

DIGITAL GOVERNANCE

Appendices

February 26, 2024 Version 1.0





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SUMMARY OF REVISIONS:

While this document is intended as a reference that can be cited in agreements such as contracts and BIM Execution Plans, it is recognized that the use of Digital Governance in design and construction is evolving. To accommodate this evolution this document will be updated periodically in clearly identifiable versions. A project can adopt a specific version and then has the option to remain with that version or update if an updated version is published. Initially the target update frequency is annually, but that may change in the future. In addition, interim updates may be issued if needed.

Table 0.01 summarizes changes made to the Digital Governance Appendices from the previous approved version. Information displayed is for reference only.

TABLE 0.01: REVISION HISTORY

Revision	Date	Author	Approver	Description
1.0	26FEB24	AUS		Combined Version of DG Appendices and minor adjustments for V2.0 of standards.



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INTRODUCTION:

The following appendices contain hyperlinks or additional information referenced throughout the Austin-Bergstrom International Airport (AUS) Digital Governance standards. Appendices are categorized by Design and Construction software or platform.

APPENDIX A: BUILDING INFORMATION MODELING (BIM) AND REVIT

- 1: BIM Guide and Standards
- 2: BIM Uses
- 3: BIM Uses and Goals Worksheet
- 4: Information Exchange Worksheet
- 5: Level of Development (LOD) Specification
- 6: Process Map Templates

APPENDIX B: COMPUTER AIDED DESIGN (CAD) AND CIVIL 3D

1: City of Austin CAD Resources



APPENDIX C: GEOGRAPHIC INFORMATION SYSTEM (GIS)

1: GIS Standards

2: Attribute Table Example

Table C2.01 provides example data incorporated into the AUS GIS database. Example data represents the attributes for Utility Layer: WaterLine, Type: Line.

TABLE C2.01: ATTRIBUTE TABLE EXAMPLE

	., , , , , , , , , , , , , , , , , , ,	*** ***********************************	
Attribute	Alias	GIS	Example
OBJECT_ID	OBJECT ID	Autofilled	12
Name	Name	Text	Water System Utility
Description	Description	Text	Master CAD File
Status	Status	Text	Active
Utility_Type	Utility Type	Text	Water System
Source	Source	Text	Geolocated
Owner	Owner	Text	Austin Water Utility
File_Name	File Name	Text	AWU_CentralPressureZone_MAP
Sheet_Number	Sheet Number	Text	677E-N154
Plan_Hyperlink	Plan Hyperlink	Text	\\AUS\CAD\WaterLine.dwg
As_Built_Date	As-Built Date	Date	2015-06-21
Project_Name	Project Name	Text	Austin-Bergstrom
AUS_Project_Number	AUS Project Number	Text	TE812
CIP_Project_Number	CIP Project Number	Text	5415.119
Line_Type	Line Type	Text	Main
Pipe_Diameter	Pipe Diameter	Long	8-IN
Pipe_Material	Pipe Material	Text	Ductile Iron
Asset_ID	Asset ID	Text	Refer to Asset Management Standards
Global_ID	Global ID	Autofilled	112345
created_user	created user	Autofilled	D. Smith
created_date	created date	Autofilled	2022-08-19
last_edited_user	last edited user	Autofilled	M. Sutton
last_edited_date	last edited date	Autofilled	2023-10-02
Shape_Length	Shape Length	Autofilled	14.65
AUS_Project_Number CIP_Project_Number Line_Type Pipe_Diameter Pipe_Material Asset_ID Global_ID created_user created_date last_edited_user last_edited_date	AUS Project Number CIP Project Number Line Type Pipe Diameter Pipe Material Asset ID Global ID created user created date last edited user last edited date	Text Text Long Text Text Autofilled Autofilled Autofilled Autofilled Autofilled	TE812 5415.119 Main 8-IN Ductile Iron Refer to Asset Management Stand 112345 D. Smith 2022-08-19 M. Sutton 2023-10-02



APPENDIX D: MULTIPLE PLATFORMS

- 1: Design Standards Manual
- 2: Asset Management Standards
- 3: Autodesk Construction Cloud Standards
- 4: Naming Codes

The Name Codes establishes the naming structure that must be met to produce deliverables and hand over digital files in a format for efficient incorporation into the AUS system.

4.01: Discipline Codes

Discipline codes specify the department responsible for the content within the file, sheet, layer, or reference on a project. Codes can consist of either one or two characters. Two-character codes can be used to provide additional information related to the overall one-character code. Tables D4.01 and D4.02 contain the one- and two-character codes approved by AUS.

