



# **ENGINEERING CADD MANUAL**

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## DOCUMENT APPROVAL RECORD

### ENGINEERING CADD MANUAL

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## ACRONYMS

AB .....	As-built
AIA .....	American Institute of Architects
ANSI .....	American National Standard Institute
CADD .....	Computer Aided Design Drafting
CSI.....	Construction Specifications Institute
IFB .....	Issued for Bid
IFC .....	Issued for Construction
IFB .....	Issued for Permit
IDOT .....	Illinois Department Of Transportation
N/A .....	Not Applicable
NCS .....	National Cad Standards
(NAD 83) .....	North American Datum
NIBS.....	National Institute of Building Sciences
PM .....	Project Manager
QA/QC .....	Quality Assurance / Quality Control
RFP .....	Request for Proposal
RFI .....	Request for Information
ROCC .....	Record of Contractor Contact
RFSS .....	Request for Specific Services
TPC .....	Third party Contractors
UD.....	User Department



## **SECTION 1** **INTRODUCTION**

### **1.0 GENERAL**

1.1. This manual outlines the general drafting standards and Computer Aided Design and Drafting (CADD) requirements for Engineering, regarding the preparation of all drawings to be used in the planning, design, construction, and maintenance of Metra facilities. User Departments and Third Party Contractors (UD & TPC), as well as any other parties involved in the design, construction or oversight of Metra projects, must follow the guidelines in this manual. UD & TPC shall ensure that any sub-consultants/sub-contractors they retain for work on Metra projects know and adhere to the standards set forth in this manual. The goal is uniformity and compatibility among all drawings prepared for Metra projects.

**Metra Signal Engineering and Signal Maintenance Divisions have different CADD standards from this CADD Manual. Please contact Signal Engineering for signal related projects.**

1.2. Metra Engineering uses Bentley Microstation Version V8i. Other CADD software may be accepted with the written approval of the project manager. To avoid the problems that often occur when converting drawing files from one CADD software package to another, UD & TPC are expected to submit all drawings in their Native Microstation format. Scanning software developed by Bentley (Descartes) is used to edit scanned TIFF files. Scanned images submitted to Metra that are to be edited in the drawing must be in TIFF format.

1.3. For all project design submittals, the UD & TPC is responsible for submitting all electronic files (Microstation CADD files, PDF files, etc.), as well as the required sets (24"x36") or (11"x17") of hard copy plans to the Metra Project Manager. Refer to "Section 8 – Project Deliverables" for further details.



## **SECTION 2**

### **DRAWING FORMAT**

#### **2.0 SIZE**

2.1. Unless otherwise directed, it is desired that all issued for bid, issued for permit, and issued for construction plans shall be plotted on American National Standard Institute (ANSI) Arch. D (24'x36") size sheets. Interim review hard copy drawings shall be submitted on ANSI Size B (11"x17") sheets, unless otherwise requested in the project scope of work document. Refer to Section 8 for additional details. The following table provides other sizes that may be used by various UD & TPC. Metra may request any of the drawing sizes shown in Table 2.1, as conditions dictate.

**TABLE 2.1 – ANSI SHEET SIZES**

<b>Size</b>	<b>Dimensions (Inches)</b>
<b>A</b>	<b>8.5 x 11</b>
<b>ARCH. A</b>	<b>9 x 12</b>
<b>B</b>	<b>11 x 17</b>
<b>ARCH. B</b>	<b>12 x 18</b>
<b>C</b>	<b>17 x 22</b>
<b>ARCH. C</b>	<b>18 x 24</b>
<b>D</b>	<b>22 x 34</b>
<b>ARCH. D</b>	<b>24 x 36</b>

#### **2.2. SEED (PROTOTYPE FILES)**

To facilitate drawing creation, Metra's Engineering Division has created a Seed file (Seed 1\_1.dgn) and Ref\_Metra\_Brd.dgn as a reference file to Seed 1\_1.dgn to be used when creating a new drawing. Scale the Seed file accordingly to different sizes as needed. Metra\_Bridge.dgn should be used for developing bridge drawings using feet and inches. Metra\_Road.dgn should be used for drawings using decimals. Refer to Table 2.2 for different seed files provided by Metra. Download the Seed file at [www.metrarr.com/engineering](http://www.metrarr.com/engineering)







## SECTION 3 DRAWING NUMBERS, CADD FILE NAMING CONVENTION AND DRAWING STRUCTURE

### 3.0 GENERAL

#### 3.1. DRAWING NUMBERS

All CADD file names should start with the appropriate Metra District Code (See Appendix 2). The mile post number should follow the District Code. Contact the Metra Project Manager for appropriate mile post number. The appropriate discipline code should follow the mile post number. Refer to Appendix 1 for discipline codes. The drawing number should follow the discipline code. Drawing numbers may range from 001 to 999. The design milestone submittal should follow the drawing number (e.g., 30%, 60%, 90%, 100%, IFB, IFC, etc.).

