

SECTION 01 78 39**PROJECT RECORD DOCUMENTS****1.1 RECORD DRAWINGS**

- A. Preparation: Submit record drawings in the form of PDF, AutoCAD or BIM Model (or both), as applicable.
1. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 2. Accurately record information in an acceptable drawing technique.
 3. Record data as soon as possible after obtaining it.
 4. Record and check the markup before enclosing concealed installations.
 5. Cross-reference record prints to corresponding archive photographic documentation
 6. Architect shall furnish the Contractor with AutoCAD, Bim Design Intent Model, or both files, for originals of the Contract Drawings. The Contractor shall make modifications to these files as shown on the marked-up drawings. Remove any superseded information to show the completed installation. The Contractor shall deliver the completed AutoCAD, Bim Model or both as-built record drawings in the same version as the Contract Drawings. The record drawings shall become the property of the Owner.
- B. Content: Types of items requiring marking include, but are not limited to, the following:
1. Dimensional changes to Drawings.
 2. Revisions to details shown on Drawings.
 3. Depths of foundations below first floor.
 4. Locations and depths of underground utilities based upon as-built survey.
 5. Revisions to routing of piping and conduits.
 6. Revisions to electrical circuitry.
 7. Actual equipment locations.
 8. Duct size and routing.
 9. Locations of concealed internal utilities.
 10. Changes made by Change Order or Construction Change Directive.
 11. Changes made following Architect's written orders.
 12. Details not on the original Contract Drawings.
 13. Field records for variable and concealed conditions.
 14. Record information on the Work that is shown only schematically.
- C. Additional Requirements for AutoCAD Record Documents:
1. Comply with Dartmouth College's AutoCAD Standards & Protocols, as follows:
 - a. Base Drawing Standards
 - 1) In order to maintain floor plan consistency, Dartmouth College has developed standards for base drawings
 - a) Naming Convention
Floor plans will be delivered with the following naming convention:
A-XXXXXX-XX

A-baker-00

A= architectural

XXXXXX = Max. 6-character Building code assigned by Dartmouth College

XX = indicates which floor level

b) General Layer List

Dartmouth has adopted the latest U.S. National CAD Standard (NCS) and requires the drawings to be delivered as follows:

General Layer List			
Layer Name	Color	Linetype	Description
0	White	Continuous	
A-Anno-Titb	111	Continuous	Title block
A-Cols	110	Continuous	Columns
A-Comm	150	Continuous	Tele/Data
A-Door	150	Continuous	Door
A-Eqpm	90	Continuous	Equipment
A-Flor-Case	10	Continuous	Built-ins
A-Flor-Evtr	232	Continuous	Elevator
A-Flor-Pfix	140	Continuous	Plumbing Fixtures
A-Flor-Strs	12	Continuous	Stairs
A-Flor-Tptn	181	Continuous	Toilet Partitions
A-Furn	10	Continuous	Furniture
A-Glaz	92	Continuous	Windows
A-Grid	173	Center2	Column Grid Lines
A-Grid-Iden	171	Continuous	Column Grid Numbers
A-Roof	20	Continuous	Roof
A-Wall	50	Continuous	Wall
A-Wall-Abov	32	HIDDEN2	Wall Above
A-Wall-Blov	30	Continuous	Wall Below
A-Wall-Chas	32	Continuous	Chase
Defpoints	White	Continuous	
RA-Area	173	Continuous	Interior Area Polygon
RA-Area-Extr	White	Continuous	Exterior Area Polygon
RA-Area-Iden-Name	211	Continuous	Room Name
RA-Area-Iden-Num	131	Continuous	Room Number
RA-Area-Zone-Iden-Name	red	Continuous	Apartment or Suite Name
RA-Area-Zone-Iden-Num	red	Continuous	Apartment or Suite Number
RA-Area-Zone	red	Continuous	Apartment or Suite Area Polygon
VP	8	Continuous	View Ports
Camera	yellow	Continuous	Camera
Cat6	blue	Continuous	CAT6 Jacks
Telephone	green	Continuous	Telephone
Wireless	magenta	Continuous	Wireless
F-Prot-Eqpm	10	Continuous	Fire Protection Equipment

RA-Area-Extr is the exterior area polygon and should be poly-lined by measuring the outer face of the exterior walls, excluding major vertical penetration areas (e.g. atriums), low height spaces (under 3 Feet), unexcavated basements and other significant voids. RA-Area is the net usable area of a building. It is the interior area of a space and should be poly-lined by measuring the inner face of the walls. It is the sum of the assignable and assignable areas

- c) Other
- d) Each drawing will have to be delivered clean and purged.
- e) Do not use X-refs in drawings.
- f) Basepoints must be consistent from floor to floor in real world GIS coordinates.
- g) Use D-Text type for room numbers
- h) The Insertion Point and Text need to be within the P-line boundary.

D. Additional Requirements for BIM Record Documents:

- 1. Equipment Plans Shall Include:

- a. Manufacturer Name
 - b. Model Number
 - c. Serial Number
 - d. Room Number Where Located
- 2. Electrical Plans Shall Include:
 - a. Manufacturer Name
 - b. Model Number
 - c. Serial Number
 - d. Setpoints
 - e. Cable data suitable for upload to SKM PowerTools for purposes of Arc Flash study
- E. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
 - 1. Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification as follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect [and Construction Manager].
 - e. Name of Contractor.

1.2 RECORD SPECIFICATIONS

- A. Preparation: Submit record specifications, including addenda and contract modifications, in PDF format.
 - 2. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 3. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 - 4. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 - 5. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.
 - 6. Note related Change Orders, record Product Data, and record Drawings where applicable.
- B. Format: Submit record specifications as an annotated PDF file.

1.3 RECORD PRODUCT DATA

- A. Preparation: Submit record product data in PDF format.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 - 3. Note related Change Orders, record Specifications, and record Drawings where applicable.

4. Where Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.
 - B. Format: Submit record product data as an annotated PDF file. Include product data directory organized by specification section number and title, electronically linked to each item of record product data.
- 1.4 CONSTRUCTION PROJECT MANAGEMENT SOFTWARE (CPMS) ARCHIVE
- A. As part of the closeout process, provide two (2) “locked” digital archives of the documents stored within the CPMS on USB flash drives. One (1) flash drive to be provided to the Architect and one (1) flash drive to be provided to the Dartmouth PM.

END OF SECTION 01 78 39