TABLE D4.01: ONE CHARACTER DISCIPLINE CODES

Discipline Code	Description
Α	Architectural
В	Geotechnical
С	Civil
D	Process
Е	Electrical
F	Fire Protection
G	General
Н	Hazardous Material
I	Interiors
L	Landscape
М	Mechanical
0	Operations
Р	Plumbing
Q	Equipment
R	Resource
S	Structural
Т	Telecommunications
V	Survey/Mapping
W	Distributed Energy
Х	Other Disciplines
Z	Contractor/Shop Drawings



TABLE D4.02: TWO CHARACTER DISCIPLINE CODES

Discipline Code	Description	Content
AD	Architectural Demolition	Structural part of building or removing exterior walls and etc
AE	Architectural Elements	Sections, Details, Elevations
AP	Architectural Partition	Construction Wall
ARCP	Reflective Ceiling Panel	Reflective ceiling panel layout
ВН	Bore Hole	Bore Hole
CD	Civil Demolition	Structure removal and site clearing
CS	Civil Site	Plats, dimension control
CG	Civil Grading	Excavation, grading, drainage, erosion control
CP	Civil Paving	Roads, driveways, parking lots
CI	Civil Improvements	Pavers, flagstone, exterior tile, furnishings, retaining walls, and water features
CT	Civil Transportation	Waterways, wharves, docks, trams, railways, people movers
CU	Civil Utilities	Water, sanitary sewer, storm sewer, power, communications, fiber optic, telephone, cable television, natural gas, jet fuel and steam systems
CUPH	Civil Utilities Phase	Utilities Phasing Plan
CSG	Civil Signage	Roadways, streets, parking lots
DD	Process Demolition	Process termination and removal
DE	Process Elements	Piping, valves, system components, and equipment
DG	Process Gases	Gaseous process systems
DL	Process Liquids	Liquid process systems
DS	Process Site	Extension and connection to Civil Utilities
EG	Electrical Grounding	Grounding
ES	Electrical Site	Utility tunnels and site lighting
ED	Electrical Demolition	Protection, termination and removal
EP	Electrical Power	Electric Circuit
EL	Electrical Lighting	Light Fixtures
El	Electrical Instrumentation	Controls, relays, instrumentation and measurement devices
ET	Electrical Telecommunications	Telephone, network, voice and data cables
EY	Electrical Auxiliary Systems	Alarms, nurse call, security, CCTV, PA, music, clock and program
EQF	Food Service Electrical	Connection and fixture types, positions, load requirements



FA	Fire Detection and	Smoke alarms, heat alarms, Fire alarm notification appliance, Pull
FE	Alarm Fire Suppression	Stations Fire extinguishing systems and equipment
FD	Fire Demolition	Demolition
FD	Fire Demoillion	Demontion
		Cover sheet with or without sheet index (depends on how many sheet
GA	Cover Sheet	listings). Use GI for sheet index sheet if needed
GI	General Information	Sheet Index, general notes, symbols, codes, abbreviations, symbol legend, orientation maps, accessibility access
GC	General Contract	Phasing, schedules, contractor staging areas, fencing, haul routes, erosion control, temporary and special requirements
GR	General Resource	Photographs, soil borings
GE	General Egress	Egress Plan Only (Do not use for Life Safety Plan is different)
НА	Asbestos	Asbestos abatement, identification or containment
НС	Chemicals	Phasing, schedules, contractor staging areas, fencing, haul routes, erosion control, temporary and special requirements
HL	Lead	Lead piping or paint removal
HP	PCB	PCB containment and removal
HR	Refrigerants	Ozone depleting refrigerants
IC	Interior Casework	assembling of box-like features such as cabinets, cases, storage areas, and bookshelves
ID	Interior Demolition	Interior walls, ceilings, floors, doors, windows and etc
IE	Interior Elements	Sections, Details, Elevations
IF	Interior Furnishings	Cabinet(s), Free-Standing Cabinet(s), Furniture
IG	Interior Graphics	Murals and visuals
IN	Interior Design	Interior of an area
IM	Interior Millwork	base trim, crown molding, interior doors, door frames, window casing, chair rails and wood paneling
IS	Interior Signage	Signs & Placards-directional or a location
LD	Landscape Demolition	Demolition, relocation, and salvage information
LE	Landscape Elements	Landscape components
LG	Landscape Grading	Proposed contours and spot grades
LI	Landscape Irrigation	Mainlines, valves, controllers, pumps, etc.
LL	Landscape Lighting	Lighting
LP	Landscape Planting	Landscape Planting
LR	Landscape Relocation	Vegetation relocation information
	†	
LS	Landscape Site	All site hardscape and callouts



