

## Plumbing

Long Format Layer Name	Short Format Layer Name	Layer Description
<b>Building Information Layers</b>		
P-ACID	PAC	Acid, Alkaline, and Oil Waste Systems
P-ACID-PIPE	PACPI	Acid, Alkaline, and Oil Waste Piping
P-DOMW	PDO	Domestic Hot and Cold Water Systems
P-DOMW-EQPM	PDOEQ	Domestic Hot and Cold Water Equipment
P-DOMW-PIPE	PDOPI	Domestic Hot and Cold Water Piping
P-DOMW-RISR	PDORI	Domestic Hot and Cold Water Risers
<b>Sanitary Drainage</b>		
P-SANR	PSA	Sanitary Piping
P-SANR-PIPE	PSAPI	Sanitary Piping
P-SANR-FIXT	PSAFI	Plumbing Fixtures
P-SANR-FLDR	PSAFL	Floor Drains
P-SANR-RISR	PSARI	Sanitary Risers
<b>Storm Drainage System</b>		
P-STRM	PST	Storm Drain Piping
P-STRM-PIPE	PSTPI	Storm Drain Piping
P-STRM-RISR	PSTRI	Storm Drain Risers
P-STRM-RFDR	PSTRF	Roof Drains
<b>Plumbing Miscellaneous Equipment</b>		
P-EQPM	PEQ	Plumbing Miscellaneous Equipment
<b>Plumbing Fixtures</b>		
P-FIXT	PFI	Plumbing Fixtures
<b>Elevations</b>		
P-ELEV	PEL	Building Outlines
P-ELEV-OTLN	PELOT	Building Outlines
P-ELEV-PATT	PELPA	Textures and Hatch Patterns
P-ELEV-IDEN	PELID	Identification Numbers
<b>Sections</b>		
P-SECT	PSE	Material Cut by Section
P-SECT-MCUT	PSEMC	Material Cut by Section
P-SECT-MBND	PSEMB	Material beyond Section Cut

## Plumbing (continued)

Long Format Layer Name	Short Format Layer Name	Layer Description
P-SECT-PATT	PSEPA	Textures and Hatch Patterns
P-SECT-IDEN	PSEID	Identification Numbers
<b>Details</b>		
P-DETL	PDE	Material Cut by Section
P-DETL-MCUT	PDEMC	Material beyond Section Cut
P-DETL-MBND	PDEMB	Material beyond Section Cut
P-DETL-PATT	PDEPA	Textures and Hatch Patterns
P-DETL-IDEN	PDEID	Identification Numbers
<b>Drawing Information Layers</b>		
P-SHBD	PSH	Sheet Border and Title Block Line Work
P-SHBD-TTLB	PSHTT	Project Title Block and Project Name
P-SHBD-LOGO	PSHLO	Project or Office Logo
P-PPLM	PPP	Plumbing Plan
P-PDRA	PPD	Storm Drainage
P-PSAN	PPS	Sanitary Drainage Plan
P-P***	P**	Other Plumbing Plans
P-RISR	PRI	Plumbing Riser Diagram
P-ELEV	PEL	Elevations
P-SECT	PSE	Sections
P-DETL	PDE	Details
P-SCHD	PSC	Schedules and Title Block Sheets
P-****-NOTE	P**NO	Notes, Call-outs, and Key Notes
P-****-TEXT	P**TE	General Notes and Specifications
P-****-SYMB	P**SY	Symbols, Bubbles, and Targets
P-****-DIMS	P**DI	Dimensions
P-****-PATT	P**PA	Cross-hatching and Poche
P-****-TTLB	P**TT	Sheet Name and Number
P-****-NPLT	P**NP	Nonplot Information and Construction Lines
P-****-PLOT	P**PL	Plotting Targets and Windows

