

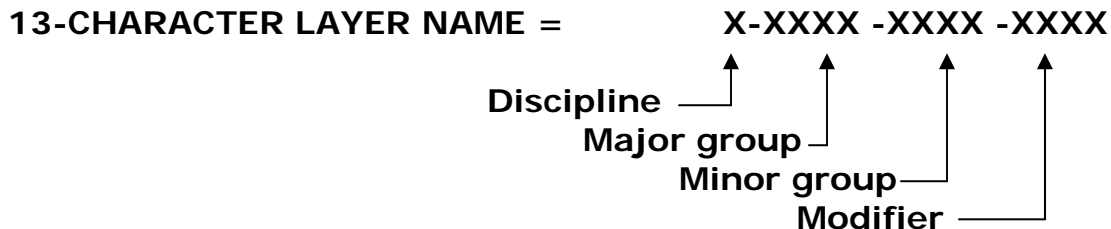
# USF Layer Guidelines

## LAYERING

All drawings shall incorporate the standard AIA long format layers as specified in the National CAD Standard Version 3.1. Blank drawings containing these layers are available on the FPC web site. In accordance with the AIA layering standard, all layering names and information within shall adhere to the following guidelines.

- Only applicable layers are to be used.
- Blank layers shall be purged from the CAD drawing before creating the final deliverable CAD files.
- Graphic representations of related items shall be located on a single layer even when indicated on different drawings. For example, full height walls could be properly drawn on the layer A-WALL or A-WALL-FULL, but not both.
- Graphic symbols connected to text and notes, (leader lines, arrowheads, etc.) shall be located on the same layer as the corresponding text.

Layer names will be limited to 13 characters subdivided into 4 sections including: Discipline, Major group, Minor group, and Modifier as shown below. Layer names of 5 or 9 characters may be used when appropriate and consistent with layer naming guidelines.



**Discipline** headings shall define the layer's discipline as follows:

- A = Architectural (Refer to Appendix
- B = Geotechnical
- C = Civil
- D = Process
- E = Electrical
- F = Fire Protection
- G = General
- H = Hazardous Materials
- I = Interiors
- L = Landscape
- M = Mechanical
- O = Operations

P = Plumbing  
Q = Equipment  
R = Resource  
S = Structural  
T = Telecommunications  
U = University  
V = Survey / Mapping  
W = Civil Works  
X = Other Disciplines  
Z = Contractor / Shop Drawings

**Major group** headings shall define assemblies, construction systems or major categories such as walls, doors, ceilings, lights, power, sewer, water, storm drains, etc. (Refer to Appendix

**Minor group** headings shall further define the major group headings such as full height wall, partial height wall, emergency lighting or general lighting. (Refer to Appendix

The optional Modifier heading shall further define the minor group heading such as full height wall existing and full height wall demolished. Modifiers and user defined characters are options provided for extended clarification. (Refer to Appendix

## **ARCHITECTURAL LAYER GUIDELINES**

### **Drawing Information Layers**

A-PARE-****	Occupancy Plan & Area Designations Information
A-PCLG-****	Ceiling Plan Information
A-PDEM-****	Demolition Plan Information
A-PEQP-****	Equipment Plan Information
A-PFLR-****	Floor Plan Information
A-PLGS-****	Large Scale Floor Plan Information
A-PROF-****	Roof Plan Information
A-DETL-****	Detail Drawings Information



## MECHANICAL LAYER GUIDELINES

### Drawing Information Layers

M-DETL-****	Detail Drawings Information
M-ELEV-****	Elevation Drawings Information
M-PCON-****	Mechanical Controls Plan Information
M-PHVA-****	HVAC Plan Information
M-PLGS-****	Large Scale HVAC Plan Information
M-PPIP-****	Piping Plan Information
M-PROF-****	Mechanical Roof Plan Information
M-PSTM-****	Steam Piping Plan Information

## **Building Information Layers (continued)**

M-REFG-PIPE	Refrigeration System Piping
M-SPCL-****	Special Systems
M-STEM-EQPM	Steam System Equipment
M-STEM-HPIP	High Pressure Steam Piping
M-STEM-LPIP	Low Pressure Steam Piping
M-STEM-MPIP	Medium Pressure Steam Piping
M-VENT-DUCT	Industrial or Laboratory Venting
M-VENT-EQPM	Industrial or Laboratory Venting Equipment