#### 3.2. FILE NAMING CONVENTION FOR CADD FILES

CADD file names must follow the following format:

MED30.1A101\_30.dgn

<u>MED</u>	+	<u>30.1</u>	+	<u>A</u>	+	<u>101</u>	_	<u>30</u>	.	dgn
<small>METRA DISTRICT CODE</small>		<small>MILE POST NO.</small>		<small>DISCIPLINE</small>		<small>DWG. NO.</small>	<small>UNDERSCORE</small>	<small>COMPLETION PERCENTAGE</small>		<small>FILE EXTENTION</small>

MED - The first three characters represent the appropriate Metra district code. The district code can be from 2 to 6 characters (Refer to Appendix 2).

30.1 - the mile post number.

A - Architectural Discipline (Refer to Appendix 1)

101- Drawing Number.

- Underscore should follow the drawing number.

30 – Design Milestone Submittal.

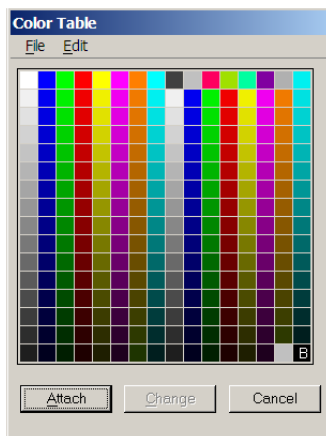
.dgn – dgn is the Microstation file extension

### 3.3. CADD FILES LEVELS

Each graphic entity contained in the project CADD files shall be placed on the appropriate level.

### 3.4. LINE COLOR

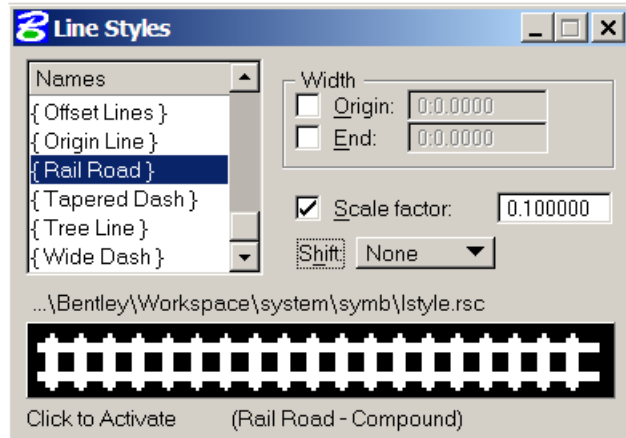
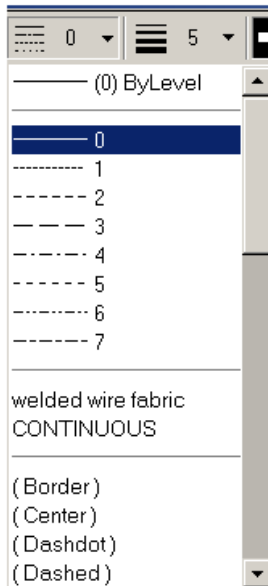
The default Microstation Color Table should be used in all drawings (shown below), except for the Color Yellow. All other colors may be used by consultants. Color 0 (Black) shall be used for the general body of the drawing.



### 3.5. LINE WORK

#### 3.5.1. Line Style

Microstation line style zero (0) shall be used for general drawing development. Line style three (3) shall be used for dashed lines. Line style four (4) shall be used for centerlines. Line style six (6) shall be used for Right-of-Way lines. Microstation custom line style "Rail Road" shall be used to show tracks.



### 3.5.2. Line Weight

Line weight 3 shall be used for the general body of the drawing. Line weight 5 shall be used for titles and sub titles. Line weight 3 shall be used for dimension lines and the existing contents of the drawing. Line weight 5 shall be used for the proposed contents of the drawing.

### 3.6. TEXT

Metra Engineering uses Arial font as standard text for all drawings. Arial Black shall be used for any bold characters. All text sizes provided refer to the standard “Arch D” (24”x36”) size sheet. Text size 3/32” (0.0938) should be used for all general notations. Text size 1/8” (0.1250) should be used for notes and titles. Text size 3/16” (0.1875) should be used for sheet numbers. Refer to Figure 3.1 later in this document, for proper text orientation. All text should have a minimum size of 3/32” when plotted at full scale for readability.