## Mechanical

Long Format Layer Name	Short Format Layer Name	Layer Description
<b>Building Information Layers</b>		
<b>M-BRIN</b>	<b>MBR</b>	<b>Brine Systems</b>
M-BRIN-EQPM	MBREQ	Brine System Equipment
M-BRIN-PIPE	MBRPI	Brine System Piping
<b>M-CHIM</b>	<b>MCH</b>	<b>Prefabricated Chimneys</b>
M-CMPA	MCM	Compressed Air Systems
M-CMPA-CEQP	MCMCE	Compressed Air Equipment
M-CMPA-CPIP	MCMCP	Compressed Air Piping
M-CMPA-PEQP	MCMPE	Process Air Equipment
M-CMPA-PIIP	MCMPP	Process Air Piping
<b>M-CONT</b>	<b>MCO</b>	<b>Controls and Instrumentation</b>
M-CONT-THER	MCOTH	Thermostats
M-CONT-WIRE	MCOWI	Low Voltage Wiring
<b>M-DUST</b>	<b>MDU</b>	<b>Dust and Fume Collection System</b>
M-DUST-EQPM	MDUEQ	Dust and Fume Collection Equipment
M-DUST-DUCT	MDUDU	Dust and Fume Ductwork
<b>M-ELHT-EQPM</b>	<b>MELEQ</b>	<b>Electric Heat Equipment</b>
<b>M-ENER</b>	<b>MEN</b>	<b>Energy Management System</b>
M-ENER-EQPM	MENEQ	Energy Management Equipment
M-ENER-WIRE	MENWI	Energy Management Wiring

## Mechanical (continued)

Long Format Layer Name	Short Format Layer Name	Layer Description
<b>M-EXHS</b>	<b>MEX</b>	<b>Exhaust System</b>
M-EXHS-EQPM	MEXEQ	Exhaust System Equipment
M-EXHS-DUCT	MEXDU	Exhaust System Ductwork
M-EXHS-RFEQ	MEXRF	Rooftop Exhaust Equipment
<b>M-FUEL</b>	<b>MFU</b>	<b>Fuel System Piping</b>
M-FUEL-GPRP	MFUGP	Fuel Gas Process Piping
M-FUEL-GGEP	MFUGG	Fuel Gas General Piping
M-FUEL-OPRP	MFUOP	Fuel Oil Process Piping
M-FUEL-OGEP	MFUOG	Fuel Oil General Piping
<b>M-HVAC</b>	<b>MHV</b>	<b>HVAC System</b>
M-HVAC-CDFF	MHVCD	HVAC Ceiling Diffusers
M-HVAC-ODFF	MHVOD	HVAC Other Diffusers
M-HVAC-DUCT	MHVDU	HVAC Ductwork
M-HVAC-EQPM	MHVEQ	HVAC Equipment
<b>M-HOTW</b>	<b>MHO</b>	<b>Hot Water Heating System</b>
M-HOTW-EQPM	MHOEQ	Hot Water Equipment
M-HOTW-PIPE	MHOPI	Hot Water Piping
<b>M-CWTR</b>	<b>MCW</b>	<b>Chilled Water Systems</b>
M-CWTR-PIPE	MCWPI	Chilled Water Piping
M-CWTR-EQPM	MCWEQ	Chilled Water Equipment
<b>M-MACH</b>	<b>MMA</b>	<b>Machine Shop Equipment</b>
<b>M-MDGS</b>	<b>MMD</b>	<b>Medical Gas Systems</b>
M-MDGS-EQPM	MMDEQ	Medical Gas Equipment
M-MDGS-PIPE	MMDPI	Medical Gas Piping
<b>M-PROC</b>	<b>MPR</b>	<b>Process Systems</b>
M-PROC-EQPM	MPREQ	Process Equipment
M-PROC-PIPE	MPRPI	Process Piping

