

**MINETA SAN JOSE INTERNATIONAL AIRPORT
CADD DATA SUBMITTAL SPECIFICATION**

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1.0 INTRODUCTION

The following introductory sections (scope, purpose, and reference documents) will help the reader understand this technical document and its overall relationship to Mineta San José International (SJC) Airport Configuration Management (ACM) and Airport Integrated Mapping System (AIMS). This document is part of the overall SJC-ACM-AIMS-2001, *Electronic Data Submittal Specifications Document*, which contains additional introductory information such as background, acronyms, definitions, and a related documentation listing. This -2020 document was prepared by the Carter & Burgess (C&B) Consulting Team. If you have any questions, please call Lysée Moyaert of SJC at (408) 501-7712, or David Tamir or Behzad Mohammadi of C&B at (818) 784-7585.

1.1 Purpose

This technical document establishes the specification primarily for Architectural/Engineering/Construction (AEC) projects CADD submittals to SJC. This specification is necessary to ensure efficient Electronic Data Interchange (EDI) between SJC and its consultants, contractors, and local, state, and federal government agencies including city, police, FBI, state DOT, FAA, and TSA. The purpose of this document is to provide basic submittal instructions for CADD electronic deliverables produced and submitted by SJC's consultants and contractors. Developed specifically for the architectural, engineering, and construction disciplines, this specification is designed to enforce commonality amongst data required throughout the lifecycle of SJC's airport facilities. These CADD data submittals will be incorporated into SJC's AIMS repository containing spatial and attribute data. These CADD data submittals are critical to supporting the airport's infrastructure throughout its lifecycle beginning with planning, design and construction, and extending through operations and maintenance, until eventual refurbishment or demolition and remediation of the site.

1.2 Scope

This specification applies primarily to CADD files generated by AEC projects, but also to CADD files which may be generated by planning, environmental, telecommunications, and other projects. CADD files are the native electronic vector data used to plot the paper-hard-copy drawings. A raster data format is an exact electronic-soft-copy or scanned image of the original drawing sheets that have been signed by the Professional Engineer (PE). The raster format is not addressed herein. Rather, it is addressed by the electronic documentation data submittal specification SJC-ACM-AIMS-2010 and data standard -2100. This -2020 specification does not address design content requirements (i.e., fit, form, and function) for CADD drawings. **This specification only addresses the electronic interchangeability aspects of the CADD drawings.**

1.3 Reference Documents

The following documents are referenced herein:

SJC-ACM-AIMS-2001	Electronic Data Submittal Specifications
SJC-ACM-AIMS-2010	Electronic Documentation Data Submittal Specification
SJC-ACM-AIMS-2100	Electronic Documentation Data Standard
SJC-ACM-AIMS-2200	CADD Data Standard

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SJC-ACM-AIMS-2600 Metadata Standard
SJC-ACM-AIMS-3220 CADD Data Standard Compliance QC/QA Procedures

2.0 REQUIREMENTS FOR CADD DATA SUBMITTALS

This specification applies primarily to CADD files generated by AEC projects, but also to CADD files which may be generated by planning, environmental, telecommunications, and other projects. The following are requirements which apply to such CADD data submittals. These requirements address submittal milestones, file formats, data standards, metadata, media and compression, QC/QA, and conditional contract payment clause. This -2020 specification does not address design content requirements (i.e., fit, form, and function) for CADD drawings. This specification only addresses the electronic interchangeability aspects of the CADD drawings.

2.1 Submittal Milestones

Project CADD drawings shall be submitted to SJC for review in a phased manner, with submittal milestones occurring at 30%, 65%, 95% (final draft), and 100% design, and final record drawings at the conclusion of construction. Electronic CADD requirements for each delivery milestone are described below.

2.1.1 30% Design Submittal

This early submittal of electronic CADD files is necessary to verify that the electronic data is adhering to SJC’s CADD data standards at the onset; avoiding costly conversions later. The 30% submittal shall include:

- Electronic CADD files containing 30% design detail.

The 30% submittal shall be distributed to the following SJC representatives:

- Project Manager
- AIMS Manager

2.1.2 65% Design Submittal

This intermediate submittal of electronic CADD files is necessary to verify that the electronic data is continuing to adhere to SJC’s CADD data standards. The 65% submittal shall include:

- Electronic CADD files containing 65% design detail.
- All CADD reference files shall be included with this submittal.

The 65% submittal shall be distributed to the following SJC representatives:

- Project Manager
- AIMS Manager
- City of San José, City Land Surveyor

2.1.3 95% Design Submittal

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This draft submittal of the complete design electronic CADD files is necessary to verify that the electronic data adheres to SJC's CADD data standards prior to final design release. The 95% submittal shall include:

- Electronic CADD files containing 95% design detail.
- All CADD reference files shall be included with this submittal.
- CADD files shall be purged of unused entities.

