

Purpose of the ANSI/TIA/EIA-606 Standard

Modern buildings require an effective telecommunications infrastructure to support the wide variety of services that rely on the electronic transport of information. Administration includes basic documentation and timely updating of drawings, labels and records. Administration should be synergistic with voice, data and video telecommunications, as well as with other building signal systems, including security, audio, alarms and energy management. Administration can be accomplished with paper records, but in today's increasingly complex telecommunications environment, effective administration is enhanced by the use of computer-based systems.

A multi-tenant commercial building has a life expectancy of at least 50 years. Moreover, in a multi-tenant environment, continuous moves, adds and changes are inevitable. Administrative record-keeping plays an increasingly necessary role in the flexibility and management of frequent moves, adds and changes. This booklet concisely describes the administrative record-keeping elements of a modern structured cabling system.

TIA/EIA-606

2. Administrative Concepts

The typical administration system includes records, reports, drawings and work orders.

Identifiers

Each space, pathway, cable termination point and ground is assigned a unique identifier-a number that can be simply encoded to provide supplemental information.

Telecommunication Records

Minimum required records for each cable, space, pathway, ground, termination hardware and position are maintained. These records are required to be linked (cross-referenced) to all related records.

Optional linkages

Optional linkages may be made to other records. Such records might include blueprints, PBX records, equipment inventories (phones, PCs, software, LAN, furniture) and user codes (extension, account billing number, passwords).

It is desirable that reports can be generated from one or more sets of interlinked records in a variety of formats.

Drawings

Drawings, both conceptual and as-built, include floor plans, cable schematics and rack layouts.

Work orders

Work orders may involve spaces, pathways, cables, splices, terminations or grounding, individually or in combination. The work order should list those responsible for physical changes, as well as those updating the documentation to ensure future accuracy.

Identification Formats

A unique alphanumeric identification code is created for every location, pathway, cable and termination point. Suggestions in the standard include:

Alphanumeric Identification Code	
BCxxx	bonding conductor
BCDxxx	backbone conduit
Cxxx	cable
CBxxx	backbone cable
CDxxx	conduit
CTxxx	cable tray
ECxxx	equipment (bonding) conductor
EFxxx	entrance facility
ERxxx	equipment room
Fxxx	fiber
GBxxx	grounding busbar
GCxxx	grounding conductor
HHxxx	handhole
ICxxx	intermediate cross-connect
Jxxx	jack
MCxxx	main cross-connect
MHxxx	manhole or maintenance hole
PBxxx	pull box
Sxxx	splice
SExxx	service entrance
SLxxx	sleeve
TCxxx	telecommunications closet
TGBxxx	telecommunications grounding busbar
TMGB	telecommunications main grounding busbar
WAxxx	work area

The actual format in the preceding chart is not mandated by the standard. However, the chosen format must be consistent and provide a unique identifier number for each system element. This method lends itself to organization and updating of multiple records by the use of powerful relational databases (three-dimensional spreadsheet) programs.

Some Identifier Examples

J0001	Label for an information outlet jack
D306	Designation for a work area

3A-C17-005 Termination in closet 3A, column
C,
row 17, block position 005

Examples like those above (taken from the TIA/EIA 606 text and Administrative Labeling Map) indicate the flexibility of conventions that can be established for purposes of naming. Logical naming conventions can also convey considerable additional information about other linkages.

Circuit Example

As an alternate conceptual example, this string of codes (resembling links on an Internet address) logically describes a series of voice communication links. It can be read as follows:

**JONES / X2440 / LC99 / A001V1 / C001 / TC.A001V1 /
HC01 / Pr1.2. / MDF.C17005 / PBX.01A0203**

Bob Jones

at extension 2440,

is connected by line cord 99

to information outlet A001, voice jack 1.

Cable 001 extends from that voice jack

To telecom closet A, where it terminates on a block labeled by adding TC in front of A001V1 (the I/O label).