## Architecture, Interiors, and Facilities (continued)

Long Format Layer Name	Short Format Layer Name	Layer Description
		<b>Drawing Information Layers</b>
A-SHBD	ASH	Sheet Border and Title Block Line Work
A-SHBD-TTLB	ASHTT	Project Titleblock
A-SHBD-LOGO	ASHLO	Office or Project Logo
A-PFLR	APF	Floor Plan
A-PLGS	APL	Large Scale Floor Plan
A-PCLG	APC	Reflected Ceiling Plan
A-PROF	APR	Roof Plan
A-PXFU	APX	Fixtures and Furniture Plan
A-PEQM	APE	Equipment Plan
A-PMFN	APM	Materials and Finish Plan
A-PDEM	APD	Demolition Plan
A-PARE	APA	Area Calculations
A-POCC	APO	Occupancy Plan
A-P***	AP*	Other Plan Drawings
A-ELEV	AEL	Interior and Exterior Elevations
A-SECT	ASE	Building and Wall Sections
A-DETL	ADE	Details
A-SCHD	ASC	Schedules and Title Block Sheets
A-****-NOTE	A**NO	Notes, Call-outs, and Key Notes
A-****-TEXT	A**TE	General Notes and Specifications
A-****-SYMB	A**SY	Symbols, Bubbles, and Targets
A-****-DIMS	A**DI	Dimensions
A-****-PATT	A**PA	Cross-hatching and Poche
A-****-TTLB	A**TT	Title Block Sheet Name and Number
A-****-NPLT	A**NP	Nonplot Information and Construction Lines
A-****-PLOT	A**PL	Plotting Targets and Windows

## Structural

Long Format Layer Name	Short Format Layer Name	Layer Description
		<b>Building Information Layers</b>
S-GRID	SGR	Column Grid
S-GRID-EXTR	SGREX	Column Grid Outside Building
S-GRID-INTR	SGRIN	Column Grid Inside Building
S-GRID-DIMS	SGRDI	Column Grid Dimensions
S-GRID-IDEN	SGRID	Column Grid Tags
		<b>Foundation</b>
S-FNDN	SFN	Piles and Drilled Piers
S-FNDN-PILE	SFNPI	Foundation Reinforcing
S-FNDN-RBAR	SFNRB	
		<b>Slab</b>
S-SLAB	SSL	Edge of Slab
S-SLAB-EDGE	SSLED	Slab Reinforcing
S-SLAB-RBAR	SSLRB	Slab Control Joints
S-SLAB-JOIN	SSLJO	

## Architecture, Interiors, and Facilities

Long Format Layer Name	Short Format Layer Name	Layer Description
<b>Building Information Layers</b>		
<b>A-WALL</b>	<b>AWA</b>	<b>Walls</b>
A-WALL-FULL	AWAFU	Full Height Walls, Stair and Shaft Walls, and Walls to Structure
A-WALL-PRHT	AWAPR	Partial Height Walls (Not on Reflected Ceiling Plans)
A-WALL-MOVE	AWAMO	Movable Partitions
A-WALL-HEAD	AWAHE	Door and Window Headers (Shown on Reflected Ceiling Plans)
A-WALL-JAMB	AWAJA	Door and Window Jambs (Not on Reflected Ceiling Plans)
A-WALL-PATT	AWAPA	Wall Insulation, Hatching and Fill
A-WALL-ELEV	AWAEL	Wall Surfaces (3D Views)
<b>A-DOOR</b>	<b>ADO</b>	<b>Doors</b>
A-DOOR-FULL	ADOFU	Full Height (to Ceiling) Door: Swing and Leaf
A-DOOR-PRHT	ADOPR	Partial Height Door: Swing and Leaf
A-DOOR-IDEN	ADOID	Door Number, Hardware Group, etc.
A-DOOR-ELEV	ADOEL	Doors (3D Views)
<b>A-GLAZ</b>	<b>AGL</b>	<b>Windows, Window Walls, Curtain Walls, Glazed Partitions</b>
A-GLAZ-FULL	AGLFU	Full Height Glazed Walls and Partitions
A-GLAZ-PRHT	AGLPR	Windows and Partial Height Glazed Partitions
A-GLAZ-SILL	AGLSI	Window Sills
A-GLAZ-IDEN	AGLID	Window Number
A-GLAZ-ELEV	AGLEL	Glazing and Mullions (Elevation Views)