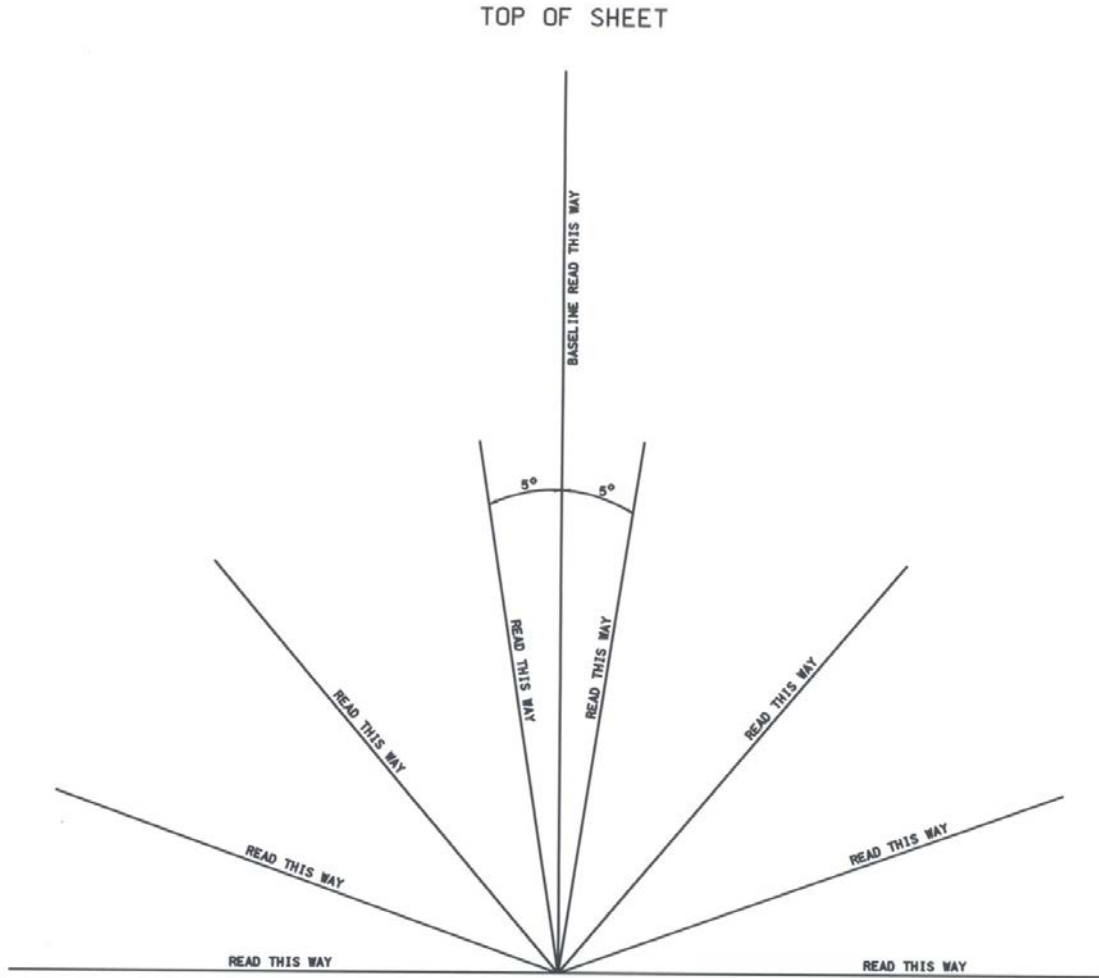
Text should be scaled accordingly to fit the sheets when plotted at full scale. Refer to Table 3.1 below for proper scale factors.

**TABLE 3.1 - SELECTED SCALES, SCALE FACTORS AND TEXT SIZES**

Desired size of Text on full size plots		0.0938 (3/32")	0.1250 (1/8")	0.1875 (3/16")
Scale of view	Scale factor to apply	Text size in the full scale Drawing	Text size in the full scale Drawing	Text size in the full scale Drawing
1"=10'	120	0:11.250	1:3.000	1:10.5
1"=20'	240	1:10.00	2:6.000	3:9.000
1"=30'	360	2:9.75	3:9.000	5:7.500
1"=40'	480	3:9.000	5:0.000	7:6.000
1"=50'	600	4:8.25	6:3.000	9:4.500
1"=60'	720	5:7.500	7:6.000	11:3.000
1"=100'	1200	9:4.500	12:6.000	18:9.000
1"=200'	2400	18:9.000	25:0.000	37:6.000
1"=400'	4800	37:6.000	50:0.000	75:0.000
1/16"=1'	192	1:6.000	2:0.000	3:0.000
3/32"=1'	128	1:0.000	1:4	1:10.50
1/8"=1'	96	0:9.000	1:0.000	1:6.000
3/16"=1'	64	0:6.000	0:8.000	1:0.000
1/4"=1'	48	0:4.5000	0:6.000	0:9.000
3/8"=1'	32	0:3.000	0:4.000	0:6.000
1/2"=1'	24	0:2.250	0:3.000	0:4.500
3/4"=1'	16	0:1.500	0:2.000	0:3.000
1"=1'	12	0:1.125	0:1.5000	0:2.250
1 1/2"=1'	8	0:0.750	0:1.000	0:1.500
3"=1'	4	0:0.375	0:0.500	0:0.750

For any other standards related to drawing presentation that may not be covered by this manual, the TPC should reference and follow IDOT's detailed CADD Standard.

