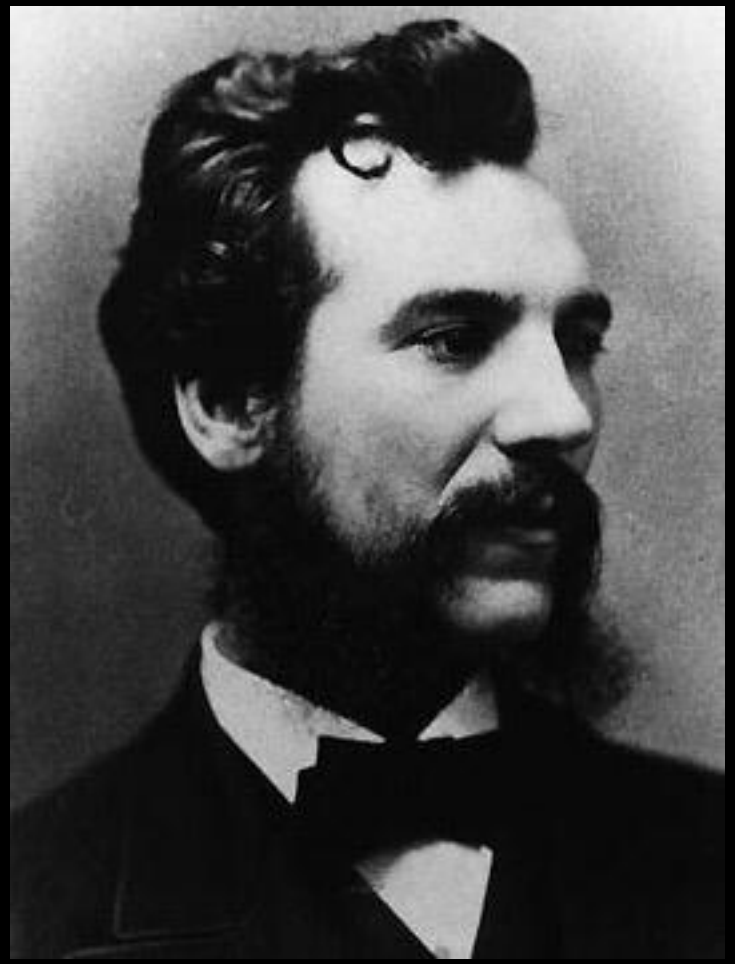
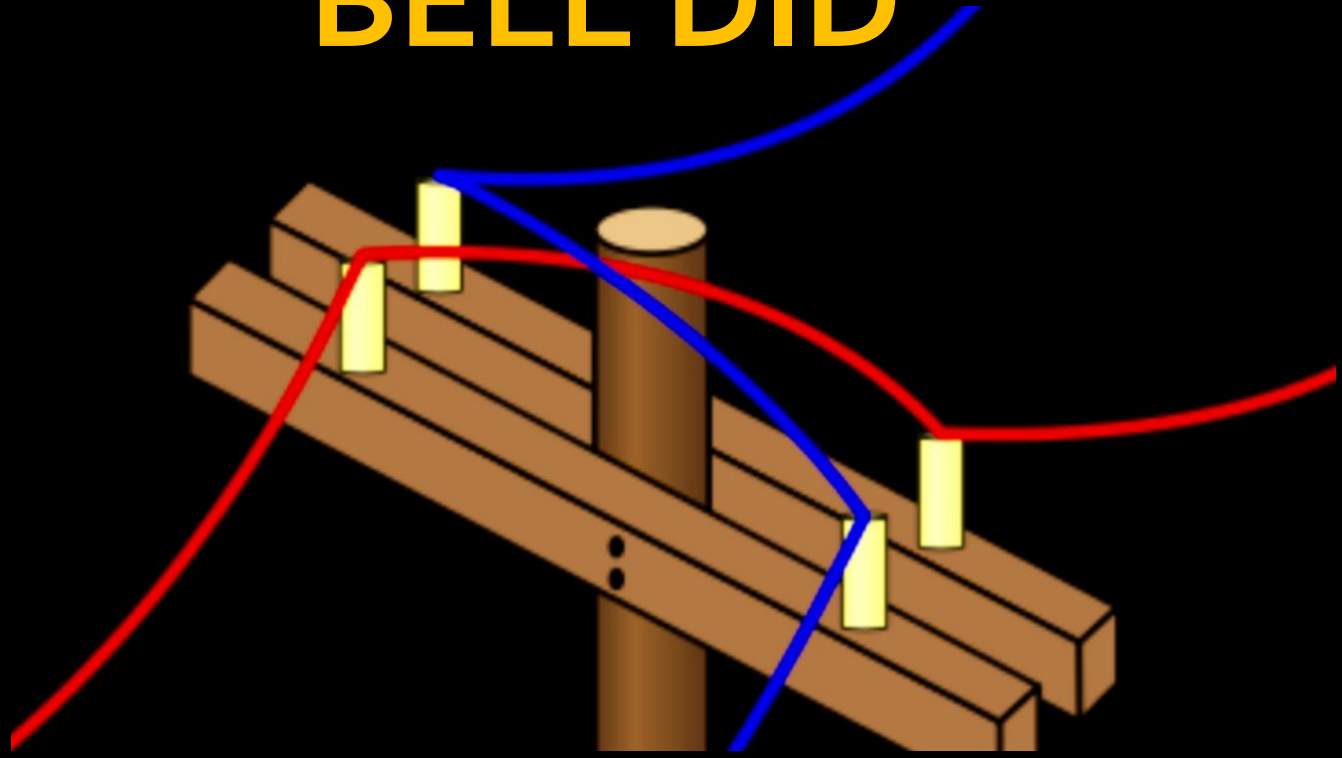
Cable Basics

WHO PUT THE TWIST IN THE TWISTED PAIR?