## **PLUMBING LAYER GUIDELINES**

### **Drawing Information Layers**

P-DETL-****	Detail Drawings Information
P-ELEV-****	Elevation Drawings Information
P-PPLM -****	Plumbing Plan Information
P-RISR -****	Plumbing Riser Diagram Information
P-SECT-****	Section Drawings Information
P-****-DIMS	Dimensions
P-****-KEYN	Key Notes
P-****-NOTE	Notes, Call outs, and Key Notes
P-****-SCHD	Schedules and Tables of Text
P-****-SYMB	Symbols, Bubbles, and Targets
P-****-TEXT	General Notes and Specifications

### **Building Information Layers**

P-ACID	Acid, Alkaline, and Oil Waste System
P-ACID-EQPM	Acid, Alkaline, and Oil Waste System Equipment
P-ACID-PIPE	Acid, Alkaline, and Oil Waste System Piping
P-DOMW	Domestic Hot & Cold Water System
P-DOMW-EQPM	Domestic Hot and Cold Water Equipment
P-DOMW-PIPE-****	Domestic Hot and Cold Water Piping
P-LABS-EQPM	Laboratory Gas System Equipment
P-LABS-PIPE	Laboratory Gas Piping
P-NGAS	Natural Gas System
P-NGAS-EQPM	Natural Gas System Equipment
P-NGAS-PIPE-****	Natural Gas System Piping
P-SSWR	Sanitary Sewer System
P-SSWR-EQPM	Sanitary Sewer Equipment (Manholes, Clean-outs, etc.)
P-SSWR-FTXT	Sanitary Sewer Fixtures
P-SSWR-PIPE-****	Sanitary Sewer Piping
P-SSWR-TEXT	Sanitary Sewer Text
P-SSWR-VENT	Sanitary Sewer Vent Piping
P-STRM	Storm Drainage System
P-STRM-FIXT	Storm Drainage Surface Features (Catch Basins, Manholes)

## **FIRE PROTECTION SYSTEMS LAYER GUIDELINES**

### **Drawing Information Layers**

F-DETL-****	Detail Drawings Information
F-PFPE-****	Fire Protection Equipment Plan
F-PSPR-****	Sprinkler Plan
F-RISR-****	Sprinkler Riser Program
F-SECT-****	Section Drawings Information
F-****-DIMS	Dimensions
F-****-NOTE	Notes, Call outs, and Key Notes
F-****-SCHD	Schedules and Tables of Text
F-****-SYMB	Symbols, Bubbles, and Targets
F-****-TEXT	General Notes and Specifications

## Drawing Information Layers (continued)

E-RISR-****	Electrical Riser Diagrams
E-SECT-****	Section Drawings Information
E-****-DIMS	Dimensions
E-****-NOTE	Notes, Call outs, and Key Notes
E-****-SCHD	Schedules and Tables of Text
E-****-SYMB	Symbols, Bubbles, and Targets
E-****-TEXT	General Notes and Specifications

## Building Information Layers

E-CTRL Electrical	Control Systems
E-CTRL-EQPM	Control System Equipment & Devices
E-CTRL-WIRE	Control System Wiring
E-GRND	Electrical Ground System
E-LITE	Lighting System
E-LITE-CLNG	Ceiling Mounted Lighting
E-LITE-EMER	Emergency Lighting
E-LITE-EXIT	Exit Lighting
E-LITE-FLOR	Floor Lighting
E-LITE-IDEN	Luminaire Identification and Text
E-LITE-NUMB	Lighting Circuit Numbers
E-LITE-ROOF	Roof Mounted Lighting
E-LITE-SITE	Site Lighting Fixtures
E-LITE-SWCH	Lighting Switches
E-LITE-WIRE	Wiring and Conduit
E-POWR	Electrical Power System
E-POWR-CABL	Cable Trays
E-POWR-CLNG	Ceiling Receptacles and Devices
E-POWR-EQPM	Power Equipment
E-POWR-FLOR	Floor Mounted Outlets
E-POWR-NUMB	Power Circuit Numbers
E-POWR-WALL	Wall Outlets & Receptacles
E-POWR-WIRE	Power Wiring and Conduit
E-PROT-WIRE	Fire Protection System Wiring
E-WKLP-INFO	Clearances and work space req. (NEC Codes etc.)
E-1LIN	Any major group: one-line diagrams
E-ALRM	Alarm system
E-AUXL	Auxiliary systems
E-BELL	Bell system
E-CCTV	Closed-circuit TV
E-CLOK	Clock system
E-COMM	Telephone, communication outlets
E-CTRL	Control systems
E-CTRL-DEVC	Control systems devices
E-DATA	Data outlets
E-DICT	Central dictation system
E-FIRE	Fire alarm, fire extinguishers
E-GRND-CIRC	Ground system circuits



