

CONSULTANTS' GUIDE TO UBC PROJECT DOCUMENTS REQUIREMENTS

Subject: Provision of Construction and Record Documentation to UBC Facilities

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Pertinence: All capital, renewal, and renovation projects that result in changes to building systems, space configuration, furnishing and equipment

Audience for this guide: Project Managers and Project Coordinators, Consulting Firms and Contractors

Written by: UBC Facilities – Customer Services & Informatics | Facilities Information and Inventory Systems

The purpose of this guide is to outline the required deliverables and submission process of construction and record documents to UBC Facilities - Customer Service and Informatics, Facilities Information and Inventory Systems. Accurate information and timing of submissions ensures coordinated workflows to support effective planning of operations throughout construction, handover and ongoing facility management.

It is the Consultant's responsibility to provide drawings and documents that comply with the requirements herein. Note, that in addition to providing draft, bidding, and issued for construction (IFC) documents, the Consultant is

**All drawings and documentation must be sent to UBC Facilities Information and Inventory Systems (FIIS),
Records Section: records.section@ubc.ca**

normally required to also produce record drawings and documents at the conclusion of a project.

Part 1 CONSTRUCTION AND RECORD SUBMISSIONS

1.01 Issued for Construction Drawings (IFC)

IFC drawings have been updated to incorporate major design changes and approved room numbers before construction commences.

If building permit drawings have previously been submitted and no changes are required, the building permit drawings can be resubmitted as "issued for construction". The certified professional must submit a letter to FIIS, Records, confirming that there have been no substantial changes from the building permit set of drawings.

Note that "Issued for Construction" drawings are NOT accepted as As-Built drawings.

- .1 If IFC drawings are revised or reissued during the project (e.g., design changes, scope changes, or coordination updates), the updated drawings must be resubmitted to FIIS – Records along with a brief description of the changes so that facilities management systems can be updated accordingly.
 - .1 *One (1) PDF set and one (1) set of CAD or Revit format files for each discipline (e.g., Architectural, Structural, Mechanical, Electrical, Civil, and others as applicable) must be submitted to FIIS – Records prior to the start of construction. See also Format Requirements*

1.02 Emergency Procedure Keyplans

Emergency Procedure Keyplans provide essential life-safety information used by occupants, first responders, and Emergency Operations personnel to navigate buildings during an emergency. These drawings identify exits, areas of refuge, extinguishers, pull stations, “You Are Here” locations, and other critical safety features. They are incorporated into UBC’s Building Emergency Response Plan (BERP) binders and are posted on-site to support safe evacuation and response. To ensure consistency across campus, all projects must follow the current UBC graphic standards for orientation, symbology, and layout.

- .1 Contact FIIS-Records to obtain the most current UBC drawing template (.dwg or .dwt files) for Emergency Procedure map inserts, including approved paper sizes, icons, and graphics.
records.section@ubc.ca
- .2 Emergency Procedure Keyplans and Map Inserts must obtain all required approvals from the appropriate authorities (e.g., Vancouver Fire Rescue Services or other governing departments) prior to being submitted to FIIS – Records and **must be received before building occupancy**.
 - .1 *One (1) PDF set of Emergency Procedure Keyplans for inclusion in the Building Emergency Response Plan binder*
 - .2 *One (1) PDF set of map inserts (the on-site orientation map insert with “You Are Here” symbols and correct orientation)*
 - .3 *One (1) set of corresponding CAD files must also be submitted. See Part 2 – Format Requirements.*

1.03 Record Documents

- .1 As-built drawings, Operations & Maintenance (O&M) manuals, updates to specifications are obtained and compiled by the consultant at project substantial completion for preparation of record documents
- .2 For a complete list of O&M Manual content by discipline, please refer to the Construction Project Guide: Operations and Maintenance Manual Information
- .3 For O&M manuals, Consultants must compile all documents into **one (1) consolidated PDF for each discipline. Do not submit individual PDF files as received from the contractor**. If the content for a discipline exceeds 1,000 pages, the PDF file can be divided into multiple volumes.
- .4 O&M Manuals must be submitted to FIIS – Records within 60 days of substantial performance.