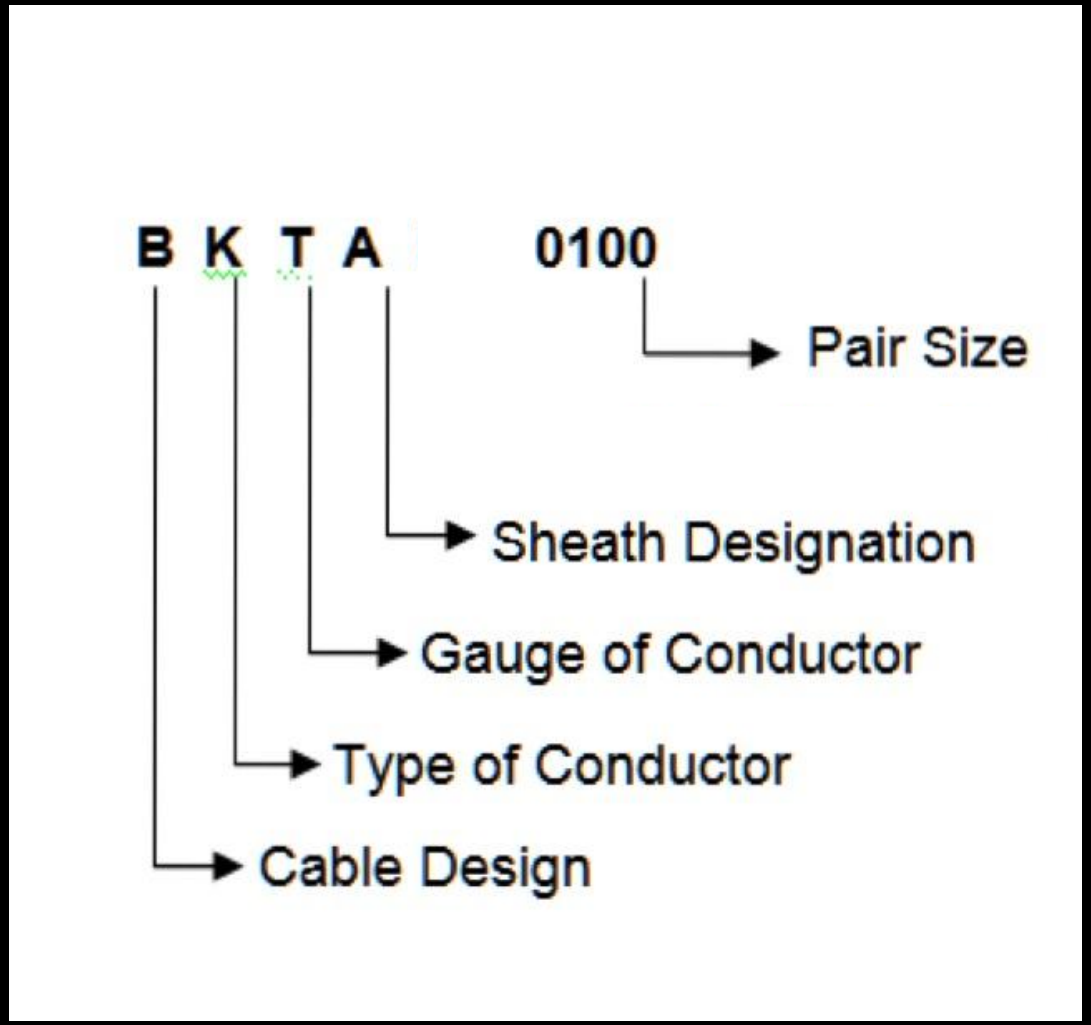


BELL DID



SEQUENCE OF STANDARDIZATION

BKTA-100



B

1st Letter	Cable Design Type
A	PIC Riser
B	PIC Air Core
C	Pulp, MUP, Pseudo-MUP, or High Potential Waterproof
D	DUCTPIC or Steampeth
G	Waterproof PIC
K	Screened Core
L	Low Capacitance
M	Low Capacitance Screened Core
N	Non-Color Coded
T	Terminating Cable (TIP), Tinned Conductors

B

K

2nd Letter	
Conductor Insulation	
B	PE-PVC (Polyethylene/Polyvinyl Chloride)
C	Dual Expanded Polyolefin - Air Core
D	Pulp and TUFPULP® Cable
E	Foam - Air Core
F	Dual Expanded Polyolefin-Core with FLEXGEL® Filling Compound
G	Solid Polyolefin-Core Filled with FLEXGEL® Filling Compound
H	Solid Polyolefin - Air Core (16-22 AWG)
J	Solid Polyolefin - Petroleum Jelly-Filled Core
K	Solid Polyolefin - Air Core (24-28 AWG)
L	Dual Expanded Polyolefin - Petroleum Jelly-Filled Core
M	Solid PIC with 80° C ETPR filling compound
N	DEPIC with 80° C ETPR filling compound (Foam skin)
R	XPE-PVC (Expanded Polyethylene/Polyvinyl Chloride)
S	Foam with 80° C filling compound