MS	Mechanical Site	Utility tunnels and piping between facilities
MDH	Mechanical Demolition HVAC/Ductwork	HVAC/Ductwork protection, termination and removal
MDP	Mechanical Demolition Piping	Piping protection, termination and removal
МН	Mechanical HVAC	Ductwork, air devices and equipment
MP	Mechanical Piping	Chilled and heating water, steam
MI	Mechanical Instrumentation	Instrumentation and control
MS	Mechanical Site	Mechanical site elements
PS	Plumbing Site	Extension and connections to Civil Utilities
PD	Plumbing Demolition	Protection, termination, and removal
PP	Plumbing Piping	Piping, valves and insulation
PQ	Plumbing Equipment	Pumps and tanks
PL	Plumbing Fixtures	Domestic water, sanitary and storm drainage, fixtures
PNG	Plumbing-Natural Gas	Gas Riser, Gas Lines
PQF	Food Service Plumbing	Connection and fixture types, positions, load requirements
QA	Athletic Equipment	Gymnasium, exercise, aquatic and recreational
QB	Bank Equipment	Vaults, teller units, ATMs, drive through
QC	Dry Cleaning Equipment	Washers, Dryers, Ironing and Dry Cleaning
QD	Detention Equipment	Prisons and jails
QE	Educational Equipment	Chalkboards, library
QF	Food Service Equipment	Kitchen, bar, service, storage, and processing
QH	Hospital Equipment	Medical, exam, and treatment
QL	Laboratory Equipment	Science labs, planetariums, observatories
QM	Maintenance Equipment	Housekeeping, window washing, and vehicle servicing
QN	Airport Equipment	Airport and National Airspace System Equipment
QP	Parking Lot Equipment	Gates, ticket and card access
QQ	Baggage Handling System (BHS) Equipment	Baggage Handling System conveyers, carousels, and screening.
QR	Retail Equipment	Display, vending, and cash register
QS	Site Equipment	Bicycle racks, benches, playgrounds
QT	Theatrical Equipment	Stage, movie, rigging systems
QV	Video/Photographic Equipment	Television, darkroom, and studio



QY	Security Equipment	Access control and monitoring, surveillance
RC	Resource Civil	Surveyor's information and existing civil drawings
RS	Resource Structural	Existing facility structural drawings
RA	Resource Architectural	Existing facility architectural drawings
RM	Resource Mechanical	Existing facility mechanical drawings
RE	Resource Electrical	Existing facility electrical drawings
RP	Resource Plumbing	Existing facility plumbing drawings
RFA	Resource Fire Detection and Alarm	Existing facility pull stations, smoke alarms, heat alarms and Fire alarm notification appliance
RFE	Resource Fire Suppression	Existing facility fire suppression drawings
SD	Structural Demolition	Protection and removal
SS	Structural Site	Site
SB	Structural Substructure	Foundations, piers, slabs, and retaining walls
SF	Structural Framing	Floors and roofs
SE	Structural Elements	Structural components
TA	Audio Visual	Cable, music and CCTV systems
TC	Clock and Program	Time generators and bell program systems
TI	Intercom	Intercom and public address systems
TM	Monitoring	Monitoring and alarm systems
TN	Data Networks	Data switching, transmission lines, and system controls
TY	Security	Security devices
VA	Aerial	Aerial surveyed points and features
VF	Field	Field Surveyed points and features
VI	Digital	Digitized points and features
VU	Combined Utilities	Multiple utilities



4.02: File Type Codes

File type codes represent digital files not defined under the Naming Conventions within the BIM Guide and Standards, such as sheets or references. Files defined with these type codes are from the BIM environment. Table D4.03 contains the file type codes approved by AUS.

TABLE D4.03: FILE TYPE CODES

File Type Code	Description
2	2D Drawing
3	3D Model
Α	Analysis Model
F	Federated Model
Р	Point Cloud
R	Render Model

4.03: Sheet Type Codes

Sheet type codes group project drawings by the content displayed. Utilizing sheet codes will organize a project to align all disciplines and provide a standard flow of information. Table D4.04 contains the sheet type codes approved by AUS.

TABLE D4.04: SHEET TYPE CODES

Sheet Type Code	Description
0	General (Symbols, Legends, Notes, etc.)
1	Plans (Floor, Ceiling, Site-Civil, etc.)
2	Elevations (Vertical and Horizontal views)
3	Sections (Sectional views, wall sections, etc.)
4	Large-Scale Views (plans, elevations, and sections)
5	Details
6	Schedules
7	Diagrams
8	User Defined
9	3D Representations

4.04: Major and Minor Layer Codes

Major and Minor codes are layering indicators developed for the US National CAD Standard (NCS) to provide additional information for elements within the AutoCAD or Civil3D environment.

1. Major

Major codes represent the discipline's system within a building and are indicated with four characters. Codes are required for all layers and are available under the "Layer Name Format" section within the NCS.