The voice signals travel on house cable 01,

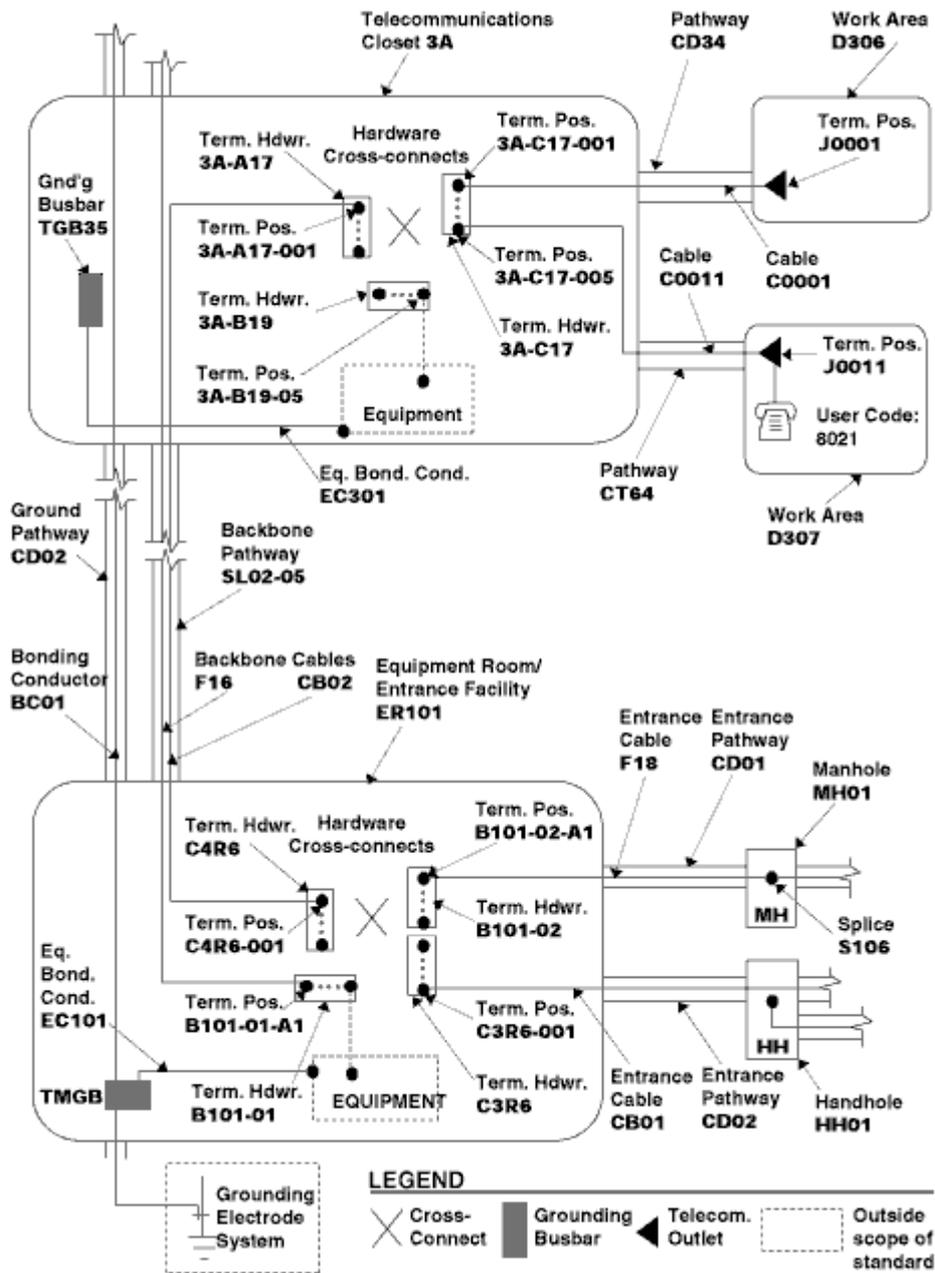
Carried on pairs 1, 2.

The pairs terminate at the main distribution frame
in column C, row 17, block position 005.

They are interconnected to PBX 01, row A, card 02, port 03.

3. Administrative Labeling Map

Here is a combination schematic/elevation view of a structured telecommunications cabling system, detailing a TIA/EIA-606-compliant labeling scheme. The example records in this booklet follow the labeling shown below.



4. Summary of Records Elements

Summary of Record Elements This table outlines the minimum required information and required linkages. Further information is optional. A multi-dimensional database or spreadsheet is helpful.

	Record	Required information	Required Linkages To
Pathways & Spaces	Pathway	Pathway Identification#	Cable Records
		Pathway Type	Space Records
		Pathway Fill	Pathway Records
		Pathway Load	Groundings Records

	Space	Space Identification# Space Type	Pathway Records Cable Records Grounding Records
Wiring	Cable	Cable Identification# Cable Type Unterminated Pair #s Damaged Pair #s Available Pair #s	Termination Records Splice Records Pathway Records Grounding Records
	Termination Hardware	Termination Hardware #s Term. Hardware Type Damaged Position #s	Term. Position Records Space Records Groundings Records
	Termination Position	Termination Position # Term. Position Type User Code Cable Pair/Condition #s	Cable Records Other Term. Records Term. Hardware Records Space Records
	Splice	Splice identification # Splice Type	Cable Records Space Records
Grounding	TMGB	TMGB Identification# Busbar Type Grounding Conductor # Resistance to Earth Date of Measurement	Bonding Conductor Records Space Records
	Bonding Conductor	Bonding Conductor ID# Conductor Type Busbar Identification #	Grounding Busbar Records Pathway Records
	TGB	Busbar Identification #s Busbar Type	Bonding Conductor Records Space Records

5. Pathway & Space Administration

Here are examples of a conduit path and telecom closet space record (see [Administrative](#)

[Labeling Map](#)). The TIA/EIA 606 standard also includes examples of cable tray, work area and manhole records.