B

K

T

3rd Letter	
Gauge of Conductor	
H	16
B	19
A	22
M	24
T	26
W	28

B

K

T

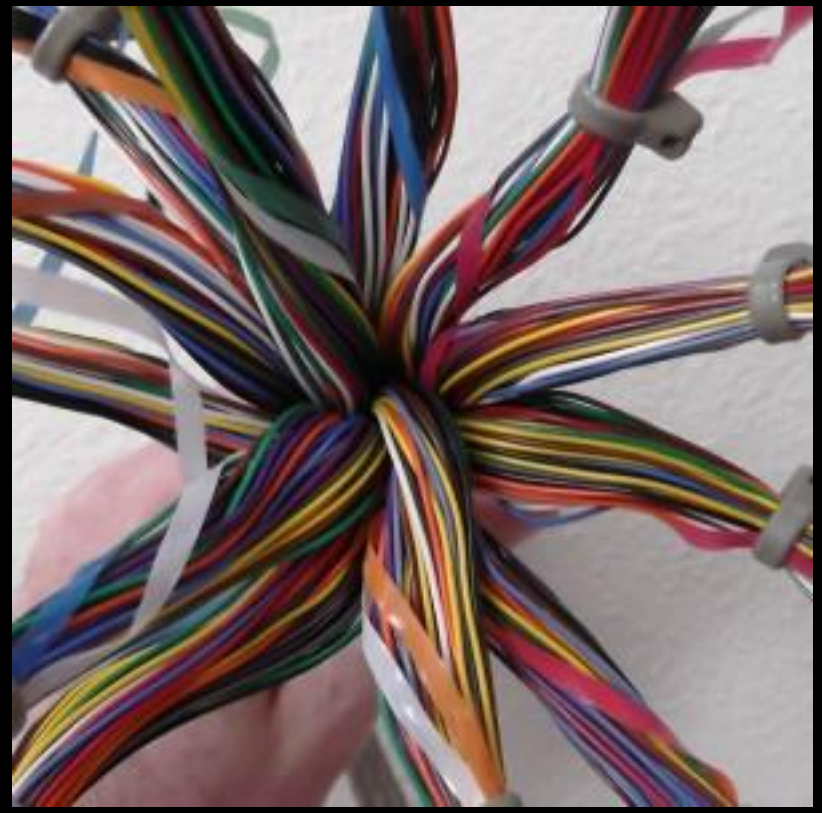
A

4th Letter	
Sheath Designation	
A	Alpeth, Bare Aluminum
B	Cupeth, Non-Gopher resistent, Copper based
C	Stalpeth, Coated Aluminum
D	ASP, Coated Metallic Tapes
E	Polyjacketed Lead
G	PAP
H	PASP (Bonded or Non-Bonded)
L	Lead
M	Alvyn
N	Bonded STEAMPETH
P	Reinfored Self-Support
Q	Gopher resistent, Copper based
S	Self-Support
T	ARPAP
V	STEAMPETH
W	ASP, Bare Metallic Tapes, Filled
Y	ASP, Bonded, Filled
Z	ASP, Bonded, Stalpeth (Air Core)

FOUR-LETTER EXCHANGE CABLE CODE

FIRST LETTER	SECOND LETTER	THIRD LETTER			FOURTH LETTER
SEQUENCE OF STANDARDIZATION	TYPE OF INSULATION	GAUGE	CONDUCTOR		TYPE OF SHEATH
			COPPER	ALUMINUM	
Alphabetic progression from A	A Reserved	13	J	-	A Alpeth
	B Polyethylene-Polyvinyl chloride (PE-PVC)	16	H	-	C Stalpeth
		17	-	C	D Lepeth
		19	B	-	Polyethylene - Jacketed Lead
	C Expanded Poly - propylene (propylex)	20	-	D	
		22	A	F	
		24	M	K	F Polyethylene - Jacketed Lepeth
	D Pulp	26	T	-	
	E	28	W	-	
	F Reserved				G PAP
	G				H PASP
	H Solid Polyethylene				J Tolpeth J
	J Solid Polypropylene				K Tolpeth K
	K Solid Polyethylene				L Lead
	L Dual Expanded Plastic (Depic)				M Alyn
					N Stalvyn
					R ARPETH
					S Self-supporting
					T ARPAP
					U ARPASP
					W ASP

COLOR CODE



Pair Color

PAIR NUMBER	RING COLOR	TIP COLOR	PAIR NUMBER	RING COLOR	TIP COLOR
1	Blue	White	13	Green	Black
2	Orange	White	14	Brown	Black
3	Green	White	15	Slate	Black
4	Brown	White	16	Blue	Yellow
5	Slate	White	17	Orange	Yellow
6	Blue	Red	18	Green	Yellow
7	Orange	Red	19	Brown	Yellow
8	Green	Red	20	Slate	Yellow
9	Brown	Red	21	Blue	Violet
10	Slate	Red	22	Orange	Violet
11	Blue	Black	23	Green	Violet
12	Orange	Black	24	Brown	Violet
			25	Slate	Violet