## Architecture, Interiors, and Facilities (continued)

Long Format Layer Name	Short Format Layer Name	Layer Description
<b>A-FLOR</b>	<b>AFL</b>	<b>Floor Information</b>
A-FLOR-OTLN	AFLOT	Floor or Building Outline
A-FLOR-LEVL	AFLLE	Level Changes, Ramps, Pits, and Depressions
A-FLOR-STRS	AFLST	Stair Treads, Escalators, and Ladders
A-FLOR-RISR	AFLRI	Stair Risers
A-FLOR-HRAL	AFLHR	Stair and Balcony Handrails and Guard Rails
A-FLOR-EVTR	AFLEV	Elevator Cars and Equipment
A-FLOR-TPTN	AFLRP	Toilet Partitions
A-FLOR-SPCL	AFLSP	Architectural Specialties (Toilet Room Accessories, Display Cases)
A-FLOR-WDWK	AFLWD	Architectural Woodwork (Field-Built Cabinets and Counters)
A-FLOR-CASE	AFLCA	Casework (Manufactured Cabinets)
A-FLOR-APPL	AFLAP	Appliances
A-FLOR-OVHD	AFLOV	Overhead Skylights and Overhangs (Usually Dashed Lines)
A-FLOR-RAIS	AFLRA	Raised Floors
A-FLOR-IDEN	AFLID	Room Numbers, Names, Targets, etc.
A-FLOR-PATT	AFLPA	Paving, Tile, and Carpet Patterns
<b>A-EQPM</b>	<b>AEQ</b>	<b>Equipment</b>
A-EQPM-FIXD	AEQFI	Fixed Equipment
A-EQPM-MOVE	AEQMO	Movable Equipment
A-EQPM-NICN	AEQNI	Equipment Not in Contract
A-EQPM-ACCS	AEQAC	Equipment Access
A-EQPM-IDEN	AEQID	Equipment Identification Numbers
A-EQPM-ELEV	AEQEL	Equipment Surfaces (3D Views)

## Civil Engineering and Site Work

Long Format Layer Name	Short Format Layer Name	Layer Description
<b>Building Information Layers</b>		
C-PROP	CPR	Property Lines and Survey Benchmarks
C-TOPO	CTO	Proposed Contour Lines and Elevations
C-BLDG	CBL	Proposed Building Footprints
C-PKNG	CPK	Parking Lots
C-ROAD	CRO	Roads
C-STRM	CST	Storm Drainage Catch-basins and Manholes
C-COMM	CCO	Site Communication (Telephone Poles, Boxes, Towers)
C-WATR	CWA	Domestic Water (Manholes, Pumping Stations, Storage Tanks)
C-FIRE	CFI	Fire Protection Hydrants, Connections
C-NGAS	CNG	Natural Gas Manholes, Meters, and Storage Tanks
C-SSWR	CSS	Sanitary Sewer (Manholes, Pumping Stations)
C-ELEV	CEL	Elevations
C-SECT	CSE	Sections
C-DETL	CDE	Details
<b>Drawing Information Layers</b>		
C-SHBD	CSH	Sheet Border and Title Block Line Work
C-PSIT	CPS	Site Plan
C-PELC	CPE	Site Electrical Systems Plan
C-PUTL	CPU	Site Utility Plan
C-PGRD	CPG	Grading Plan
C-PPAV	CPP	Paving Plan
C-P***	CP*	Other Site, Landscape, or Civil Plans
C-ELEV	CEL	Elevations
C-SECT	CSE	Sections
C-DETL	CDE	Details
C-SCHD	CSC	Schedules and Title Block Sheets

## Landscape Architecture

Long Format Layer Name	Short Format Layer Name	Layer Description
<b>Building Information Layers</b>		
L-PLNT	LPL	Plant and Landscape Materials
L-IRRG	LIR	Irrigation System
L-WALK	LWA	Walks and Steps
L-SITE	LSI	Site Improvements
L-ELEV	LEL	Elevations
L-SECT	LSE	Sections
L-DETL	LDE	Details
<b>Drawing Information Layers</b>		
L-SHBD	LSH	Sheet Border and Title Block Line Work
L-PSIT	LPS	Site Plan
L-PPLA	LPP	Planting Drawing
L-PIRR	LPI	Irrigation Drawing
L-PWLK	LPW	Walks and Paving Plan
L-P***	LP*	Other Landscape Plan Drawings
L-ELEV	LEL	Elevations
L-SECT	LSE	Sections
L-DETL	LDE	Details
L-SCHD	LSC	Schedules and Title Block Sheets