2. Minor

Minor codes are optional indicators that provide information specific to the major group. Two minor groups can be used to further define the elements contained on the layer. Codes are represented with four characters and are available under the "Layer Name Format" section within the NCS. All custom minor groups must be reviewed and approved with the AUS BIM department.

4.05: Reference File Type Codes

Reference file type codes are specific to AutoCAD and Civil 3D and define the content within a linked drawing. Table D4.05 contains the approved AUS reference file type codes.

TABLE D4.05: REFERENCE FILE TYPE CODES

	TABLE D4.05: REFER
Type Code	Description
AB	As-Built
AC	Area Calculations/Occupancy Plan
AD	Airport Data
AF	Airfield Plan
Al	Aerial Image/Photograph
AL	Airfield Lighting Plan
AP	Airfield Pavement Marking Plan
AS	Airspace
BL	Boring Location Plan
BM	Base Map
BS	Boundary Survey
CP	Column Plan
CS	Cover Sheet
CT	Control Plan
DG	Diagram
DP	Demolition Plan
DT	Detail
EA	Easement
EC	Exterior Communication Systems Plan
EL	Elevation
EP	Enlarged Plan
ES	Erosion & Sedimentation Control Plan
EU	Electrical Utilities Plan
EV	Environmental Concerns
FA	Fire Alarm/Detection Plan
FD	Foundation Plan
FP	Floor Plan
FR	Framing Plan
FS	Fire Suppression Plan
FT	Furniture Plan
FU	Liquid Fuel Utilities Plan
GI	General Information
GS	Grounding System Plan
GP	Grading Plan
GR	Graphics & Exhibits
HA	HVAC Plan
HP	Hydrographic Survey