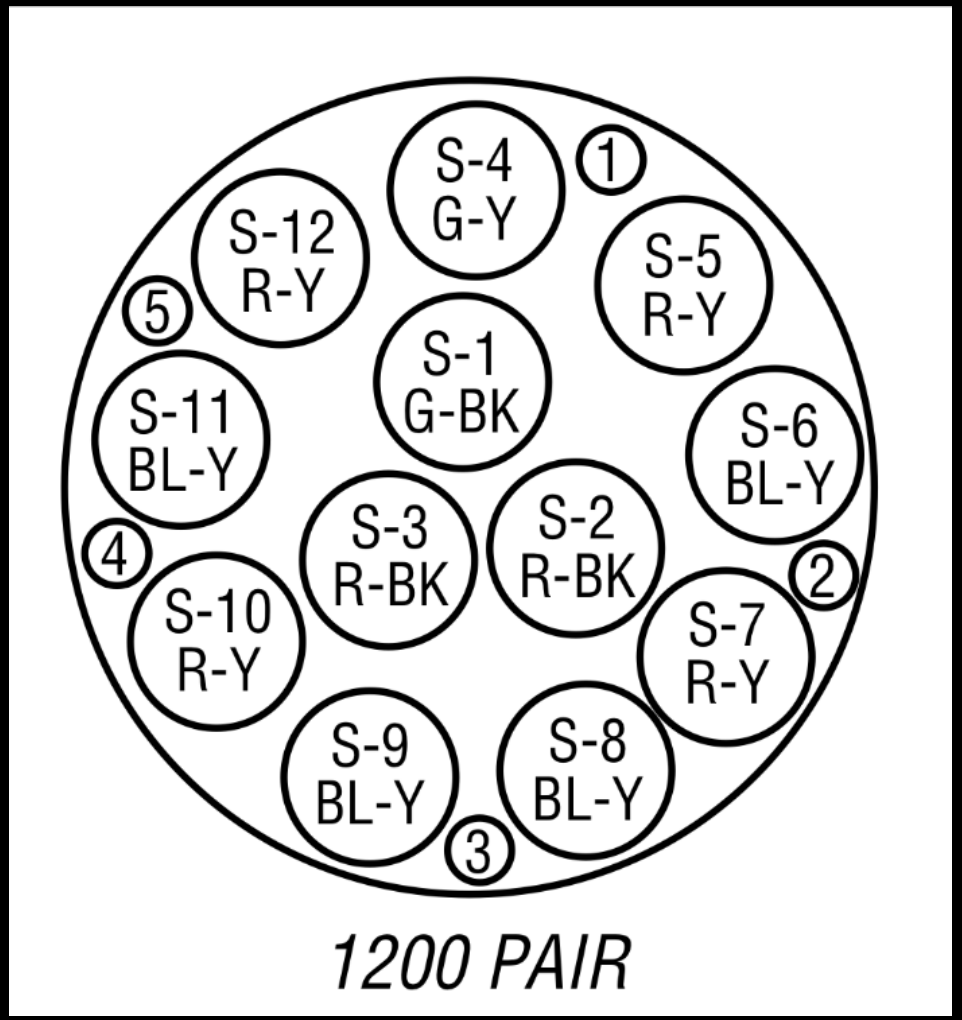
Binder Color

GROUP NUMBER	BINDER COLORS	PAIR RANGE
1	White - Blue	1 - 25
2	White - Orange	26 - 50
3	White -Green	51 - 75
4	White -Brown	76 - 100
5	White -Slate	101 - 125
6	Red - Blue	126 - 150
7	Red - Orange	151 - 175
8	Red - Green	176 - 200
9	Red - Brown	201 - 225
10	Red - Slate	226 - 250
11	Black - Blue	251 - 275
12	Black - Orange	276 - 300
13	Black - Green	301 - 325
14	Black - Brown	326 - 350
15	Black - Slate	351 - 375
16	Yellow - Blue	376 - 400
17	Yellow - Orange	401 - 425
18	Yellow - Green	426 - 450
19	Yellow - Brown	451 - 475
20	Yellow - Slate	476 - 500
21	Violet - Blue	501 - 525
22	Violet - Orange	526 - 550
23	Violet - Green	551 - 575
24	Violet - Brown	576 - 600

SUPER-UNIT BINDER COLORS FOR FULL COLOR CODE

S.U. BINDER COLOR	PAIR RANGE
White	1 - 600
Red	601 - 1200
Black	1201 - 1800
Yellow	1800 - 2400