## Plumbing

Long Format Layer Name	Short Format Layer Name	Layer Description
<b>Building Information Layers</b>		
P-ACID	PAC	Acid, Alkaline, and Oil Waste Systems
P-DOMW	PDO	Domestic Hot and Cold Water Systems
P-SANR	PSA	Sanitary Drainage
P-STRM	PST	Storm Drainage System
P-EQPM	PEQ	Plumbing Miscellaneous Equipment
P-FIXT	PFI	Plumbing Fixtures
P-ELEV	PEL	Elevations
P-SECT	PSE	Sections
P-DETL	PDE	Details
<b>Drawing Information Layers</b>		
P-SHBD	PSH	Sheet Border and Title Block Line Work
P-PPLM	PPP	Plumbing Plan
P-PDRA	PPD	Storm Drainage
P-PSAN	PPS	Sanitary Drainage Plan
P-P***	P**	Other Plumbing Plans
P-RISR	PRI	Plumbing Riser Diagram
P-ELEV	PEL	Elevations
P-SECT	PSE	Sections
P-DETL	PDE	Details
P-SCHD	PSC	Schedules and Title Block Sheets

## Fire Protection

Long Format Layer Name	Short Format Layer Name	Layer Description
<b>Building Information Layers</b>		
F-CO2S	FCO	CO <sub>2</sub> System
F-HALN	FHA	Halon
F-SPRN	FSP	Fire Protection Sprinkler System
F-STAN	FST	Fire Protection Standpipe System
F-PROT	FPR	Fire Protection Systems
F-ELEV	FEL	Elevations
F-SECT	FSE	Sections
F-DETL	FDE	Details
<b>Drawing Information Layers</b>		
F-SHBD	FSH	Sheet Border and Title Block Line Work
F-PSPR	FPS	Sprinkler Plan
F-RISR	FRI	Sprinkler Riser Diagram
F-PFPE	FPF	Fire Protection Equipment Plan
F-P***	FP*	Other Fire Protection System Plans
F-ELEV	FEL	Elevations
F-SECT	FSE	Sections
F-DETL	FDE	Details
F-SCHD	FSC	Schedules and Title Block Sheets

### 3. SUMMARY LAYER LIST WITHOUT MODIFIERS

This list contains all layer names summarized by major and minor group.

#### Architecture, Interiors, and Facilities

Long Format Layer Name	Short Format Layer Name	Layer Description
<b>Building Information Layers</b>		
A-WALL	AWA	Walls
A-DOOR	ADO	Doors
A-GLAZ	AGL	Windows, Window Walls, Curtain Walls, Glazed Partitions
A-FLOR	AFL	Floor Information
A-EQPM	AEQ	Equipment
A-FURN	AFU	Furniture
A-CLNG	ACL	Ceiling Information
A-ROOF	ARO	Roof
A-AREA	AAR	Area Calculations and Occupancy Information
A-ELEV	AEL	Interior and Exterior Elevations
A-SECT	ASE	Sections
A-DETL	ADE	Details
<b>Drawing Information Layers</b>		
A-SHBD	ASH	Sheet Border and Title Block Line Work
A-PFLR	APF	Floor Plan
A-PLGS	APL	Large Scale Floor Plan
A-PCLG	APC	Reflected Ceiling Plan
A-PROF	APR	Roof Plan
A-PXFU	APX	Fixtures and Furniture Plan
A-PEQM	APE	Equipment Plan
A-PMFN	APM	Materials and Finish Plan
A-PDEM	APD	Demolition Plan
A-PARE	APA	Area Calculations
A-POCC	APO	Occupancy Plan
A-P***	AP*	Other Plan Drawings
A-ELEV	AEL	Interior and Exterior Elevations
A-SECT	ASE	Building and Wall Sections
A-DETL	ADE	Details
A-SCHD	ASC	Schedules and Title Block Sheets