FIGURE 3.1 – TEXT ORIENTATION



## **SECTION 4** **DRAWING BORDER, TITLE AND TITLE SHEET**

### **4.0 GENERAL**

#### **4.1. DRAWING BORDER**

Standard Arch D size (24" x 36") sheets shall be used for all drawings created as part of an Engineering design project. Seed files provided shall be used to create all of the design drawings. All seed files are developed in accordance with this section. They are described below and can be downloaded from Metra's website.

#### **4.2. DRAWING TITLE BOX AND PROJECT LOCATION DESCRIPTION**

The style, size, and placement of the title box text shall be in accordance with Figures 4.1, 4.2, and 4.3 later in this document. Unless otherwise specified by Metra, the contents of the title box shall be as specified herein. The drawing title shall include up to five lines. The first line (Location Name) contains the facility or location name in bold letters as shown in Figure 4.1.

The second line (Title) contains the sheet title information (bold font), up to a maximum of four lines, as shown in Figure 4.1.

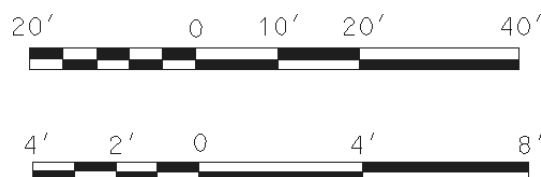
#### **4.3. CADD FILE NAMING BOX**

See Section 3 for Metra CADD drawing numbers and file naming convention.

#### **4.4. DRAWING SCALE BOX**

If a single scale is used in the drawing, it shall be shown in the drawing scale box (e.g., 1"=100', 1/4"=1', etc.). If more than one scale is used on a sheet, or if some of the information shown is not drawn to scale, the drawing scale box entry shall be shown "AS NOTED". If a drawing is not to any particular scale, the entry shall be shown as not to scale ("NTS").

In addition to the drawing scale provided in the scale box, a graphic scale shall be shown as appropriate (see below). The preferred graphic scale should be located just below the drawing /detail title, or in the lower right-hand corner above the Title Block. See Figure 4.1 for exact location.





#### **4.5. MILEPOST BOX**

A specific milepost shall be entered here. The milepost shall refer to the location of a commuter station, grade crossing, crossover, control point, or other key feature in the drawing, as appropriate. The mile post location should be obtained from the Metra Project Manager, or found in the appropriate track chart.

#### **4.6. PROJECT NUMBER BOX**

The Construction project number (PE number), if known during design, will be provided by Metra and entered here. Please contact Metra's Project Manager to obtain the Construction project number.

#### **4.7. DRAWING SHEET NUMBER BOX**

When a drawing set is issued, each of its sheets shall be assigned a drawing number. The sheets shall be numbered consecutively starting with the discipline code, followed by the index of drawing sheets. The index shall start at 001 for each discipline.

#### **4.8. DISTRICT CODES**

Refer to Appendix 2 for Metra District Codes.

#### **4.9. CONSULTANT BOX**

The company logo of the prime consultant responsible for the design shall be placed in this box.

#### **4.10. SUB CONSULTANT BOX**

The company logo of the sub consultant responsible for each individual sheet shall appear in this box. "N/A" should appear in the sub consultant box if no subs are involved in the drawing creation.



#### 4.11. PROFESSIONAL SEAL AND SIGNATURE BOX

Design professionals issuing the original drawing shall sign and seal the drawing. When a professional's wet seal and signature are required, the engineer or architect responsible for the design shall seal the drawing. They shall then sign and date the drawing and indicate their license expiration date. Figures 4.1 and 4.3 show where the sheets are to be signed and sealed. The name and seal shall be clearly legible. An electronic seal with a wet signature is also acceptable.

For modifications to an already sealed drawing, the Signature and Seal shall be provided again.

#### 4.12. DESIGNED, DRAWN, CHECKED, METRA P.M. AND DATE BOX

Except date box, all boxes shall contain the first initial and last name of the Individuals described below:

**Designed** – The name of the person who did the majority of the design work.

**Drawn** – The name of the person who did the majority of the drafting.

**Checked** – The name of the person who is responsible for checking the plan.

**Metra Project Manager** – The name of Metra's Project Manager.

**Date** – Enter the date that the drawing was last revised.

#### 4.13. REVISION BLOCKS

Revision information shall be entered in the lower left corner of the Metra border. Refer to Tables 4.1, 4.2 and 4.3 for information.