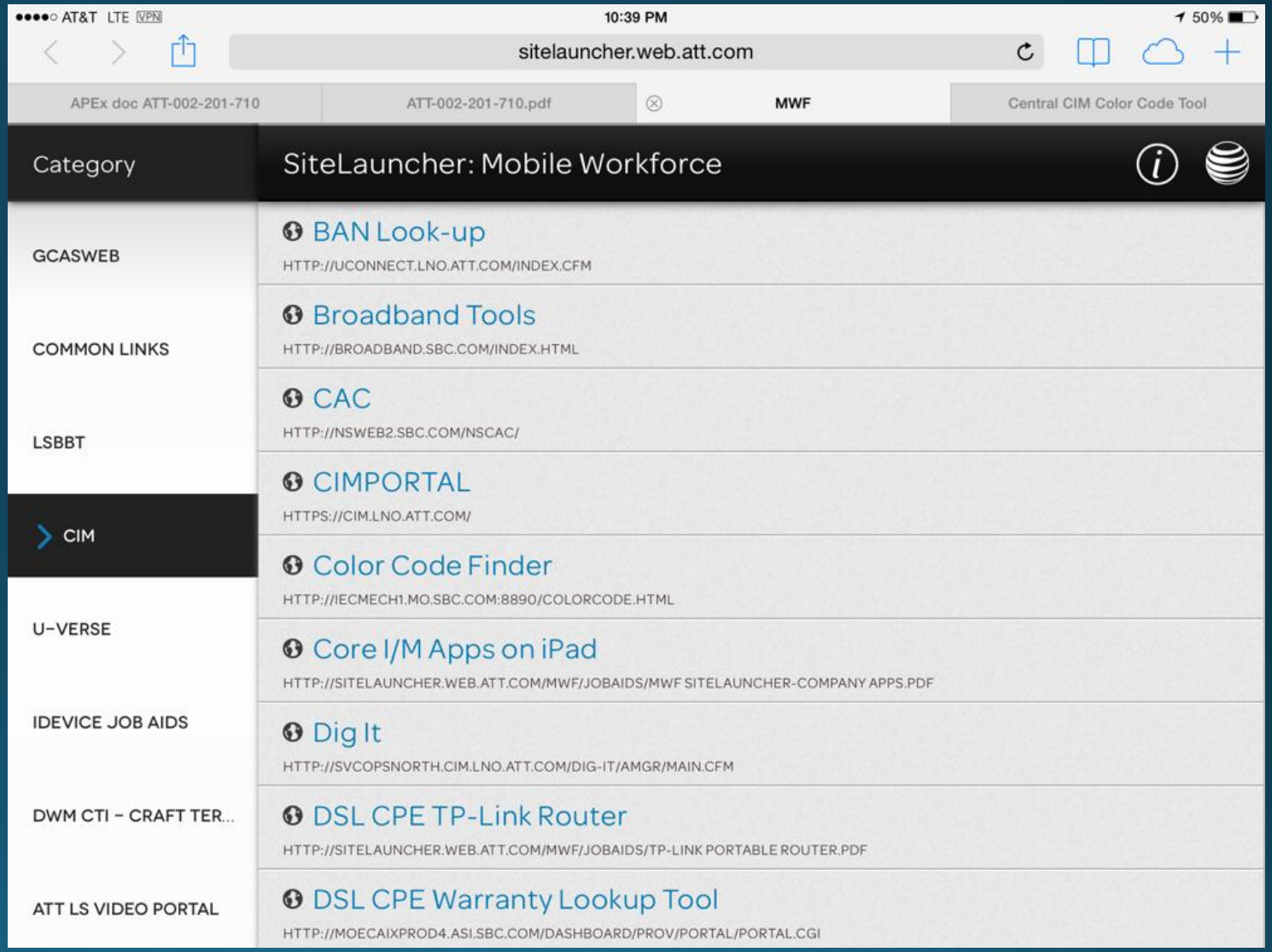
Mirrored Cable

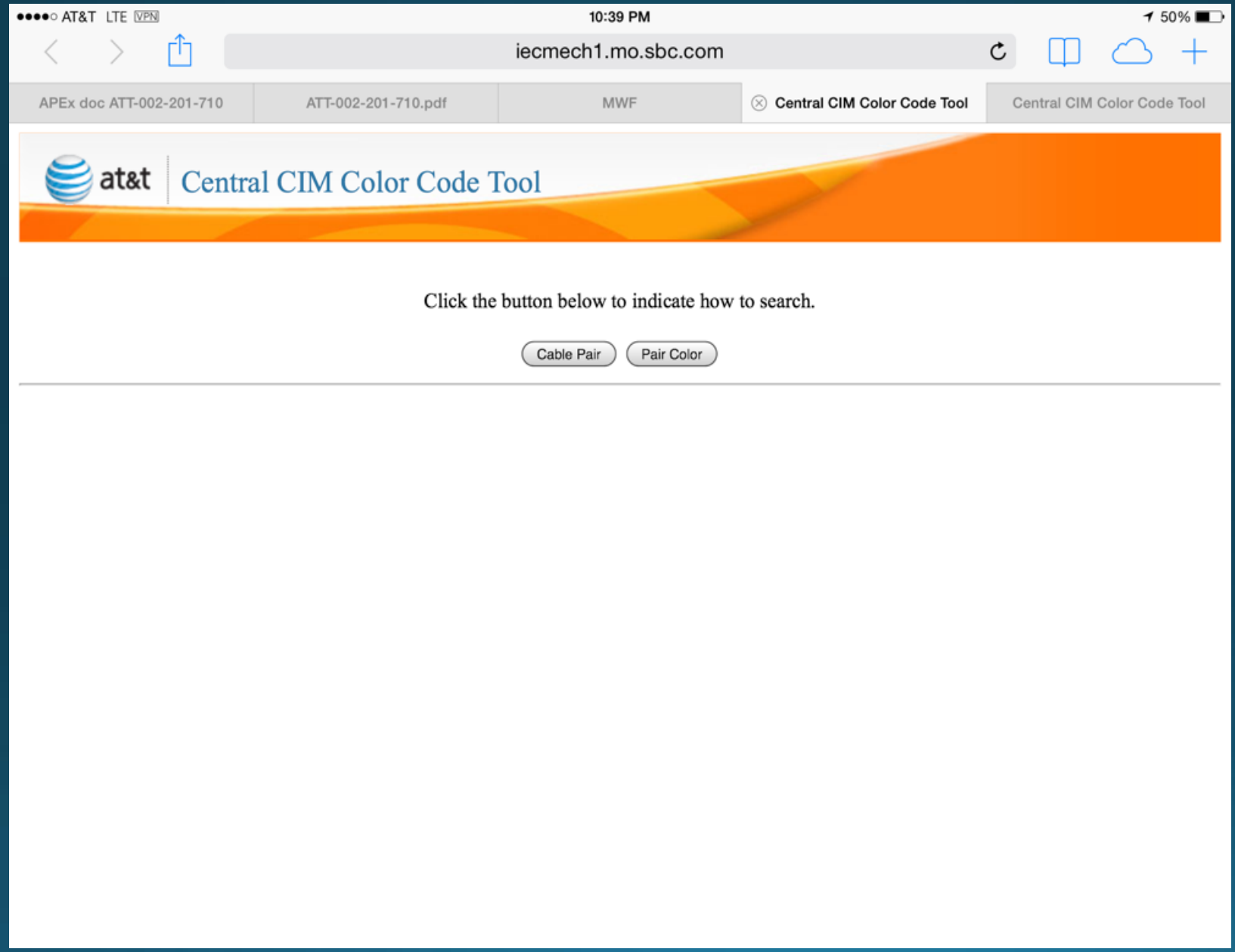


SPARE PAIRS FOR MIRROR IMAGE

PAIR NUMBER	PAIR COLORS
1	White - Red
2	White - Black
3	White - Yellow
4	White - Violet
5	Red - Black
6	Red - Yellow
7	Red - Violet
8	Black - Yellow
9	Black - Violet
10	Yellow - Violet
11	Blue - Orange
12	Blue - Green
13	Blue - Brown
14	Blue - Slate
15	Orange - Green