1.04 Record Drawings

- .1 Buildings

These drawings are issued for all building projects and represent the final installed configuration of what was actually built. Record drawings are prepared by the Consultant using as-built information furnished by the Contractor or other field staff. Record drawings incorporate all changes made during the construction process including any and all clarifications, addenda and change orders.

 - .1 *One (1) PDF set and one (1) set of CAD or Revit format files for each discipline (e.g., Architectural, Structural, Mechanical, Electrical, Civil, and others as applicable) must be submitted to FIIS – Records within 60 days of substantial performance.*
 - .2 *Record drawings in PDF must not be embedded within pages of the O&M Manuals. See Part 2 – Format Requirements*
 - .3 *UBC reserves the right to request a paper copy of the drawings if necessary.*

.2 Underground Utility Services

These drawings are a true record of underground utilities which represent the final installed configuration of what was actually built. A record drawing incorporates all changes made during the construction process including an as-constructed survey and any and all clarifications, addenda and change orders.

- .1 *Record drawings are verified in detail by the Professional Engineer through reviewing the actual conditions of the completed project. Verification by the reviewing engineer may require frequent or continuous presence on site.*
- .2 *Where applicable, all relevant improvement sizes, diameters, elevations, depths and material must be specified on the approved plans. The field surveyor must check them during and/or after construction. They are to be relevant to the UBC Datum and nearest official UBC monument.*
- .3 *Rim and invert elevations, and all pipe material and lengths shall clearly be marked "Record" on the Record Drawings.*
- .4 *One (1) PDF and one (1) AutoCAD format files to be submitted to FIIS – Records within 60 days of substantial performance of the civil contract. See Part 2 - Format Requirements. See also: Division 33, Section 33 00 10 Underground Utilities Services.*

Deliverables at a glance:

Document Type	Format Required	Submission Timing	Notes / Conditions
Issued for Construction (IFC) Drawings (Buildings)	<ul style="list-style-type: none"> • 1 PDF set per discipline • 1 CAD (.dwg) or Revit (.rvt) set per discipline 	Prior to start of construction	Must reflect approved room numbers and all major design updates. If reissued, updated set + change description must be resubmitted.
Compiled O&M Manual	One consolidated PDF per discipline (volumes allowed if >1,000 pages)	Within 60 days of substantial performance	Do not submit loose or individual PDFs from contractors. Submit as a compiled final package.
Record Drawings (Buildings)	<ul style="list-style-type: none"> • 1 PDF set per discipline • 1 CAD (.dwg) or Revit (.rvt) set per discipline 	Within 60 days of substantial performance	Must reflect final built conditions. Do not embed PDF floorplans within the O&M manuals.
Record Drawings (Underground Utility Services)	<ul style="list-style-type: none"> • 1 PDF set • 1 CAD (.dwg) set 	Within 60 days of substantial performance	
Emergency Procedure Keyplans	<ul style="list-style-type: none"> • 1 PDF set for Building Emergency Response Plan Binder • 1 PDF set for on-site orientation maps • 1 CAD (.dwg) set 	Prior to building occupancy	Must have all required approvals from appropriate authorities

Part 2 **FORMAT REQUIREMENTS**

All digital file submissions must include one complete and properly organized set of PDF files and one set of editable source files in AutoCAD (.DWG) or Revit (.RVT) format for each discipline (e.g., Architectural, Structural, Mechanical, Electrical, Civil, and others as applicable)

Each discipline's files must be organized in clearly labelled folders (e.g., "ARCH," "MECH," "ELEC") based on drawing sets and transmitted via secured online share site with Information about the building or facility (name, number, and address)