#### Structural

Long Format Layer Name	Short Format Layer Name	Layer Description
<b>Building Information Layers</b>		
S-GRID	SGR	Column Grid
S-FNDN	SFN	Foundation
S-SLAB	SSL	Slab
S-ABLT	SAB	Anchor Bolts
S-COLS	SCO	Columns
S-WALL	SWA	Structural Bearing or Shear Walls
S-METL	SME	Miscellaneous Metal
S-FRAM	SFR	Framing Plan (Beams, Joists)
S-ELEV	SEL	Elevations
S-SECT	SSE	Sections
S-DETL	SDE	Details
<b>Drawing Information Layers</b>		
S-SHBD	SSH	Sheet Border and Title Block Line Work
S-PFND	SPF	Foundation Plan
S-PSFR	SPS	Structural Framing Plan
S-PCOL	SPC	Column Plan
S-P***	SP*	Other Structural Plans
S-ELEV	SEL	Elevations
S-SECT	SSE	Sections
S-DETL	SDE	Details
S-SCHD	SSC	Schedules and Title Block Sheets

## Modifier

A modifier may be added to a layer name for further differentiation. For example, walls (A-WALL) may be categorized as full height (A-WALL-FULL), partial height (A-WALL-PRHT), or movable (A-WALL-MOVE).

The modifier is optional and need not be used when the minor group layer name alone will suffice. For example, a simple project might be accomplished using only the layers shown below:

A-WALL	AWA	Walls
A-DOOR	ADO	Doors
A-GLAZ	AGL	Windows, Window Walls, Curtain Walls, and Glazed Partitions
A-FLOR	AFL	Floor Information
A-CLNG	ACL	Ceiling Information
A-ELEV	AEL	Interior and Exterior Elevations
A-DETL	ADE	Details
A-PFLR	APF	Floor Plan
A-PCLG	APC	Reflected Ceiling Plan

CAD drawings may contain a combination of layer names with and without modifiers. In the example below, A-WALL contains all walls except partial height and movable walls.

A-WALL	AWA	Walls
A-WALL-PRHT	AWAPR	Partial Height Walls
A-WALL-MOVE	AWAMO	Movable Walls
A-DOOR	ADO	Doors
A-DOOR-IDEN	ADOID	Door Numbers
A-GLAZ	AGL	Windows, Window Walls, Curtain Walls, Glazed Partitions

The choice of using layer names with or without modifiers allows the guidelines to be used in a straightforward, streamlined fashion for simple projects that don't need the level of detail required for large complicated projects.

## User Definable Fields

The guidelines are intended to be open-ended. The user-defined field allows additional layers to be added to accommodate special project requirements. The user-defined field may be added after a modifier or in place of a modifier. Below are some examples of user-defined fields:

A-DOOR-METL	ADR-ME	Metal Door
A-DOOR-IDEN-METL	ADRID-ME	Metal Door Number
A-FURN-PANL-MFR1	AFUPN-M1	Furniture Panels from Manufacturer 1
A-FURN-PANL-MFR2	AFUPN-M2	Furniture Panels from Manufacturer 2
A-WALL-01	AWL-01	Walls on 1st Floor
A-WALL-02	AWL-02	Walls on 2nd Floor

User-defined fields may be variable in length up to 4 characters for long format layer names or 2 characters for short format layer names.



## 2. LAYER NAME FORMAT

### Layer Formats

The Layer Guidelines are organized as a hierarchy. This structure makes the list easier to use and accommodates future expansion. Layer names are alphanumeric and use easy-to-remember abbreviations such as A-DOOR for architectural doors, A-WALL for architectural walls, and E-POWER for electrical power.

Two formats are defined for layer names: a long format using 6–16 characters and a short format using 3–8 characters. The short format reduces keystrokes and can be accommodated on systems restricted to 8-character layer names. However, the long format provides greater readability. Either format may be used, but consistency should be maintained within a project.

Layer names are mnemonic in character to improve ease of use. In the long format, hyphens are used to separate major group, minor group, and modifier to improve readability.

Long format layer names can be automatically converted to short format layer names by combining the major group code, the first two characters of the minor group, and the first two characters of the modifier. For example, A-WALL-FULL is converted to AWAFL. It is quite possible that many CAD vendors will implement a layer “alias” feature, providing automatic translation between short form and long form layer names, thus providing the benefits of both formats.