COLOR CODE FINDER

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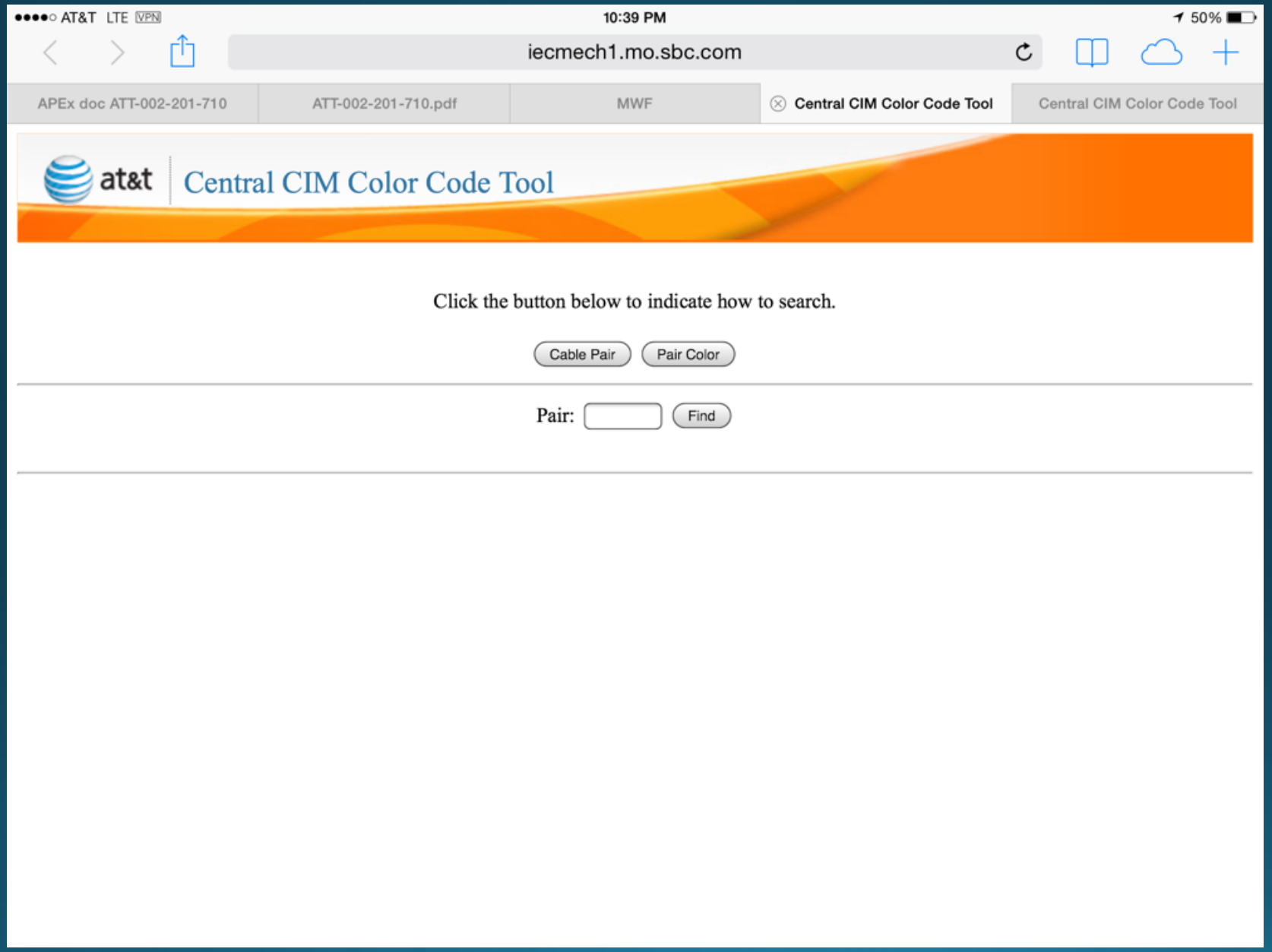
Central CIM Color Code Tool
Click the button below to indicate how to search.
Cable Pair
Pair Color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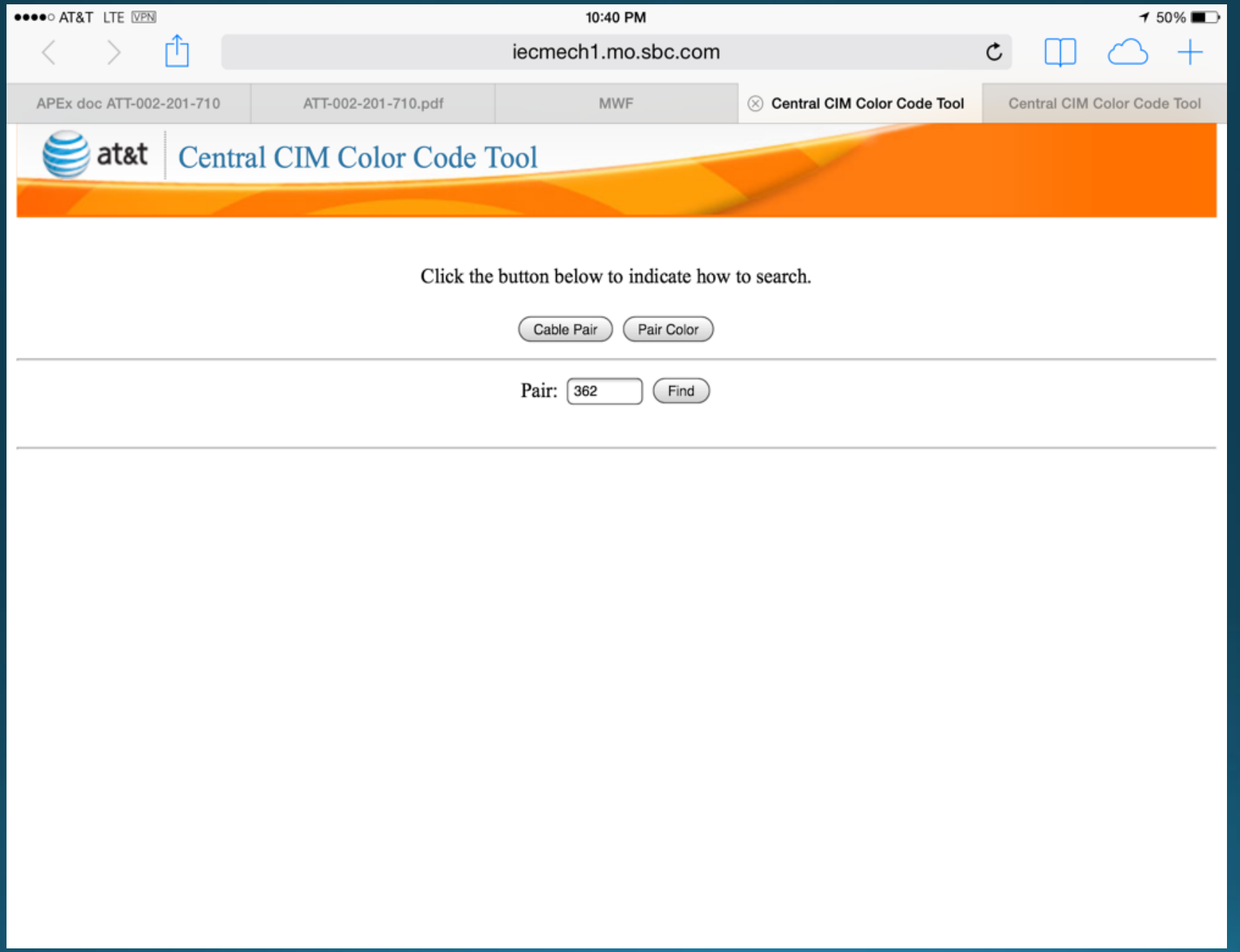
Click the button below to indicate how to search.
Cable Pair
Pair Color