##### **REV (Revision) Column**

Drawing revision levels shall be entered in this column. Refer to Tables 4.1, 4.2, and 4.3 for details.

##### **DATE Column**

The date on which a given revision of a drawing set is submitted shall be entered into this column, in accordance with the ISO format explained above.





**BY, APP (Approved) columns**

The initials of the designer who made the revision shall be entered into the “BY” column. The initials of the person who has the authority to approve the revision, shall be entered into the “APP” column.

**4.14. DATE STAMP**

All hard copy submittals shall have a plot date of creation. See figure 4.1 for the stamp configuration and placement. Stamping plots in this way prevents any confusion as to which plans are the most current and allows the source file to be found easily.

**4.15. COVER AND INDEX SHEET**

Each drawing set will have a Cover and an Index Sheet. For Metra Stations and Parking division use cover sheet shown in Figure 4.3. Other than Station and Parking division use cover sheet shown in Figure 4.2. Index sheet using the standard border remains the same for all Engineering divisions. The Cover Sheet shall show the Metra system map, project location, Metra logo, project title, subtitles, and Metra Construction Project Number (PE number), as shown in Figures 4.2 and 4.3. Certifications and Seals should be shown in cover sheet used by Station and Parking division.

**4.16. REVISION BUBBLE**

Any revisions done to the drawings submitted for review outside of the established submittal milestones, shall be bubbled with the corresponding revision number. With a new issuance of documents (Issued for Bid and Issued for Construction), revision blocks shall be cleared with the initial issuance of IFB and IFC drawings.

**TABLE 4.1 - REVISIONS DURING DESIGN**

4	06-10-2012	CM	CP	100% SUBMITTAL
3	05-10-2012	CM	CP	90% SUBMITTAL
2	04-10-2012	CM	CP	60% SUBMITTAL
1	02-10-2012	CM	CP	30% SUBMITTAL
REV	DATE	BY	APP	DESCRIPTION



**TABLE 4.2 - REVISIONS DURING BIDDING**

REV	DATE	BY	APP	DESCRIPTION
A2	11-10-2012	CM	CP	ADDENDUM NO. 2
A1	10-30-2012	CM	CP	ADDENDUM NO. 1
A	10-10-2012	CM	CP	ISSUED FOR BIDS

**TABLE 4.3 - REVISIONS DURING CONSTRUCTION**

REV	DATE	BY	APP	DESCRIPTION
B2	03-10-2012	CM	CP	BULLETIN FOR ROCC #3
B1	02-10-2012	CM	CP	BULLETIN FOR RFI #2
B	01-10-2012	CM	CP	ISSUED FOR CONSTRUCTION

In addition, all revisions issued shall be consistent with Section 3.0 (Design Control) of Metra's current Quality Management Plan.



## **SECTION 5**

### **DRAFTING REQUIREMENTS**

#### **5.0 GENERAL**

##### **5.1. GENERAL REQUIREMENTS**

Drafting rules, Microstation files, and all other information Metra supplies to implement the following standards shall be used without modification. Drawings shall be revised electronically. Diagrams, contract modifications, requests for information, etc., attached to plotted sheets will not be accepted. Each project CADD file and its associated plots shall include all changes and reflect the design configuration, as the project progresses. All revisions to project CADD files shall be made in the approved version of Microstation. Revised sheets must match the size of the original drawing.

##### **5.2. DRAWING ORIENTATION**

###### **5.2.1. General**

All plans in a project depicting the same work area shall have the same scale, orientation, and match lines. Drawings shall be oriented with baseline stationing progressing from left to right across the sheet. Where possible, all drawings shall be oriented with north in the up direction.

###### **5.2.2. North Arrows**

A north arrow shall appear in all plan views.

###### **5.2.3. Details**

All objects depicted as details shall be oriented as they are shown in the plans and/or elevations from which they originate.

###### **5.2.4. Cross Sections**

Cross sections of track or roadway alignments shall be shown such that they are viewed as though looking ahead along the alignment, in the direction of increasing stationing. When more than one cross section is shown on a sheet, the cross section shall be arranged so that the section stations increase from left to right, and from top to bottom.



## **5.3. SCALE, UNITS OF MEASURE, DIMENSIONING**

### **5.3.1. Scale**

The basic scale used in each drawing shall be noted in the border scale box. The preferred graphic scale location box is just below the title or in the lower right corner, above the title block. A scale bar shall appear on the plan sheet as noted in Section 4.4.