### Major Groups

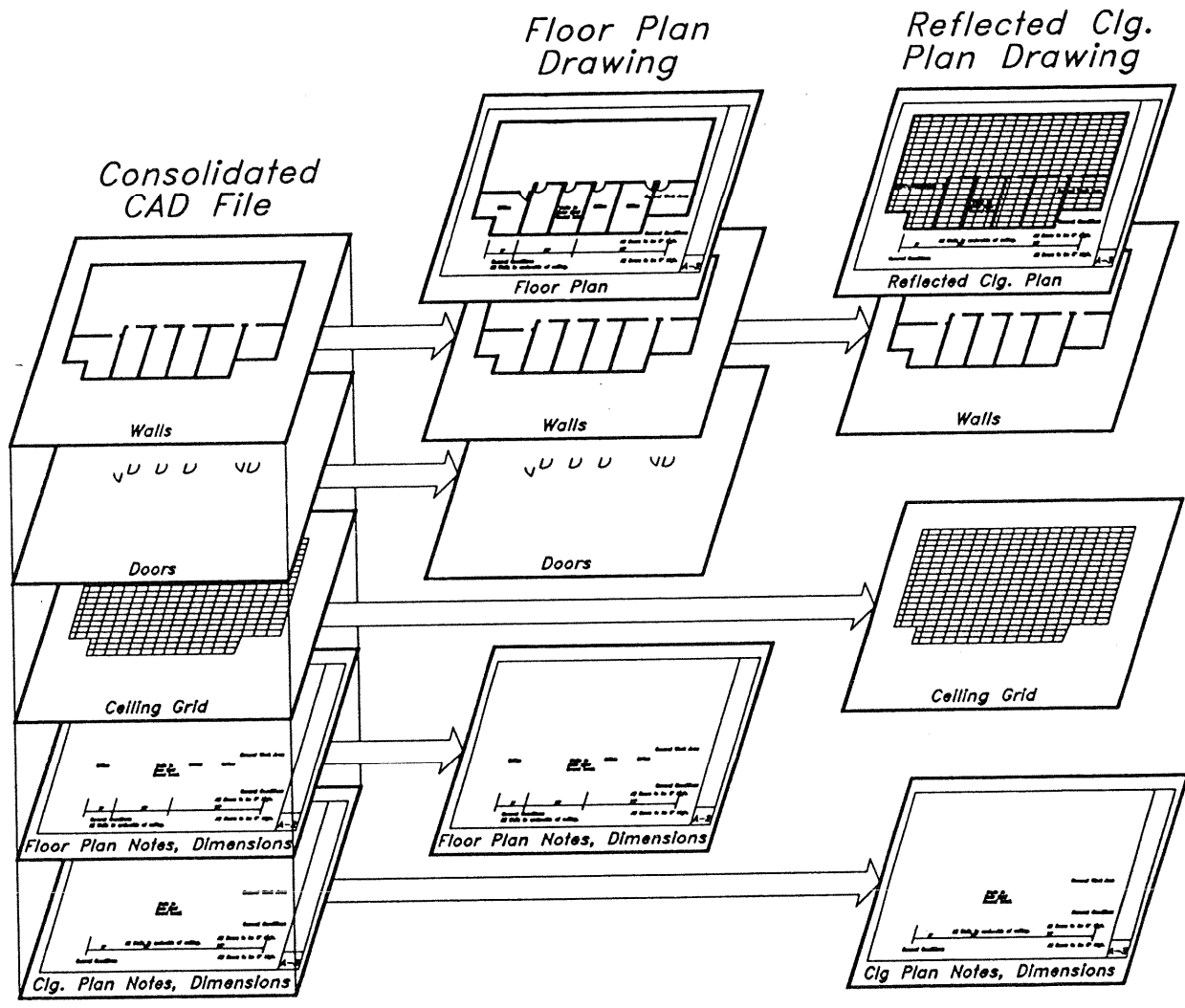
Although the major groups correspond to the traditional discipline designations used in construction document sheet numbering, they are not intended to suggest or control which member of the design team draws which objects. For example, the column grid would be placed on layer S-GRID regardless of whether it was drawn by the architect or structural engineer.