Pair:
Find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Cable Pair
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Pair:
362
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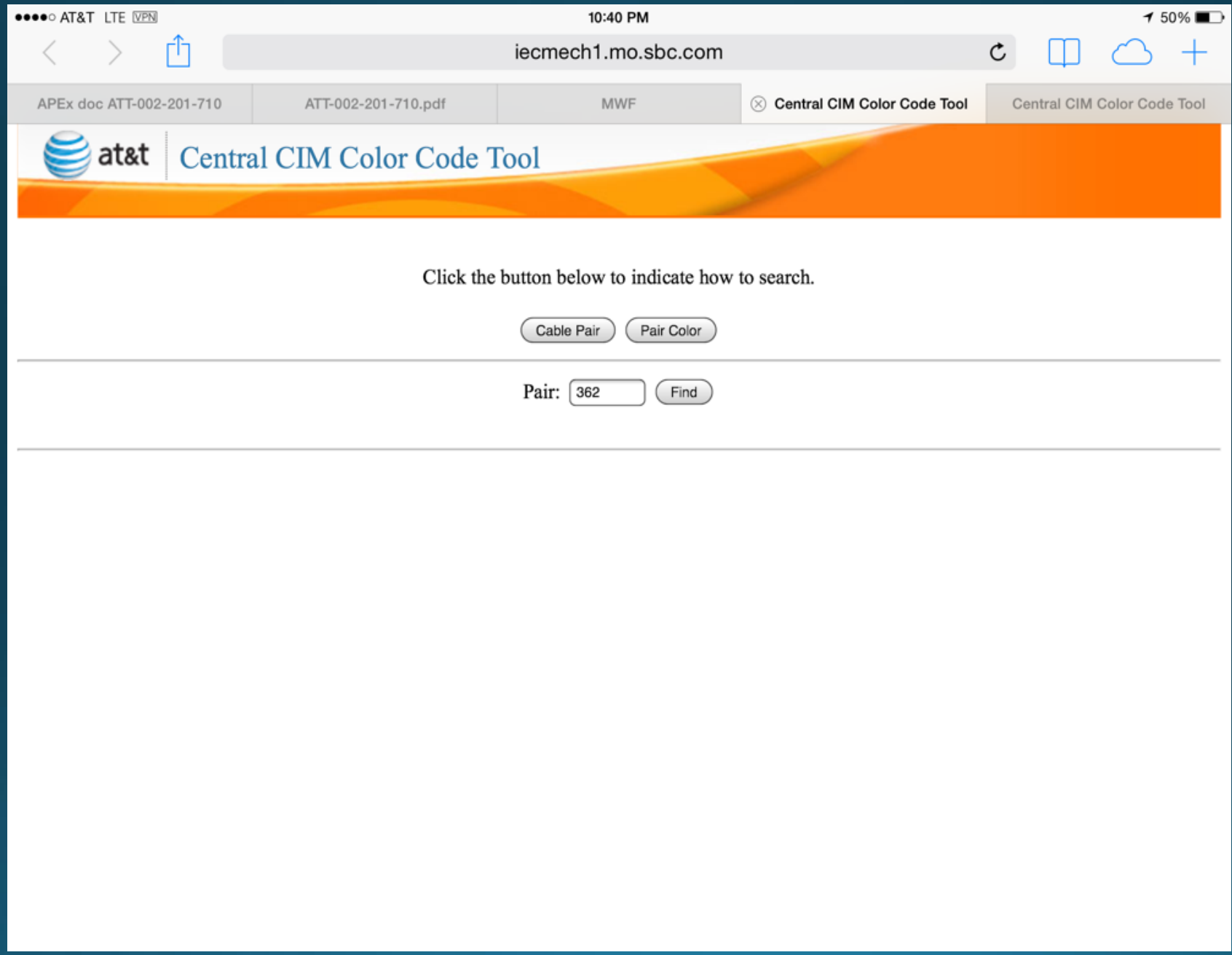
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Click the button below to indicate how to search.
Cable Pair
Pair Color