Pathway Record	Sample Data	Explanatory Notes
Required Information		
Pathway Identification #	CD43	<i>conduit 43</i>
Pathway Type	2" EMT	<i>size 2 metal conduit</i>
Pathway Fill	20%	<i>present fill</i>
Pathway Load	N/A	<i>no conduit load spec.</i>
Required Linkages		
Cable Records	C0001, C0002	
Space Record (end 1)	D306	<i>office 306 floor 3,</i>
Space Record (end 2)	3A	<i>closet A pull/spice</i>
Space Record (access)	D302	<i>box above D302 other</i>
Pathway Record		<i>pathway record</i>
Grounding Record	N/A	

Optional information could include length, maximum fill, bends, drawing number, etc.

Space Record	Sample Data	Explanatory Notes
Required Information		
Space Identification #	3A	floor 3, closet A
Space Type	TC	telecom closet
Required Linkages		
Pathway Records	CD34, CT64	pathways terminating here
Cable Record	C0001, C0002	cables terminating here
Grounding Record	TGB35	grounding busbar

Optional information could include floor size, space served, drawing, key number, etc.

The design of pathways and spaces is defined by the TIA/EIA-569-A Commercial Building Standard for Telecommunications Pathways and Spaces.

6. Wiring System Administration

Other examples in the TIA/EIA-606 standard include fiber backbone and patch panel, horizontal UTP and others. The concept is outlined below ([see Administrative Labeling Map](#)).

Cable Record	Sample Data	Explanatory Notes
Required Information		
Cable Identification #	CB02	copper backbone cable 02
Cable Type	100-pair CMR-3	copper Cat 3 riser
Unterminated Pair #	0-none	list of unterminated pairs
Damaged Pair #	15, 37, 95	list of damaged pairs
Available Pair #	80-100	list of pairs not in use
Required Linkages		
Termination Record Pr 1	C4R6-01	3A-A17-001 pair punchdown at each end
▼	▼	(pairs 2-99 not shown)
Termination Record Pr 100	C4R6-01	3A-A17-001 last pair punchdown
Splice Records	N/A	
Pathway Record	SL02-05	sleeve 02-05
Grounding Record	N/A	

Optional information could include length, ownership, etc.

Termination Hardware	Sample Data	Explanatory Notes
Required Information		
Term. Hardware ID#	3A-C17	closet 3A, column C, row 17
Term. Hardware Type	110	110 punchdown block
Damaged Position #s	0	none damaged
Required Linkages		
Term. Position Record 1	3A-C17-001	4-pair cable terminations
▼	▼	(positions 2-9 not shown)
Term. Position Record	10 3A-C17-010	last termination
Space Record	3A	floor 3, closet A
Grounding Record	N/A	

Optional information could include voltage protection positions and type, etc.

Here is a termination position record for an information outlet ([see Administrative Labeling Map](#)).

Termination Hardware	Sample Data	Explanatory Notes
Required Information		
Term. Position ID#	J0011	information outlet jack 11
Term. Position Type	IDC	insul. displacement connection
User Code	x8021	telephone extension
Cable Pairs	1-4	4-pair modular
Required Linkages		
Cable Record	C0011	cable serving this information outlet
Other Term. Pos. Record 1	3A-C17-005	term. at other end
Other Term. Pos. Record 2	3A-A17-001	cross-connect term.
Term. Hardware Record	N/A	N/A for work area
Space Record	D307	office 307

Optional information could include jack catalog number, signal type (voice/data), category, etc. The TIA/EIA-606 standard provides numerous examples of single and separately administered spliced cables.

Splice Record	Sample Data	Explanatory Notes
Required Information		
Splice Identification #	S106	splice 106
Splice Type	Fusion	splicing method
Required Linkages		
Cable Record	F18	fiber cable 18
Space Record	MH01	manhole 01

Optional information could include splice equipment, date, name, etc. Structured cabling system standards are defined by the ANSI/TIA/EIA-568-A Commercial Building Telecommunications Cabling Standard.

7. Grounding and Bonding Administration

Telecommunications systems require a reliable electrical ground reference potential, provided by a dedicated grounding/bonding conductor network. Bonding conductor cabling shall be colored green or labeled appropriately with an alphanumeric identifier and warning label.

WARNING

**IF THIS CLAMP OR CABLE
IS LOOSE OR MUST BE
REMOVED,
PLEASE CALL THE BUILDING
TELECOMMUNICATIONS
MANAGER**

Grounding records are similar to cable record format.

Grounding/Bonding Terms (with acronyms):	
TMGB	Telecom Main Grounding Busbar
TBB	Telecom Bonding Backbone
TGB	Telecom Grounding Busbar
TBBIBC	Telecom Bonding Backbone Interconnecting Bonding Conductor

8. Label Color Coding

Shown here are the color codes used for termination field labels.

Termination Type	Color	Comments
Demarcation Point	Orange	CO terminations
Network Connections	Green	also aux. circuit terms.
Common Equipment	Purple	PBX, Host, LANs, Mux
First-level Backbone	White	MC-IC terminations
Second-level Backbone	Gray	IC-TC terminations
Station	Blue	Horizontal cable terms.
Interbuilding Backbone	Brown	Campus cable terms.
Miscellaneous	Yellow	Aux., maint., security
Key Telephone Systems	Red	