## **Building Information Layers (continued)**

E-LEGN	Legend of symbols
E-LITE-CIRC	Lighting circuits
E-LITE-CIRC-NUMB	Lighting circuits numbers
E-LITE-EXTR	Lighting exterior and site
E-LITE-JBOX	Lighting junction box
E-LITE-OTLN	Lighting outline for background
E-LITE-SPCL	Lighting special
E-LITE-WALL	Lighting wall-mounted
E-LTNG	Lightning protection system
E-NURS	Nurse call system
E-PGNG	Paging system
E-POWR-BUSW	Power busways
E-POWR-CIRC	Power circuits
E-POWR-CIRC-NUMB	Power circuits numbers
E-POWR-DEVC	Power devices
E-POWR-FEED	Power feeders
E-POWR-JBOX	Power junction box
E-POWR-PANL	Power panels
E-POWR-ROOF	Power roof
E-POWR-SWBD	Power switchboards
E-POWR-UCPT	Power under-carpet wiring

## **Building/Site Information Layers**

C-BLDG-EXST	Footprint of Existing Buildings Use appropriate utility layers for
C-BLDG-DEMO	Footprint of Existing Building to be Demolished
C-BLDG-PROP	Footprint of Proposed Buildings
C-BLDG-EXST-HTCH	Existing Building Hatch
C-BLDG-PROP-HTCH	Proposed Building Hatch

## Project Information Layers

C-BLDG	Building Outline
C-BLDG-ELEV	Building Elevations
C-GRID	Grid Lines (FI State plane Coordinates)
C-GRID-NOTE	Grid Coordinates and Notes
C-PKNG	Parking Lots
C-PKNG-NOTE	Parking Lot Notes
C-PKNG-TEXT	Parking Lot Text
C-PROP	Property Line (Campus Boundary)
C-PROP-ESMT	Easements
C-PROP-NOTE	Property Line Notes
C-ROAD	Roads and Streets
C-ROAD-BRDG	Roadway Bridges
C-ROAD-CURB	Curb Lines
C-ROAD-NOTE	Road and Street Names
C-TOPO-DEMO	Existing Contour Lines to be Changed
C-TOPO-MACL	Major Depressed Contour Lines (Wet lands)
C-TOPO-MAJR	Major Contour Lines
C-TOPO-MAJR-TEXT	Major Contour Lines Text (Elevation)
C-TOPO-MICL	Minor Depressed Contour Lines (Wet lands)
C-TOPO-MINR	Minor Contour Lines
C-TOPO-MINR-TEXT	Minor Contour Lines Text (Elevation)
C-TOPO-SPOT	Spot Elevations (Tick Marks & Text)
L-SITE-WATR	Site Water Features, Rivers, Streams, Ponds, and Coastlines
L-SITE-WATR-NOTE	Names and Notes
L-WALK	Pedestrian Walks
L-WALK-BRDG	Pedestrian Bridges
C-AFLD	Airfields
C-AFLD-ASPH	Airfields asphalt surface

## Project Information Layers (continued)

C-BRDG-DECK	Bridge deck
C-BRDG-EXPJ	Bridge expansion joint
C-BRDG-FALT	Bridge deck fault / break line
C-BRDG-HIDD	Bridge objects or lines hidden from view
C-BRDG-OBJT	Bridge objects
C-BRDG-OBJT-PRIM	Bridge objects primary
C-BRDG-OBJT-SECD	Bridge objects secondary
C-BRDG-RBAR	Bridge reinforcing bar
C-CATV	Cable TV
C-CATV-OVHD	Cable TV overhead lines
C-CATV-POLE	Cable TV box / pole
C-CATV-UNDR	Cable TV underground lines
C-CEME	Cemetery
C-CHAN	Navigable channels
C-CHAN-BWTR	Navigable channels breakwater
C-CHAN-CNTR	Navigable channels channel centerline and survey report lines
C-CHAN-DACL	Navigable channels de-authorized channel limits, anchorages, etc.
C-CHAN-DOCK	Navigable channels decks, docks, floats, piers
C-CHAN-NAID	Navigable channels navigation aids
C-COMM	Communications
C-COMM-OVHD	Communications overhead lines
C-COMM-POLE	Communications box / pole
C-COMM-UNDR	Communications underground lines
C-CTRL	Control points