### **5.3.2. Units of Measure**

Unless directed otherwise by Metra, United States Customary Units shall be used in the drawings. Distances, dimensions and elevations shall be expressed in feet and inches. Angles and bearings shall be expressed in degrees, minutes and seconds.

### **5.3.3. Dimensioning System**

Designers shall employ a dimensioning system as follows:

- Civil and utility plans shall use decimal feet.
- Sections, details, etc., within civil and utility drawings may be dimensioned in decimal feet and/or feet and inches.
- Structural, architectural, mechanical, track work, and electrical drawings and their associated sections and details, shall be dimensioned using feet and inches.

### **5.3.4. Dimension style**

Dimension arrows and dimension ticks shall be 3/16" (0.1875) in length and will be adjusted according to the scale of the drawing. Dimension text shall plot 3/32" (0.09375). Arrow heads should be closed and filled.



## **SECTION 6** **CELL LIBRARIES, LEVEL ASSIGNMENT AND STANDARD DETAILS.**

### **6.0 GENERAL**

Contact your Metra Project Manager for the availability of standard level assignments, details and cell libraries.



## **SECTION 7**

### **DRAWING DEVELOPMENT AND REVISIONS**

#### **7.0**

##### **7.1. GENERAL**

This section outlines the process by which drawings for Metra projects are developed. Metra furnished Seed files should be used for developing all project drawings.

Designers create, develop, and revise drawings during several project phases as discussed below. During these phases, project drawings are periodically submitted at milestones for review.

##### **7.2. DRAWING DEVELOPMENT MILESTONES**

###### **7.2.1. Design phase**

Work during this phase results in final design drawings, which indicate the goals of a project and the work that is to be done. As a design is developed, it usually goes through several revisions. When a design milestone is reached, drawings are submitted to Metra for review and comment. These submittals are known as review submittals (30%, 60% etc.).

###### **7.2.2. Issued for Bid (IFB) Phase**

During the Issued for Bid phase, approved design drawings go out to contractors so that they can bid on the construction work. During the bid period, additional design work is sometimes needed. The resulting revisions during this phase are called Addenda.

###### **7.2.3. Issued For Construction (IFC) Phase**

During this phase, Metra awards contracts to successful bidders. Contract document packages include drawings approved for use in construction. These drawings incorporate the revisions (addenda) made during the IFB phase. Design changes made to drawings during construction are labeled in the revision box (e.g., Bulletin for RFI #1 , Bulletin for ROCC #5, etc.).

The certification and seal of each page is to be performed with the submittal of IFC drawings.



#### **7.2.4. Record Drawings Phase (As-Built)**

When the construction of a project is complete, the contractor shall prepare a Final Project Record (As-Built) set for the project. This is the set of construction drawings marked up in the field to show where and how the project as constructed, deviates from the project as originally designed. At a minimum, the contractor transfers all changes to a new clean and reproducible set in CADD or PDF format, per the contract construction documents.



## SECTION 8

### PROJECT DELIVERABLES

#### 8.0

##### 8.1. GENERAL

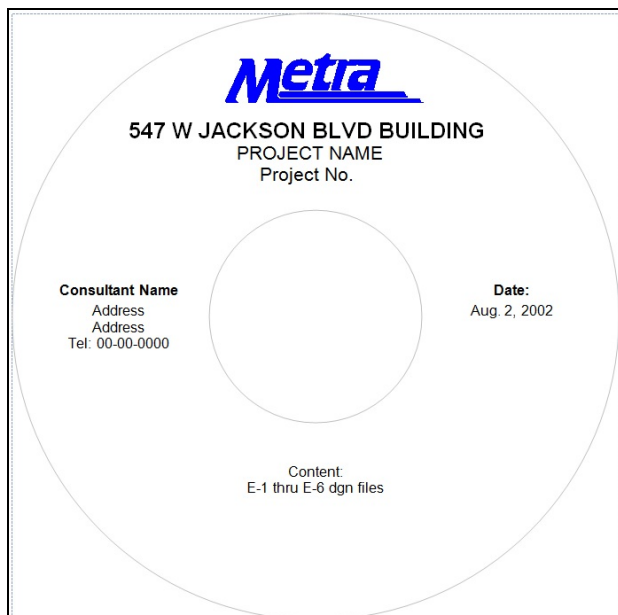
Project Deliverables are identified in the request for project specific services, the applicable quality management plan and other contractual documents. As drawings for a project are developed, designers shall periodically submit drawing set(s) for 30%, 60%, 90% and 100% design stages of completion for review and comment. All contract drawing submittals to Metra shall consist of both hardcopy and electronic formats, which shall conform to the requirements of this section. Drawings submitted for permit and subsequent submittals shall bear design professional signatures and seals.