2.01 **AutoCAD file requirements**

- .1 Drawings must be created using the most current version of AutoCAD; versions more than three releases out of date may require resubmission. All .dwg files and CAD drawing entities submitted must be fully editable using standard AutoCAD™ functions.
- .2 All external references (Xrefs), raster images, shape files, plot styles, and other supporting files must be included.
- .3 Xrefs must be bound or attached using relative paths before submission.
- .4 Drawings must be structured to support data and attribute extraction to support space inventory and asset tracking systems. Drawing objects must carry essential metadata through the use of object data fields and block attributes
 - .1 *Room and space information: Each defined room or area must have a closed polyline boundary and unique room number label consistent with the space schedule in the PDFs.*
 - .2 *Asset and equipment identifiers: Where applicable, equipment or asset symbols must be tagged using consistent block names and attributes (e.g., equipment ID, type, location).*
 - .3 *System data: Mechanical, electrical, communications, fire protection, and life safety systems should be represented using distinct, standardized layers and blocks that identify key components.*
- .5 Layer name format must comply with AIA CAD Layer Guidelines
- .6 Drawings must be purged and audited to remove unused blocks, layers, or references.

Paper space layouts in AutoCAD must match the drawings submitted in PDF including title blocks, sheet numbering, scales, and revisions.

2.02 **Revit File Requirements (.rvt)**

- .1 The model should be detached from the central file and saved as a standalone file. All worksets must be retained and editable.
- .2 Models should be cleaned and purged of unused views, families, and links prior to submission.
- .3 Revit sheets must match the PDF set exactly in content, sheet numbering, and title blocks.
- .4 Revit models shall contain sufficient and structured data to support space inventory and asset tracking systems, as needed.
 - .1 *Space and room information (numbers, names, departments, areas)*
 - .2 *Asset and equipment data (mechanical, electrical, communications systems, etc.)*
 - .3 *Architectural and structural components*
 - .4 *Fire protection and life safety systems*

- .5 *System-level information (connections, types, flow, and circuiting, where applicable)*
- .6 *Models should use standardized parameters and naming conventions to facilitate data extraction and potential integration with FIIS systems.*
- .5 Include all linked files, such as:
 - .1 *Revit links (other disciplines)*
 - .2 *CAD or image links (DWG, JPG, PNG, TIF)*
 - .3 *Point cloud or survey files (RCP/RCS)*
- .6 Include all custom Revit families (.RFA), shared parameter files (.TXT), and template files (.RTE) if project-specific.
- .7 Include a readme or transmittal file listing:
 - .1 *Revit version used*
 - .2 *Discipline(s) covered*
 - .3 *List of linked files and their relative paths*
 - .4 *Any required add-ins or plug-ins*

2.03 **Adobe Acrobat file requirements (.pdf)**

- .1 .PDF files must be clear, complete, and legible, identical in layout to the CAD/Revit drawings.
- .2 One PDF file per discipline
- .3 To be created using the latest version of Adobe Acrobat.