The 95% submittal shall be distributed to the following SJC representatives:

- Project Manager
- AIMS Manager
- City of San José, City Land Surveyor

2.1.4 100% Design Submittal

This complete design submittal of electronic CADD files is necessary to verify that any corrections required to make the electronic data adhere to SJC's CADD data standards, have been made. The 100% submittal shall include:

- Submit electronic CADD files containing 100% design detail.
- All CADD reference files shall be included with this submittal.
- CADD files shall be purged of unused entities.
- Final design CADD files submittal shall include coordinate geometry (COGO) point files, survey points collected, and vertical & horizontal alignment databases.
- Any custom objects created by an extended CADD software package (i.e., Architectural Desktop, etc.) shall be exploded into blocks or other basic primitive shapes and/or reduced to native formats.
- A Tagged Image File Format (TIFF) image file generated by scanning each 100% design drawing sheet, shall be submitted per SJC-ACM-AIMS-2010, *Electronic Documentation Data Submittal Specification*, and SJC-ACM-AIMS-2100, *Electronic Documentation Data Standard*.
- If reference files are used, then a secondary set of electronic CADD files with reference files incorporated in each drawing file shall be submitted.

The 100% submittal shall be distributed to the following SJC representatives:

- Project Manager
- AIMS Manager
- City of San José, City Land Surveyor

2.1.5 Construction Record Drawing Submittal

This record drawing submittal of electronic CADD files is necessary to capture all details from any construction change orders, and to capture actual post-built surveyed dimensions. The Construction Record Drawing submittal shall include:

- Submit electronic CADD files containing construction change-order details.
- All CADD reference files shall be included with this submittal.
- CADD files shall be purged of unused entities.

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- Final design CADD files submittal shall include coordinate geometry (COGO) point files, survey points collected, and vertical & horizontal alignment databases.
- Any custom objects created by an extended CADD software package (i.e., Architectural Desktop, etc.) shall be exploded into blocks or other basic primitive shapes and/or reduced to native formats.
- A Tagged Image File Format (TIFF) image file generated by scanning each 100% design drawing sheet, shall be submitted per SJC-ACM-AIMS-2010, *Electronic Documentation Data Submittal Specification*, and SJC-ACM-AIMS-2100, *Electronic Documentation Data Standard*.
- Submit at least one Mylar hard copy of each drawing

The construction record drawing submittal shall be distributed to the following SJC representatives:

- Project Manager
- AIMS Manager
- City of San José, City Land Surveyor
- Santa Clara County Assessors Office

2.2 File Formats

Acceptable file formats for electronic CADD submittals to SJC include both MicroStation Version 8 (.dgn), and AutoCAD Version 2002 (.dwg). File names for all CADD files (including “sheet” and “model” files) shall adhere to the naming convention detailed in document SJC-ACM-AIMS-2200, *CADD Data Standard*.

2.3 Data Standards

Electronic CADD submittals, addressed by this specification, shall adhere to the data standards set forth in document SJC-ACM-AIMS-2200, *CADD Data Standard*.

2.4 Metadata

Electronic CADD submittals shall include a metadata file describing the submitted CADD file(s). The metadata file shall comply with the appropriate metadata standard details specified in document SJC-ACM-AIMS-2600, *Metadata Standard*. A metadata template in Microsoft Excel format is available by request. The completed metadata template shall be included on the same media along with the electronic data file itself. Each electronic CADD file submitted to SJC requires a separate corresponding metadata file.

2.5 Media and Compression

Electronic CADD submittals are to be written to a Recordable Compact Disc (CD-R). Files are to be placed on the CD-R uncompressed, and delivered in a standard jewel case. Both the CD-R and case must be labeled appropriately, listing project name, submitted data type(s), submittal date, submitting data developer organization, and point of contact information.

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2.6 Quality Control & Quality Assurance (QC/QA)

QC/QA of electronic CADD deliverables shall employ the procedures set forth in document SJC-ACM-AIMS-3220, *CADD Data Standards Compliance QC/QA Procedures*. QC/QA shall be performed by the developer of the electronic CADD files. Acceptance QA will also be performed by SJC or its authorized representative.

2.7 Conditional Contract Payment Clause

SJC shall perform QA testing throughout the submittal process. The consultant/contractor shall receive a pass/fail notification from the AIMS Manager per submittal. The purpose of multiple QA testing is to minimize the possibility of errors and costly re-work at the end of any given project. SJC’s ultimate goal is to ensure that the final deliverable conforms at the time of final submittal.

Should the consultant/contractor fail the QA testing of the 100% Submittal (final draft) deliverables, they will receive two more opportunities to correct errors. Failure to comply with SJC’s published Standards and Submittal requirements shall result in a penalty on the consultant/contractor. This penalty shall be defined by the project agreement/contract.