The project scope of services, the applicable quality management plan, and other contractual documents provide a complete list of required deliverables for each phase of the project.

##### 8.2. ELECTRONIC SUBMITTALS

Electronic submittals shall be made via CDs or DVDs. All submitted CADD files (drawing and reference files) and their subsidiary files shall be placed on the disc(s) in one directory.

In addition to the project CADD files, a PDF set of all drawings shall be included for all 30%, 60%, 90% and 100% design stages of completion. Drawings in PDF format shall be printed in monochrome. Discs shall be labeled using standard printed CD/DVD labels, as shown below.







### 8.3. HARD COPY SUBMITTALS

Hard copy submittal sets shall include a Cover Sheet and be stapled, or hole punched and bound, depending on the thickness of the set. Plotted drawings shall be in monochrome. The quantity of final submittals will be determined by the Metra Project Manager and the project scope of work. The size of all final drawings shall be Arch. D (24"x36") size, unless otherwise indicated in the contractual documents.



**APPENDIX 1**  
**DISCIPLINE DESIGNATIONS CODES**

<b>NO.</b>	<b>DISCIPLINE</b>
1.	G - General
2.	C – Civil
3.	L – Landscape
4.	A – Architectural
5.	S – Structural
6.	Q – Equipment
7.	M – Mechanical
8.	P – Plumbing
9.	FP – Fire protection
10.	FA – Fire alarm
11.	E – Electrical
12.	T – Communications
13.	X – Other



## APPENDIX 2 METRA DISTRICT CODES

ABBREVIATION	DESCRIPTION
BNSF-	BNSF RAILWAY
NICTD -	NORTHERN INDIANA COMMUTER TRANSPORTATION DISTRICT
HC -	HERITAGE CORRIDOR
MDW -	MILWAUKEE DISTRICT WEST
MDN -	MILWAUKEE DISTRICT NORTH
MED -	METRA ELECTRIC DISTRICT
MED-BI	METRA ELECTRIC DISTRICT, BLUE ISLAND BRANCH
MED-SC	METRA ELECTRIC DISTRICT, SOUTH CHICAGO BRANCH
NCS -	NORTH CENTRAL SERVICE
RID -	ROCK ISLAND DISTRICT
RID-BEV	ROCK ISLAND DISTRICT, BEVERLY BRANCH
SWS -	SOUTHWEST SERVICE
UPN -	UNION PACIFIC NORTH
UPNW -	UNION PACIFIC NORTHWEST
UPW -	UNION PACIFIC WEST
SYS -	SYSTEM RELATED PROJECTS



**APPENDIX 3**  
**PROJECT PERCENTAGE COMPLETION**

<b>COMPLETION STATUS</b>	<b>DESCRIPTION</b>
30%	THIRTY PERCENT
60%	SIXTY PERCENT
90%	NINETY PERCENT
100%	100 PERCENT
IFB	ISSUED FOR BID
IFC	ISSUED FOR CONSTRUCTION
IFP	ISSUED FOR PERMIT
AB	AS-BUILT DRAWINGS
	* OR ALTERNATE PERCENTAGE SUBMITTALS, PER THE CONTRACT OR RFSS.

FIGURE 4.1

ITEM	CADD MANUAL PART	DESCRIPTION
①	4.2	DRAWING TITLE BOX
②	4.3	CADD DRAWING NUMBER & FILE NAMING
③	4.4	DRAWING SCALE
④	4.8	METRA DISTRICT CLASSIFICATION
⑤	4.6	METRA PROJECT NUMBER
⑥	4.5	METRA MILE POST NUMBER
⑦	4.7	DRAWING SHEET NUMBER
⑧	4.12	DESIGNED/ APPROVED/ DRAWN/ CHECKED/ METRA PROJECT MANAGER/ DATE
⑨	4.9	BOX FOR PRIMARY DESIGN CONSULTANTS LOGO/ CONSULTANT NAME
⑩	4.11	PROFESSIONAL SEAL / SIGNATURE OF PRIME OR SUB RESPONSIBLE FOR SHEET
⑪	4.10	SUB - CONSULTANTS LOGO
⑫	4.13	REVISION INFORMATION BOXES
⑬	4.14	STAMP SHOWING THE DATE THE DRAWING WAS PLOTTED.

