text	Must use name from Trunk Sewer tab. Refer to Record Drawing Index spreadsheet on WEP's website.
17	Forcemain	non-applicable	Y	text	Must use name from Forcemain tab. Refer to Record Drawing Index spreadsheet on WEP's website.

Notes:

1. The index names above are actually column headings in the Record Drawing index spreadsheet.

Table 2 - WEP File Naming Guidance

The purpose of this file naming guide is to ensure that WEP's electronic drawing files are organized, identifiable and findable. All entries into the file index shall follow the guidelines provided below:

The rules listed below are best practices that should be followed as closely as possible.

Not every rule will apply to every document but if these rules are used consistently WEP's documents will be much more identifiable and findable.

Summary of file naming rules

- Rule #1.** Do not use special characters in a file name. \ / : * ? " < > | [] & \$, . () @ % , etc.
- Rule #2.** Do not use spaces, instead use underscores.
- Rule #3.** Keep file names reasonably short.
- Rule #4.** The file name should include all necessary descriptive information.
- Rule #5.** Be consistent.

Detailed description of the rules

- Rule #1. Do not use special characters in a file name. \ / : * ? " < > | [] & \$, . () @ , etc.**
- Other than the underscore no special characters should be used in a file name.
 - Special characters can cause problems when displaying a file name or when doing a search.
 - Characters such as the dot "." are used to separate the file name from the file extension.
 - The asterisk and question mark can be used as wildcards in a file search so files that contain these special characters may not be found as expected.
- Rule #2. Do not use spaces, instead use underscores.**
- Spaces in a file name can cause problems when the file is posted on a web site.
 - Spaces in a file name can also cause problems when creating a hyperlink to the file.
- Rule #3. Keep file names reasonably short.**
- Some operating systems will allow file name up to 256 characters, however, other operating systems have a much smaller limit.
 - Generally try to keep file names under 30 characters.
- Rule #4. The file name should include all necessary descriptive information.**
- A more descriptive name would be "WEP_Budget_2012_memo.doc"
- Rule #5. Be consistent.**
- The most important part of a file naming convention is that it be used consistently.

Table 3 - Equipment O&M Manual Index Spreadsheet Standards

Index #	Conveyances	WWTP's	Standard Dropdown List Selection (Y or N)	Excel® Field Type	Specifications
1	Facility Name	Facility Name	Y	text	WEP Facility Name; must use name from Facility Name tab. Refer to Record Drawing Index spreadsheet on WEP's website.
2	Project Title	Project Title	N	text	As stated on the Record Drawings.
3	Equipment Name	Equipment Name	N	text	Per contract Drawings (consult with WEP).
4	Manufacturer	Manufacturer	N	text	Original Equipment Manufacturer
5	Asset ID #	Asset ID #	N	number	Value supplied by WEP.
6	Asset Classification	Asset Classification	Y	text	Value supplied by WEP.
7	Engineer	Engineer	N	text	Do not use abbreviations.
8	Bid #	Bid #	N	number	WEP 4-digit #.
9	File Type (pdf, word,)	File Type (pdf, word,)	Y	text	Describes electronic file type: must be in pdf.
10	File Name	File Name	N	text	Name of the electronic file. Use naming convention provided by WEP.
11	Manual Version Date	Manual Version Date	Y	date	As listed by manufacturer.

Notes:

1. The index names above are actually column headings in the Equipment O&M Manual index spreadsheet.