2.04 **Discipline List**

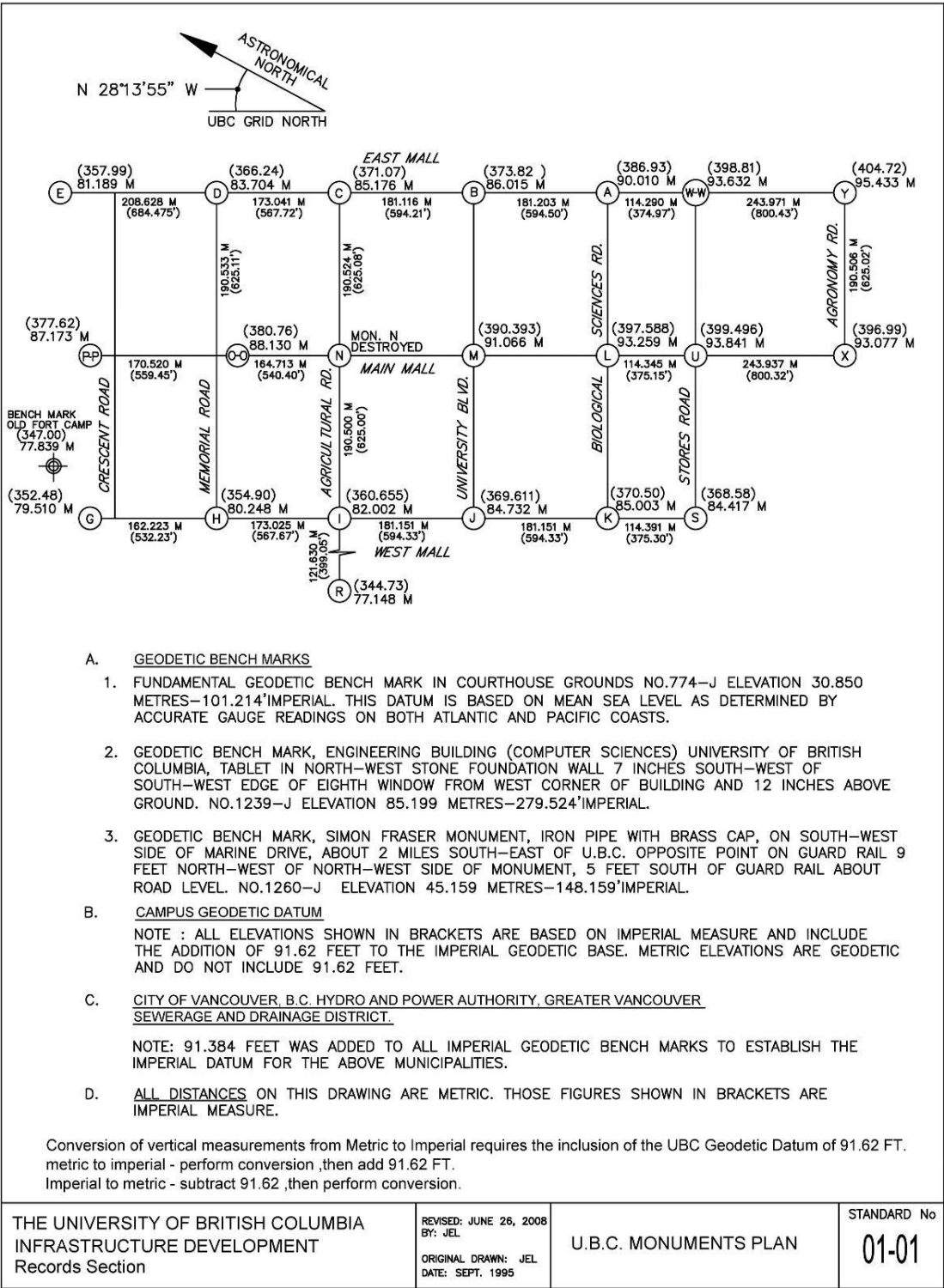
- All elevations, including spot and floor elevations, are to be relative to UBC Datum.
- .1 ARCHITECTURAL
To include site plan, floor plans, furniture layouts, sections, elevations and details.
 - .2 STRUCTURAL
To include floor plans, sections, and details.
 - .3 MECHANICAL HVAC
To include site plan, floor plans, sections, elevations, and details.
 - .4 MECHANICAL – PLUMBING
To include site plan (showing individual services connections from the mains to the building), floor plans, sections, elevations, and details.
 - .5 ELECTRICAL
To include site plan (showing service connection from the main to the building), floor plans, sections, elevations, details.
Must show the following, where applicable:
 - .1 *All conduit or duct work located below ground level and in or below a building slab.*

- .2 *All service, sub-service, and main riser conduits, all spare conduits stubbed in concealed spaces, and the location of all electrical equipment essential for safe system operation, such as end of line resistors, etc.*
- .3 *All service ducts and cables for voltages above 705 volts, and for main communications cables.*
- .4 *See also: Section 26 05 00 Electrical – General Requirements, 2.3 Project Record Drawing Requirements.*
- .6 CIVIL
To include site plan, elevations, and details.
- .7 LANDSCAPE
To include site plan (showing lawn sprinkler services with connections), sections, elevations, and details.
- .8 SURVEY
Must show construction context in relation to the existing nearest official UBC monument, both in spatial locating (horizontal dimensions), as well as vertical reference – UBC Datum based elevations. (see Section 3.0 Survey Monument Information)
To be created in UTM (Universal Transverse Mercator) and using NAD 83 Datum for compatibility with standard GIS functionality.
- .9 DEMOLITION
Drawings should clearly show the existing buildings, civil features and infrastructure in the vicinity of the project.