PRINTED ON 1-15-2015

⑬

REV	DATE	BY	APP	DESCRIPTION

⑫

⑪

⑩

SUB CONSULTANT	PRIMARY CONSULTANT SEAL / SIGNATURE

⑨

⑧

DESIGNED:
DRAWN:
CHECKED:
METRA P.N.:
DATE:

⑦

⑥

⑤

④

③

②

①

LOCATION NAME:	CAD FILE NUMBER:	SCALE:	DISTRICT:
TITLE:	PROJECT NO.:	PROJECT NO.:	SHEET NO.:
	WILE POST NO.:		

FIGURE 4.2

ENGINEERING DEPARTMENT

**FACILITY NAME**

**METRA CONTRACT NO.**

**METRA PROJECT NO.** (SOMETIMES NOT KNOWN DURING DESIGN)

SYSTEM MAP

SHOULD BE ZOOMED IN TO SHOW ADJACENT STREETS ETC.

LOCATION MAP

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CERTIFICATIONS & SEALS

INDEX OF DRAWINGS

<p>ARCHITECTURAL</p> <p>BARRELS CASE</p> <hr/> <p>MECHANICAL</p>	<p>MECHANICAL CALIFLEWING</p> <p>FIRE PROTECTION</p> <hr/> <p>ELECTRICAL</p>
--	--

SEE SECTIONS 3.1 & 3.2.

INDEX VALUE DRAWING 10' X 8 1/2"


PRIMARY CONSULTANT

SUB-CONSULTANTS

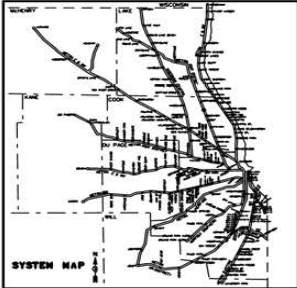
FACILITY NAME

FIGURE 4.3




**ENGINEERING DEPARTMENT**

**FACILITY NAME**  
**METRA CONTRACT NO.**  
**METRA PROJECT NO.** (SOMETIMES NOT KNOWN DURING DESIGN)



**SYSTEM MAP**

SHOULD BE ZOOMED IN TO SHOW ADJACENT STREETS ETC.



**LOCATION MAP**

CERTIFICATION & SEALING OF EACH SHEET AND COVER SHOULD OCCUR WITH ISSUED FOR CONSTRUCTION SET.

I HAVE PREPARED OR CAUSED TO BE PREPARED UNDER MY DIRECT SUPERVISION, THE ATTACHED PLANS AND SPECIFICATIONS AND STATE THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND TO THE EXTENT OF MY CONTRACTUAL OBLIGATION THESE ARE IN COMPLIANCE WITH THE ENVIRONMENTAL BARBERS ACT OF 1991 AND THE ILLINOIS ACCESSIBILITY CODE OF 1997. THE PROJECT WILL COMPLY WITH THE ILLINOIS ACCESSIBILITY CODE (IAC) SEC. 409.310 (NEW CONSTRUCTION) AND A.D.A.G.D. TITLE II-ALL PROGRAMS, SERVICE AND ACTIVITIES WILL BE MADE ACCESSIBLE.

\_\_\_\_\_  
Signature Architect/Engineer

\_\_\_\_\_  
ILSINOR REGISTRATION NO.

\_\_\_\_\_  
Date

**BUILDING CLASSIFICATION:**  
EXAMPLE: AGC/MOLLY UOC GROUP A-0

**CONSTRUCTION TYPE:**  
EXAMPLE: TYPE 5B

**BUILDING AREA:**  
EXAMPLE: 7,800 SQUARE FOOT

**OCCUPANT LOAD:**  
EXAMPLE: METRA PROJECTIONS  
 PEAK IN BOUND= 600 COMMUTERS  
 (500 PROJECTED + 20% FUTURE)  
 DAILY BOARDINGS=1,800 COMMUTERS

<small>LICENSED PROFESSIONAL ENGINEER APPLIES TO SHEETS: P03 THRU P035</small>	<small>LICENSED ARCHITECT APPLIES TO SHEETS: P001 THRU P001</small>	<small>LICENSED STRUCTURAL ENGINEER APPLIES TO SHEETS: S1 THRU S5</small>	<small>LICENSED MECHANICAL ENGINEER APPLIES TO SHEETS: P0101 THRU P002</small>	<small>LICENSED ELECTRICAL ENGINEER APPLIES TO SHEETS: PE101 THRU PE101</small>
				<small>SIGNATURE</small>

**CERTIFICATIONS & SEALS**

**INDEX OF DRAWINGS**

<small>ARCHITECTURAL</small> <hr/> <small>SAMPLE TEXT</small>	<small>HVAC/ELECTRICAL/PLUMBING/ FIRE PROTECTION</small> <hr/> <hr/> <small>SECS</small> <hr/> <small>STRUCTURAL</small> <hr/>
--	--

**SEE SECTIONS 3.0. 3.1. 3.2. 3.3 ETC.**

INDEX PAGE: DRAWING 001 OF 071

**PRIMARY CONSULTANT**

**SUB-CONSULTANTS**

FACILITY NAME:

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