Type Code LG Legend LP Landscape Plan LT Lighting Plan LU Land Use Plan MD Machine Design Plan MP Master Plan/Airport Layout Plan MS Miscellaneous Plan NB Non-Building Structures Plan NG Natural Gas Utilities Plan PB Project Boundary/Property Boundary PC Power & Communication Plan PH Phase PI Piping Plan PL Project Location Map PP Pollution Prevention Plan PR Profile PV Pavement Plan & Striping Plan PW Power Plan QP Equipment Plan RC Reflected Ceiling Plan RP Roof Plan SC Section SG Signage Placement Plan SH Schedule SI Subsurface Investigation Plan SK Staking Plan SM Survey and Mapping Plan SP Site Plan/Layout Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TX Text UP Utility Plan	SE FILE I	IPE CODES
LP Landscape Plan LT Lighting Plan LU Land Use Plan MD Machine Design Plan MP Master Plan/Airport Layout Plan MS Miscellaneous Plan NB Non-Building Structures Plan NG Natural Gas Utilities Plan PB Project Boundary/Property Boundary PC Power & Communication Plan PH Phase PI Piping Plan PL Project Location Map PP Pollution Prevention Plan PR Profile PV Pavement Plan & Striping Plan PW Power Plan QP Equipment Plan RC Reflected Ceiling Plan RP Roof Plan SC Section SG Signage Placement Plan SH Schedule SI Subsurface Investigation Plan SK Staking Plan SM Survey and Mapping Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TX Text	Type Code	Description
LT Lighting Plan LU Land Use Plan MD Machine Design Plan MP Master Plan/Airport Layout Plan MS Miscellaneous Plan NB Non-Building Structures Plan NG Natural Gas Utilities Plan PB Project Boundary/Property Boundary PC Power & Communication Plan PH Phase PI Piping Plan PL Project Location Map PP Pollution Prevention Plan PR Profile PV Pavement Plan & Striping Plan PW Power Plan QP Equipment Plan RC Reflected Ceiling Plan RP Roof Plan SC Section SG Signage Placement Plan SH Schedule SI Subsurface Investigation Plan SK Staking Plan SM Survey and Mapping Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TX Text	LG	Legend
LU Land Use Plan MD Machine Design Plan MP Master Plan/Airport Layout Plan MS Miscellaneous Plan NB Non-Building Structures Plan NG Natural Gas Utilities Plan PB Project Boundary/Property Boundary PC Power & Communication Plan PH Phase PI Piping Plan PL Project Location Map PP Pollution Prevention Plan PR Profile PV Pavement Plan & Striping Plan PW Power Plan QP Equipment Plan RC Reflected Ceiling Plan RP Roof Plan SC Section SG Signage Placement Plan SH Schedule SI Subsurface Investigation Plan SK Staking Plan SM Survey and Mapping Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TX Text	LP	Landscape Plan
MD Machine Design Plan MP Master Plan/Airport Layout Plan MS Miscellaneous Plan NB Non-Building Structures Plan NG Natural Gas Utilities Plan PB Project Boundary/Property Boundary PC Power & Communication Plan PH Phase PI Piping Plan PL Project Location Map PP Pollution Prevention Plan PR Profile PV Pavement Plan & Striping Plan PW Power Plan QP Equipment Plan RC Reflected Ceiling Plan RP Roof Plan SC Section SG Signage Placement Plan SH Schedule SI Subsurface Investigation Plan SK Staking Plan SM Survey and Mapping Plan SP Site Plan/Layout Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TX Text	LT	Lighting Plan
MP Master Plan/Airport Layout Plan MS Miscellaneous Plan NB Non-Building Structures Plan NG Natural Gas Utilities Plan PB Project Boundary/Property Boundary PC Power & Communication Plan PH Phase Pl Piping Plan PL Project Location Map PP Pollution Prevention Plan PR Profile PV Pavement Plan & Striping Plan PW Power Plan QP Equipment Plan RC Reflected Ceiling Plan RC Reflected Ceiling Plan RC Section SG Signage Placement Plan SC Section SG Signage Placement Plan SH Schedule SI Subsurface Investigation Plan SK Staking Plan SM Survey and Mapping Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TS Transportation Site Plan TX Text	LU	Land Use Plan
MS Miscellaneous Plan NB Non-Building Structures Plan NG Natural Gas Utilities Plan PB Project Boundary/Property Boundary PC Power & Communication Plan PH Phase PI Piping Plan PL Project Location Map PP Pollution Prevention Plan PR Profile PV Pavement Plan & Striping Plan PW Power Plan QP Equipment Plan RC Reflected Ceiling Plan RC Reflected Ceiling Plan SC Section SG Signage Placement Plan SH Schedule SI Subsurface Investigation Plan SK Staking Plan SK Staking Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TX Text	MD	Machine Design Plan
NB Non-Building Structures Plan NG Natural Gas Utilities Plan PB Project Boundary/Property Boundary PC Power & Communication Plan PH Phase PI Piping Plan PL Project Location Map PP Pollution Prevention Plan PR Profile PV Pavement Plan & Striping Plan PW Power Plan QP Equipment Plan RC Reflected Ceiling Plan RP Roof Plan SC Section SG Signage Placement Plan SH Schedule SI Subsurface Investigation Plan SK Staking Plan SK Staking Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TX Text	MP	Master Plan/Airport Layout Plan
NG Natural Gas Utilities Plan PB Project Boundary/Property Boundary PC Power & Communication Plan PH Phase PI Piping Plan PL Project Location Map PP Pollution Prevention Plan PR Profile PV Pavement Plan & Striping Plan PW Power Plan QP Equipment Plan RC Reflected Ceiling Plan RP Roof Plan SC Section SG Signage Placement Plan SH Schedule SI Subsurface Investigation Plan SK Staking Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TX Text	MS	Miscellaneous Plan
PB Project Boundary/Property Boundary PC Power & Communication Plan PH Phase PI Piping Plan PL Project Location Map PP Pollution Prevention Plan PR Profile PV Pavement Plan & Striping Plan PW Power Plan QP Equipment Plan RC Reflected Ceiling Plan RP Roof Plan SC Section SG Signage Placement Plan SH Schedule SI Subsurface Investigation Plan SK Staking Plan SM Survey and Mapping Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TX Text	NB	Non-Building Structures Plan