The drawings should include clear definition of features and underground services to be demolished as well as the ones to be retained including horizontal and vertical survey dimensions relative to the nearest official UBC monument (see Section 3.0 Survey Monument Information).

Part 3 ADDITIONAL DRAWING INFORMATION

3.01 Survey Monument Information



Campus UTM Coordinates

Here is a list of existing campus monuments and their associated UTM coordinates. This information is for reference use only. The provider of this information accepts no responsibility for its use or accuracy. The coordinates listed here are unofficial.

Table J1 Campus Monument Coordinates

Monument	UTM NAD 83 Grid Coordinates	
	Northing	Easting
J	5456833.899	481440.078
PP	5457378.937	481364.939
OO	5457228.551	481445.232
I	5456993.635	481354.793
M	5456923.590	481608.054
H	5457136.675	481278.422
K	5456674.163	481525.363
L	5456763.831	481693.353
R	5456936.381	481247.537
S	5456573.295	481579.218
U	5456663.003	481747.186
X	5456447.903	481862.030
Y	5456537.609	482030.044
G	5457289.246	481196.962
E	5457509.590	481511.150
D	5457325.612	481609.372
B	5457013.296	481776.048
W-W	5456752.701	481915.103
A	5456853.520	481861.375
C	5457173.013	481690.820

Grid coordinates were calculated using an combination factor of 0.9995923

Grid Distance (coordinate) = Ground Distance (coordinate) x 0.9995923

The Information included has been prepared by Urban Systems LTD.
IT IS FOR REFERENCE ONLY

3.03 UBC LAYERS IN USE – for reference only

The following layer list is the current layers in use within UBC floor plans and campus maps. If additional layers are needed for drafting purposes, please refer to the AIA CAD Layer guidelines. New layer names may be added using the formatting rules listed in this section.

.1 Building Floor Plans

LAYER NAME	DESCRIPTION	COLOR	LINETYPE
A-ANNO-DIMS	DIMENSIONS	WHITE	CONTINUOUS
A-ANNO-NOTE	CONSTRUCTION DATES/INFO	GREEN	CONTINUOUS
A-ANNO-REDL	BUILDING DELINEATOR LINES	RED	CENTERLINE
A-ANNO-SYMB	WASHROOM SYMBOLS	BLUE	CONTINUOUS
A-ANNO-TEXT	TITLE BLOCK TEXT / INFO./ UBC CREST / NORTH ARROWS	WHITE	CONTINUOUS
A-ANNO-TTBL	TITLE BLOCK BORDER/ LINES	RED	CONTINUOUS
A-AREA-DESC	ROOM USAGE DESCRIPTION	YELLOW	CONTINUOUS
A-AREA-IDEN	ROOM NUMBERS	GREEN	CONTINUOUS
A-AREA-PATT	AREA HATCHES	253	CONTINUOUS
A-DOOR	DOORS	YELLOW	CONTINUOUS
A-DOOR-IDEN	EXTERIOR/INTERIOR DOOR LABELS	GREEN	CONTINUOUS
A-EQPM	EQUIPMENT / ELEVATORS	BLUE	CONTINUOUS
A-FLOR-PFIX	PLUMBING FIXTURES	BLUE	CONTINUOUS
A-FLOR-STRS	STAIRS/ ESCALATORS/ TREADS/ LADDERS/ BALCONY AND GUARD RAILS/ ARROWS AND TEXT/ RAMPS/ FLOOR LEVEL CHANGES	WHITE	CONTINUOUS
A-FLOR-WDWK	MILLWORK/ ARCH WOODWORK/ BUILT IN CABINETS & COUNTERS/ TOILET PARTITIONS	BLUE	CONTINUOUS
A-FURN	FURNITURE/ WORKSTATIONS/CHAIRS ETC...	BLUE	CONTINUOUS
A-GLAZ	WINDOWS/GLAZED PARTITION/ SILLS	YELLOW	CONTINUOUS
A-PKNG	PARKING LINES AND STALL NUMBERS	WHITE	CONTINUOUS
A-ROOF	ROOF OUTLINES	WHITE	CONTINUOUS
A-WALL	ARCHITECTURAL WALLS	WHITE	CONTINUOUS
A-ROOF-PATT	ROOF HATCHING / SURFACES	WHITE	CONTINUOUS
L-SITE	EXTERIOR WALKWAYS, STAIRS, PLANTERS ETC.	BLUE	CONTINUOUS
S-GRID	ARCHITECTURAL GRID / BUBBLE	BLUE	CENTERLINE
S-WALL	STRUCTURAL WALLS/ COLUMNS	CYAN	CONTINUOUS