Eight major groups are defined in these guidelines:

- A Architecture, Interiors, and Facilities Management
- S Structural
- M Mechanical
- P Plumbing
- F Fire Protection
- E Electrical
- C Civil Engineering and Site Work
- L Landscape Architecture

### Minor Groups

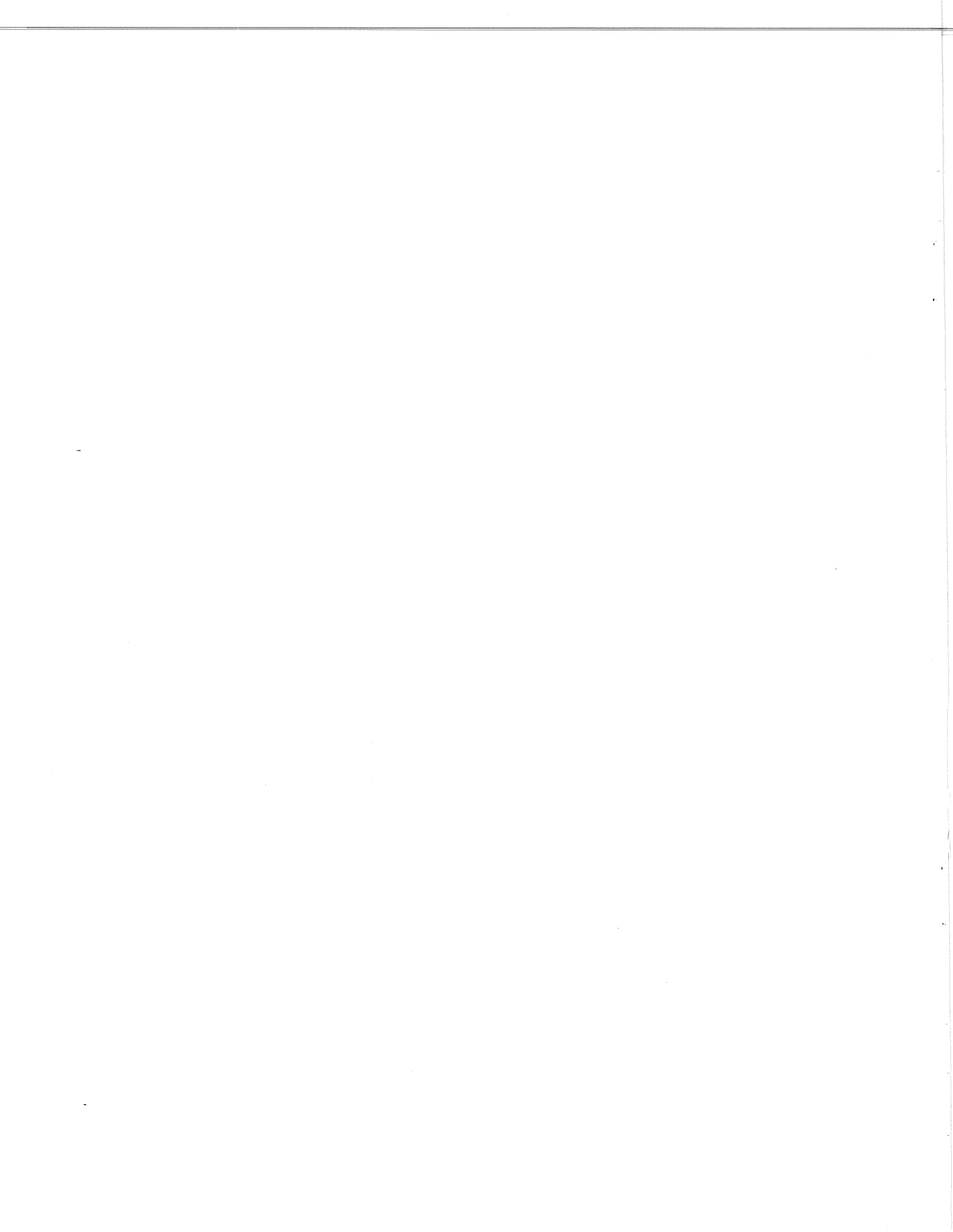
Minor groups subdivide major groups on the basis of construction system or type of information. For example, the architectural major group contains minor groups for walls, doors, floors, ceilings, furniture, and equipment.



**Figure 1.1 An Example of Using Layers to Share Information**







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