PC Power & Communication Plan PH Phase PI Piping Plan PL Project Location Map PP Pollution Prevention Plan PR Profile PV Pavement Plan & Striping Plan PW Power Plan QP Equipment Plan RC Reflected Ceiling Plan RP Roof Plan SC Section SG Signage Placement Plan SH Schedule SI Subsurface Investigation Plan SK Staking Plan SM Survey and Mapping Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TX Text	NG	Natural Gas Utilities Plan
PH Phase PI Piping Plan PL Project Location Map PP Pollution Prevention Plan PR Profile PV Pavement Plan & Striping Plan PW Power Plan QP Equipment Plan RC Reflected Ceiling Plan RP Roof Plan SC Section SG Signage Placement Plan SH Schedule SI Subsurface Investigation Plan SK Staking Plan SM Survey and Mapping Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TS Transportation Site Plan TX Text	PB	Project Boundary/Property Boundary
PI Piping Plan PL Project Location Map PP Pollution Prevention Plan PR Profile PV Pavement Plan & Striping Plan PW Power Plan QP Equipment Plan RC Reflected Ceiling Plan RP Roof Plan SC Section SG Signage Placement Plan SH Schedule SI Subsurface Investigation Plan SK Staking Plan SM Survey and Mapping Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TX Text	PC	Power & Communication Plan
PL Project Location Map PP Pollution Prevention Plan PR Profile PV Pavement Plan & Striping Plan PW Power Plan QP Equipment Plan RC Reflected Ceiling Plan RP Roof Plan SC Section SG Signage Placement Plan SH Schedule SI Subsurface Investigation Plan SK Staking Plan SM Survey and Mapping Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TX Text	PH	Phase
PP Pollution Prevention Plan PR Profile PV Pavement Plan & Striping Plan PW Power Plan QP Equipment Plan RC Reflected Ceiling Plan RP Roof Plan SC Section SG Signage Placement Plan SH Schedule SI Subsurface Investigation Plan SK Staking Plan SM Survey and Mapping Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TX Text	PI	Piping Plan
PR Profile PV Pavement Plan & Striping Plan PW Power Plan QP Equipment Plan RC Reflected Ceiling Plan RP Roof Plan SC Section SG Signage Placement Plan SH Schedule SI Subsurface Investigation Plan SK Staking Plan SM Survey and Mapping Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TX Text	PL	Project Location Map
PV Pavement Plan & Striping Plan PW Power Plan QP Equipment Plan RC Reflected Ceiling Plan RP Roof Plan SC Section SG Signage Placement Plan SH Schedule SI Subsurface Investigation Plan SK Staking Plan SM Survey and Mapping Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TX Text	PP	Pollution Prevention Plan
PW Power Plan QP Equipment Plan RC Reflected Ceiling Plan RP Roof Plan SC Section SG Signage Placement Plan SH Schedule SI Subsurface Investigation Plan SK Staking Plan SM Survey and Mapping Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TX Text	PR	Profile
QP Equipment Plan RC Reflected Ceiling Plan RP Roof Plan SC Section SG Signage Placement Plan SH Schedule SI Subsurface Investigation Plan SK Staking Plan SM Survey and Mapping Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TX Text	PV	Pavement Plan & Striping Plan
RC Reflected Ceiling Plan RP Roof Plan SC Section SG Signage Placement Plan SH Schedule SI Subsurface Investigation Plan SK Staking Plan SM Survey and Mapping Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TX Text	PW	Power Plan
RP Roof Plan SC Section SG Signage Placement Plan SH Schedule SI Subsurface Investigation Plan SK Staking Plan SM Survey and Mapping Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TX Text	QP	Equipment Plan
SC Section SG Signage Placement Plan SH Schedule SI Subsurface Investigation Plan SK Staking Plan SM Survey and Mapping Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TX Text	RC	Reflected Ceiling Plan
SG Signage Placement Plan SH Schedule SI Subsurface Investigation Plan SK Staking Plan SM Survey and Mapping Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TS Transportation Site Plan TX Text	RP	Roof Plan
SH Schedule SI Subsurface Investigation Plan SK Staking Plan SM Survey and Mapping Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TX Text	SC	Section
SI Subsurface Investigation Plan SK Staking Plan SM Survey and Mapping Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TS Transportation Site Plan TX Text	SG	Signage Placement Plan
SK Staking Plan SM Survey and Mapping Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TS Transportation Site Plan TX Text	SH	Schedule
SM Survey and Mapping Plan SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TS Transportation Site Plan TX Text	SI	Subsurface Investigation Plan
SP Site Plan/Layout Plan SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TS Transportation Site Plan TX Text	SK	Staking Plan
SS Special Systems Plan ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TS Transportation Site Plan TX Text	SM	
ST Storm Sewer Plan TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TS Transportation Site Plan TX Text	SP	Site Plan/Layout Plan
TB Title Block TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TS Transportation Site Plan TX Text	SS	Special Systems Plan
TC Traffic Control TG Topographic/DTM TP Telephone/Data Plan TS Transportation Site Plan TX Text	ST	Storm Sewer Plan
TG Topographic/DTM TP Telephone/Data Plan TS Transportation Site Plan TX Text		
TP Telephone/Data Plan TS Transportation Site Plan TX Text	TC	
TS Transportation Site Plan TX Text		
TX Text		•
		Transportation Site Plan
UP Utility Plan	TX	Text
	UP	Utility Plan