.2 Site Base Map

LAYER NAME	DESCRIPTION	COLOUR	LINETYPE
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C-BLDG	BUILDING - FOOTPRINTS	YELLOW	CONTINUOUS
C-BLDG FUTURE	BUILDING - FUTURE	MAGENTA	CONTINUOUS
C-BLDG-DEMO	BUILDING - DEMOLISHED	11	CONTINUOUS
C-BLDG-NUM	BUILDING - NUMBER	MAGENTA	CONTINUOUS
C-BLDG-NUM-LARGE	BUILDING - NUMBER LARGE	RED	CONTINUOUS
C-BLDG-TEXT	BUILDING - TEXT	MAGENTA	CONTINUOUS
C-BLDG-TEXT-LARGE	BUILDING - TEXT LARGE	RED	CONTINUOUS
C-BLDG-UC-LGTX	BUILDING - UNDER CONSTRUCTION TEXT	MAGENTA	CONTINUOUS
C-BLDG-UNIT-NO	BUILDING UNIT NUMBERS	GREEN	CONTINUOUS
C-PARK-TEXT-LARGE	PARK TEXT	YELLOW	CONTINUOUS
C-PROP-LOT	PROPERTY LOT LINES	WHITE	CONTINUOUS
C-PROP-LOT-EDITS		11	CONTINUOUS
C-PROP-LOT-SC	PROPERTY LOTS LINES - SOUTH CAMPUS	WHITE	CONTINUOUS
C-PROP-LOT-SC-TEXT	PROPERTY LOT TEXT - SOUTH CAMPUS	WHITE	CONTINUOUS
C-PROP-LOT-TEXT	PROPERTY LOT TEXT	WHITE	CONTINUOUS
C-ROAD	ROAD OUTLINES	GREEN	CONTINUOUS
C-ROAD-PKNG	PARKING STALLS	BLUE	CONTINUOUS
C-ROAD-TEXT	ROAD LABELS	GREEN	CONTINUOUS
C-ROAD-TEXT-LARGE	ROAD LABELS - LARGE	RED	CONTINUOUS
C-SITE-MISC	EXTRAS	MAGENTA	CONTINUOUS
C-SITE-TEXT	SITE NAME	MAGENTA	CONTINUOUS
C-SITE-TEXT-LARGE	SITE NAME - TEXT LARGE	RED	CONTINUOUS
C-SURV-MONU-LARGE	MONUMENTS -LARGE	RED	CONTINUOUS
C-SURV-MONU-SMALL	MONUMENTS	WHITE	CONTINUOUS
C-TOPO-HWATER	HIGH WATER LINE	GREEN	CONTINUOUS
C-TOPO-LWATER	LOW WATER LINE	BLUE	CONTINUOUS
C-TOPO-TEXT-LARGE	CLIFF TOP -TEXT LARGE	MAGENTA	CONTINUOUS
C-TOPO-TOSL	CLIFF TOP	MAGENTA	CONTINUOUS
C-WALK	WALKWAY OUTLINES / SLABS	RED	CONTINUOUS
DEDICATED PUBLIC ROADS	DEDICATED PUBLIC ROADS	213	ACAD_ISO10W100
Defpoints	Defpoints	53	CONTINUOUS