## **Project Information Layers (continued)**

C-DRIV-YELO	Driveways yellow paint
C-DRIV-YELO-TICK	Driveways yellow paint tick marks
C-DTCH	Ditches or washes
C-DTCH-BOTD	Ditches or washes bottom
C-DTCH-CNTR	Ditches or washes centerline
C-DTCH-EWAT	Ditches or washes edge of water
C-DTCH-TOPD	Ditches or washes top
C-EROS	Erosion and sediment control
C-EROS-CIPR	Erosion and sediment control culvert inlet protection
C-EROS-CNTE	Erosion and sediment control construction entrance
C-EROS-DDIV	Erosion and sediment control drainage divides
C-EROS-DVDK	Erosion and sediment control diversion dike
C-EROS-INPR	Erosion and sediment control inlet protection
C-EROS-SILT	Erosion and sediment control silt fence
C-EROS-SSLT	Erosion and sediment control super silt fence
C-ESMT	Easements
C-ESMT-ACCS	Easements access (pedestrian only; private access)
C-ESMT-CATV	Easements utility - cable television
C-ESMT-CONS	Easements conservation
C-ESMT-CSTG	Easements construction / grading
C-ESMT-ELEC	Easements utility - electrical
C-ESMT-FDPL	Easements flood plain



## **Project Information Layers (continued)**

C-PROP-SBCK	Property setback lines
C-PVMT	Pavement
C-PVMT-ASPH	Pavement asphalt surface
C-PVMT-CONC	Pavement concrete surface
C-PVMT-GRVL	Pavement gravel surface
C-RAIL	Railroad
C-RAIL-CNTR	Railroad centerline
C-RAIL-EQPM	Railroad equipment (gates, signals, etc.)
C-RAIL-TRAK	Railroad track
C-RIVR	River
C-RIVR-BOTM	River bottom
C-RIVR-CNTR	River centerline
C-RIVR-EDGE	River edge
C-RIVR-TOPB	River top of bank
C-ROAD-ASPH	Roadways asphalt surface
C-ROAD-CONC	Roadways concrete surface
C-ROAD-CURB-BACK	Roadways curb back
C-ROAD-CURB-FACE	Roadways curb face
C-ROAD-FLNE	Roadways fire lane
C-ROAD-FLNE-MRKG	Roadways fire lane pavement markings
C-ROAD-FLNE-SIGN	Roadways fire lane signs





## **LANDSCAPE LAYER GUIDELINES**

### **Drawing Information Layers**

L-DETL-****	Detail Drawings Information
L-PIRR-****	Landscape Irrigation Plan Information
L-PPLA-****	Landscape Planting Plan Information
L-PSTR-****	Structural Plan Information
L-SECT-****	Section Drawings Information
L-****-DIMS	Dimensions
L-****-NOTE	Notes, Call outs, and Key Notes
L-****-SCHD	Schedules and Tables of Text
L-****-SYMB	Symbols, Bubbles, and Targets
L-****-TEXT	General Notes and Specifications

### **Project Information Layers**

L-IRRG-COVR	Irrigation Coverage
L-IRRG-CTRL	Irrigation Controller
L-IRRG-EQPM	Irrigation Equipment
L-IRRG-HEAD	Irrigation Heads
L-IRRG-LTRL	Irrigation Lateral Line Piping
L-IRRG-MAIN	Pressurized Main Irrigation Lines
L-IRRG-VALV	Irrigation Valves
L-IRRIG-BKFL	Irrigation Backflow Devices
L-IRRIG-PUMP	Irrigation Booster Pumps
L-PLNT-BEDS	Landscape Planting Beds
L-PLNT-DEMO	Existing Plants to be Demolished