HT	HTCW Utilities Plan
IP	Irrigation Plan
IW	Industrial Wastewater Plan
JP	Joint Layout Plan
KP	Key Plan
LB	Boring Log

WP	Water Plan
WW	Wastewater Plan
XP	Existing Plan

4.06: Abbreviations and Acronyms

Table D4.06 contains the abbreviations and acronyms mentioned throughout the AUS Digital Governance documentation.

TABLE D4.06: ABBREVIATION AND ACRONYM DESCRIPTIONS

Abbreviation /Acronym	Description	Abbreviation /Acronym	Description
ACC	Autodesk Construction Cloud	LiDAR	Light Detection and Ranging
BIM	Building Information Model	NCS	National CAD Standards
BEP	BIM Execution Plan	PM	Project Manager
CAD	Computer Aided Design	RCP	ReCAP Project Files
GIS	Geographic Information Systems	RCS	ReCAP Scan Files
LOA	Level of Accuracy	RCEP	Reality Capture Execution Plan
LOD	Level of Development	SSI	Sensitive Security Information

5: Graphics Guide

The Graphics Guide establishes the appearance that must be met to produce deliverables and hand over digital files in a format for efficient incorporation into the AUS system.

5.01: General

1. Symbols

Symbols shall follow the COA CAD standards manual. AUS specific symbols are available in the Kit-of-Parts provided by the AUS Project Manager and BIM Department. AUS symbology overwrites the COA standards, where applicable.

2. Hatches

Hatches shall follow the COA CAD standards manual. Table D5.01 contains the hatches specific to AUS and overwrites the COA version, where applicable.

TABLE D5.01: AUS HATCHES

Symbol	Name	Default Layer (AutoCAD)	Description

5.02: Revit

1. Line Patterns

AUS line patterns are not defined in this version. External companies may use internal Revit standards if patterns are clearly identifiable or defined on a legend sheet.



2. Line Styles

AUS line styles are not defined in this version. External companies may use internal Revit standards if styles are clearly identifiable or defined on a legend sheet.

3. Line Weights

AUS line weights are not defined in this version. External companies may use internal Revit standards. Plan view weights must follow the graphic overrides defined for phasing.

4. Phasing

Revit phasing graphic overrides must be aligned to the settings in Table D5.02 with the phase filters in Table D5.03.

TABLE D5.02: AUS PHASING GRAPHIC OVERRIDES

Phase	Project/Surface		urface Cut		Halftone	Material
Status	Lines	Patterns	Lines	Patterns		
Existing	Solid (127-127-127) Wt-2		Solid (127-127-127) Wt-3	Foreground (Visible) (No Override) (No Override) Background (Visible) (Solid) (127-127-127)		
Demolished	Demolished (Black) Wt-2		Demolished (Black) Wt-3	Foreground (Hidden) (No Override) (No Override) Background (Visible) (No Override) (No Override)		
New				Foreground (Visible) (No Override) (No Override) Background (Visible) (No Override) (No Override)		
Temporary	Dash (000-000-127) Wt-2		Dash (000-000-127) Wt-3	Foreground (Visible) (Diagonal Up) (000-000-127) Background (Visible) (No Override) (No Override)		

TABLE D5.03: AUS PHASE FILTERS

Filter Name	New	Existing	Demolished	Temporary
Show All	By Category	Overridden	Overridden	Overridden
Show Complete	By Category	By Category	Not Displayed	Not Displayed
Show Demo + New	By Category	Not Displayed	Overridden	Overridden
Show New	By Category	Not Displayed	Not Displayed	Not Displayed
Show Previous + Demo	Not Displayed	Overridden	Overridden	Not Displayed
Show Previous + New	By Category	Overridden	Not Displayed	Not Displayed
Show Previous Phase	Not Displayed	Overridden	Not Displayed	Not Displayed
Show Demo	Not Displayed	Not Displayed	Overridden	Overridden



5.03: AutoCAD and Civil 3D

1. Layers

AUS layers shall follow the National CAD Standard (NCS) layer name format. The following changes to the NCS format are specific to AUS. Table D5.04 contains the AUS specific layers. AUS layers shall be included within the template file.