LEASEBORDER	LEASBORDER BOUNDARIES	44	CONTINUOUS
L-GATE-TEXT-LARGE	GATE LABELS - LARGE	YELLOW	CONTINUOUS
L-PLANT	PLANTERS	94	CONTINUOUS
L-SITE-DEMO	DEMOLISHED SITE FEATURES	11	HIDDEN
L-SITE-FENCWALL	GATES/ FENCES	MAGENTA	FENCELINE1
L-SITE-POOL	WATER FEATURES/ FOUNTAIN	BLUE	CONTINUOUS
L-SITE-SPRT	SPORTING AREAS AND FIELDS	9	CONTINUOUS
L-SITE-SPRT-DETAILS	SPORT DETAILS	30	CONTINUOUS
L-SITE-WALL	SITE WALLS	BLUE	CONTINUOUS
L-WALK-CRT	WALKWAY - COURTYARDS	BLUE	CONTINUOUS
L-WALK-PLAZA	WALKWAY - PLAZA	BLUE	CONTINUOUS
UEL BLDG	UEL LAND BOUNDARIES	YELLOW	DASH
UNA LANDS	UNA LAND BOUNDARIES	30	CONTINUOUS
VPORT	VIEWPORT	BLUE	CONTINUOUS

.3 Address Map

LAYER NAME	DESCRIPTION	COLOUR	LINETYPE
G-FUTURE-HATCH	FUTURE DEVELOPMENT	200	Continuous
G-FUTURE-TEXT	FUTURE DEVELOPMENT - TEXT	160	Continuous
G-POSTALAD	POSTAL ADDRESS	10	Continuous
G-POSTALAD-ACADIA	POSTAL ADDRESS - ACADIA	10	Continuous
G-POSTALAD-VST	POSTAL ADDRESS - VST	10	Continuous
G-POSTALAD TEXT	POSTAL ADDRESS - TEXT	10	Continuous

.4 Legal Map

LAYER NAME	DESCRIPTION	COLOUR	LINETYPE
C-LGL-DL	DISTRICT LOTS	red	CONTINUOUS
C-LGL-DL-TEXT	DISTRICT LOTS - TEXT	yellow	CONTINUOUS
C-LGL-EAS	EASEMENT	cyan	CONTINUOUS
C-LGL-EAS-TEXT	EASEMENT TEXT	cyan	CONTINUOUS
C-LGL-HOUS-AREA	HOUSING AREA	10	CONTINUOUS
C-LGL-LEASE	LEASED AREA	yellow	CONTINUOUS

C-LGL-LN	LEGAL LINE	white	CONTINUOUS
C-LGL-LN-TEXT	LEGAL LINE - TEXT	magenta	CONTINUOUS
C-LGL-LN-TEXT-L	LEGAL LINE TEXT - LARGE	magenta	CONTINUOUS
C-LGL-ROAD-EASMNT	ROAD EASEMENT	12	CONTINUOUS
C-LGL-TEMP	TEMPORARY	10	NONUBC
C-PROP-LOT	PROPERTY LOT	white	CONTINUOUS
C-PROP-LOT-TEXT	PROPERTY LOT TEXT	white	CONTINUOUS
C-SURV-IP	SURVEY IRON PIN	white	CONTINUOUS
C-SURV-MISC	SURVEY MISC	white	CONTINUOUS
C-SURV-MONU	SURVEY MONUMENTS	white	CONTINUOUS
C-SURV-MONU-L	SURVEY MONUMENT -LARGE	red	CONTINUOUS
C-SURV-PKNG-AREA	SURVEY PARKING AREA	30	CONTINUOUS
C-SURV-PKNG1-AREA		31	CONTINUOUS

*****END OF GUIDE*****