TABLE D5.04: AUS LAYERS

Lover Neme	IABLE D5.04: AUS LAYERS								
Layer Name	Color	Line type	Weight	Transparency	Plot	Description			
Baggage Handling System									
QQ-BAGS-CART	White	Continuous	0.50 mm	0	P-Dark	BHS Carts			
QQ-BAGS-CATW	White	Continuous	0.50 mm	0	P-Dark	BHS Catwalk			
QQ-BAGS-CONV	White	Continuous	0.50 mm	0	P-Dark	BHS Conveyor			
QQ-BAGS-CTRL	White	Continuous	0.50 mm	0	P-Dark	BHS Control			
QQ-BAGS-DEVC	White	Continuous	0.50 mm	0	P-Dark	BHS Device/Equipment			
QQ-BAGS-DIMS	White	Continuous	0.40 mm	0	P-Dark	BHS Dimension			
QQ-BAGS-DOOR	White	Continuous	0.50 mm	0	P-Dark	BHS Doors			
QQ-BAGS-NOTE	White	Continuous	0.40 mm	0	P-Dark	BHS General Notes			
QQ-BAGS-RWAY	White	Dash	0.50 mm	0	P-Dark	BHS Right-of-Way Stripe			
QQ-BAGS-SCDR	White	Continuous	0.50 mm	0	P-Dark	BHS Security Door			
QQ-BAGS-SCNU	White	Continuous	0.50 mm	0	P-Dark	BHS Screening Unit			
QQ-BAGS-SYMB	White	Continuous	0.40 mm	0	P-Dark	BHS Symbols			
QQ-BAGS-TEXT	White	Continuous	0.40 mm	0	P-Dark	BHS Text			
			Airport	Equipment					
QN-EQPM-ACCS	White	Dashed	0.50 mm	0	P-Dark	Equipment Access			
QN-EQPM-BELOW	White	Hidden	0.50 mm	0	P-Dark	Equipment Below Floor			
QN-EQPM-DEVC	White	Continuous	0.50 mm	0	P-Dark	Equipment/Device			
QN-EQPM-DIMS	White	Continuous	0.40 mm	0	P-Dark	Equipment Dimensions			
QN-EQPM-IDEN	White	Continuous	0.40 mm	0	P-Dark	Equipment ID			
QN-EQPM-SYMB	White	Continuous	0.40 mm	0	P-Dark	Equipment Symbol			
QN-EQPM-TEXT	White	Continuous	0.40 mm	0	P-Dark	Equipment Text			



2. Line Types

Line types represent the graphic display of a line. AUS types shall be aligned to the COA standards (Appendix B1) with the AUS specific types in Table D5.05.

TABLE D5.05: AUS LINE TYPES

Symbology	Name	Default Layer	Description

3. Line Weights

Line weights represent the graphical thickness of a line when plotted. AUS shall be aligned to the COA line weight standard in the COA CAD standards. Overall, existing elements will be 0.20mm with new set at 0.50mm. Layers preset within the COA template shall have the matching line weight assigned. New layers must follow the COA line weight standards.

4. Plot Styles

Plot styles represent the graphical settings for printing elements in both model and paper space. AUS shall use the name-based plotting (STB) developed by COA, described in COA CAD standards manual.



6: Deliverable Checklist

The Deliverable Checklist provides the requirements for submitting digital deliverables to AUS for each approved authoring software in addition to the requirements defined in the Digital Governance standards.

6.03: General The following checklist items apply to all digital files submitted to AUS. Refer to the project BIM Execution Plan (BEP), for the list of deliverables where these items are applicable.
□All sheet views have a view title with matching scale or "NTS" indicated.
□All sheet scales are aligned with the title views.
□All sheets contain a page label matching the drawing number and name.
□All sheets references contain hyperlinks.
□Remove consultant stamps.
☐All sheets with plan views have a matching hatched keyplan sector for both horizontal and vertical.
□All sheets are the approved project titleblock size.
□ Project cover sheet contains site location map indicating project location.
□All naming conventions are aligned to AUS standards.
☐ All files can open, are oriented correctly, and do not have any corrupt sheets.
☐ All files used to create deliverable drawings were submitted.
6.04: Revit The following checklist items apply to all digital files developed within Revit. Refer to the project BIM Execution Plan (BEP), for the list of deliverables where these items are applicable.
□All Revit models are to be transmitted to remove excess content. Each model shall contain the 3D
design and all 2D sheet views included in the latest submission prior to hand over.
\square All Revit model warnings have been reviewed and the majority have been resolved to maintain a
stable model.
\square Remove all links and imports not associated with submitted design.
\square Remove all design options not associated with submitted design.
6.05: AutoCAD and Civil 3D The following checklist items apply to all digital files developed within AutoCAD or Civil 3D. Refer to the project BIM Execution Plan (BEP), for the list of deliverables where these items are applicable.
□Remove all content not shown within the sheet viewport.
□Remove all content outside of the titleblock border.
\square Delete tabs that have not been submitted as an official drawing.
□All reference files must be provided with sheet drawings and saved within a subfolder labeled "Xref".



□ Delete all references not associated with the submitted design.
\square All references are set as overlay and not attached.
□No nested references are used.
□All files are Purged and Audited.
□All used Layer Filters remain withing drawing.
\square All references and sheets are set to World Coordinate System (WCS) for the User Coordinate
System (UCS).



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WORKS CITED:

United States National CAD Standard: A Consensus Standard Incorporating Industry Publications. Version 6, National Institute of Building Sciences, 2014.



CREDITS

The appendices were developed for and coordinated with the Aviation Department of the City of Austin and the AUS BIM Department. It is a tool that is provided to assist in the implementation of BIM as required per AUS standards and contracts.

Please direct any questions about this manual to the AUS BIM Department. Please do not contact any of the other contributors pertaining to this checklist.

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