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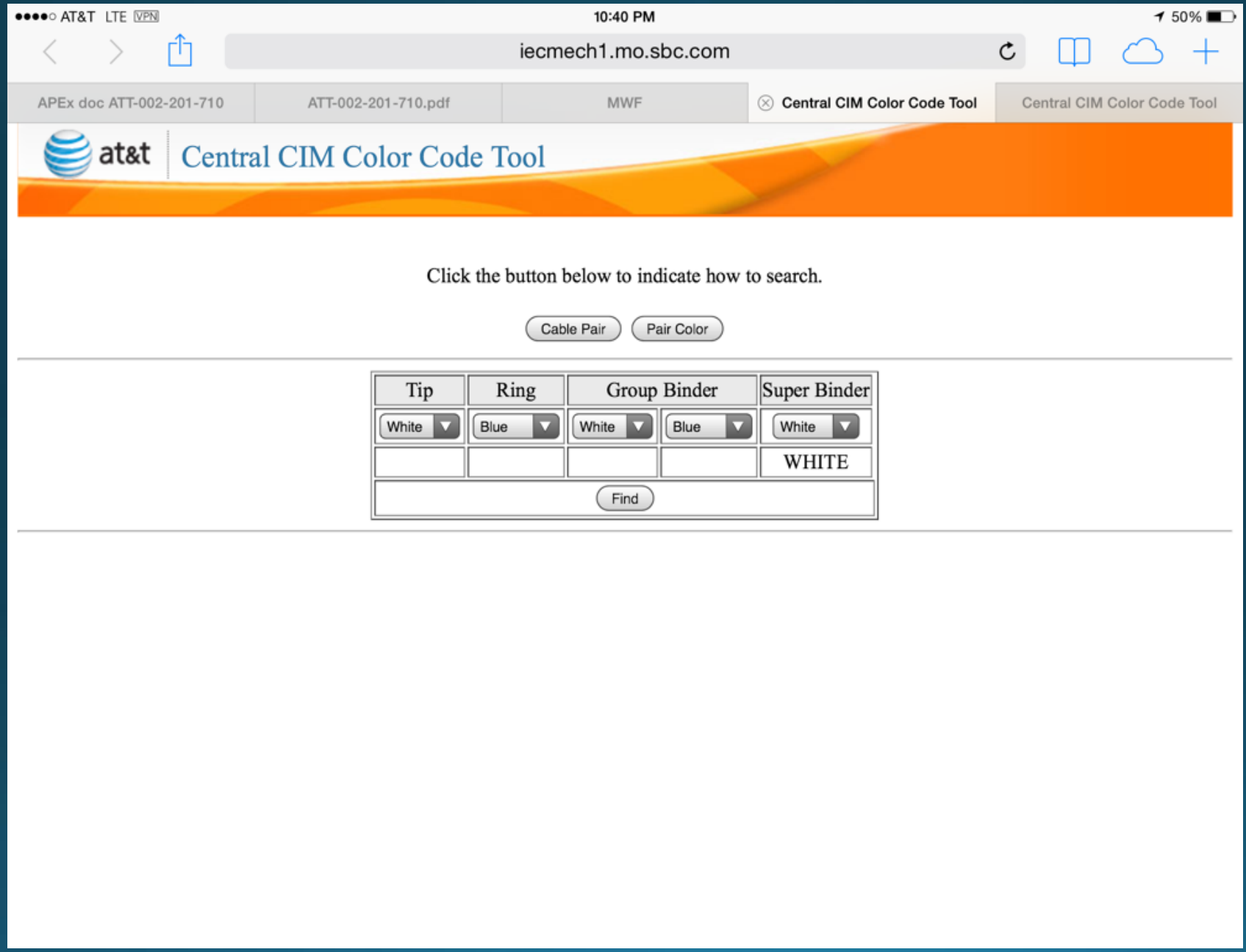
Click the button below to indicate how to search.
Cable Pair
Pair Color
Pair: 362
Find
Tip
Ring
Group Binder
Super Binder
BLACK
ORANGE
BLACK
SLATE
WHITE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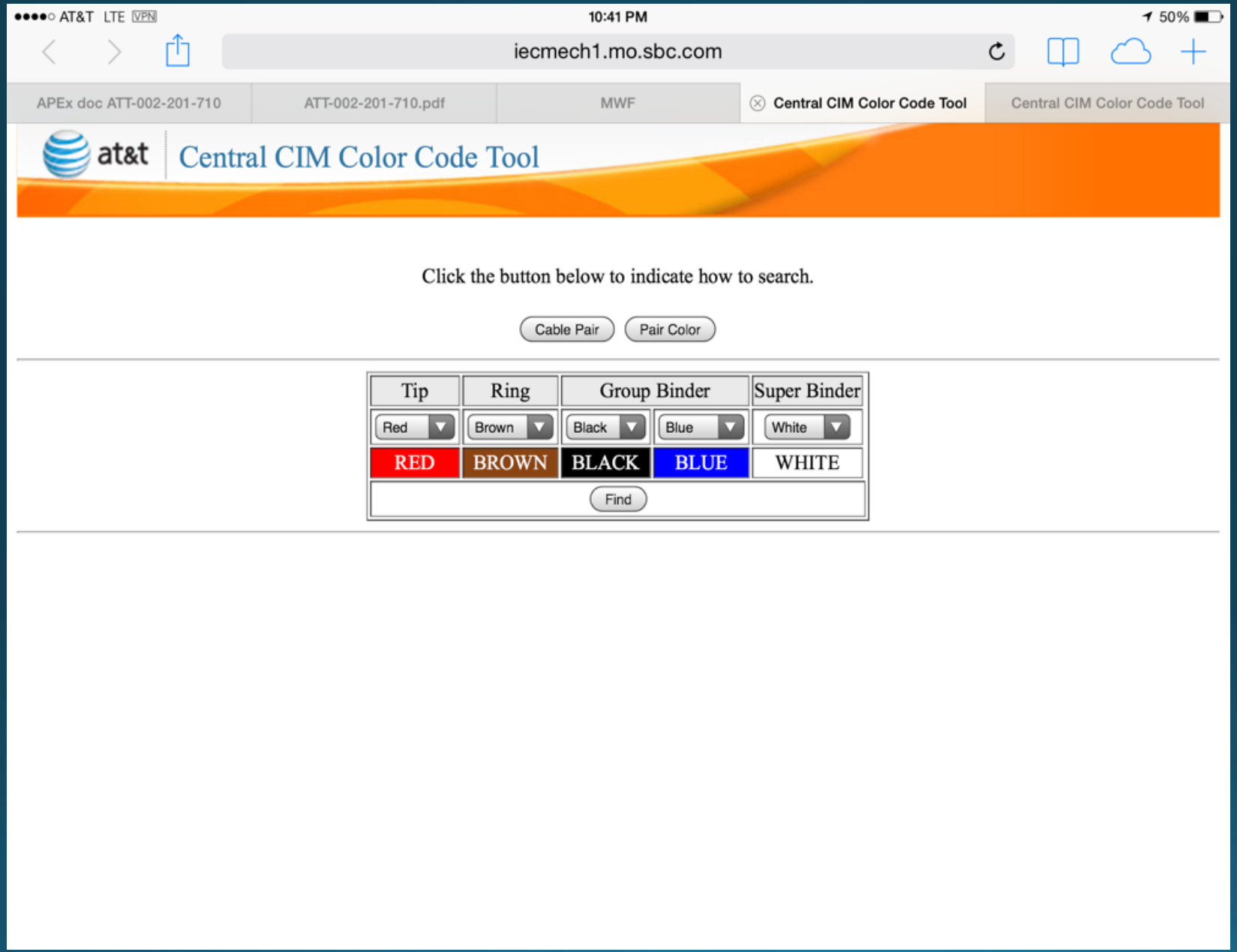
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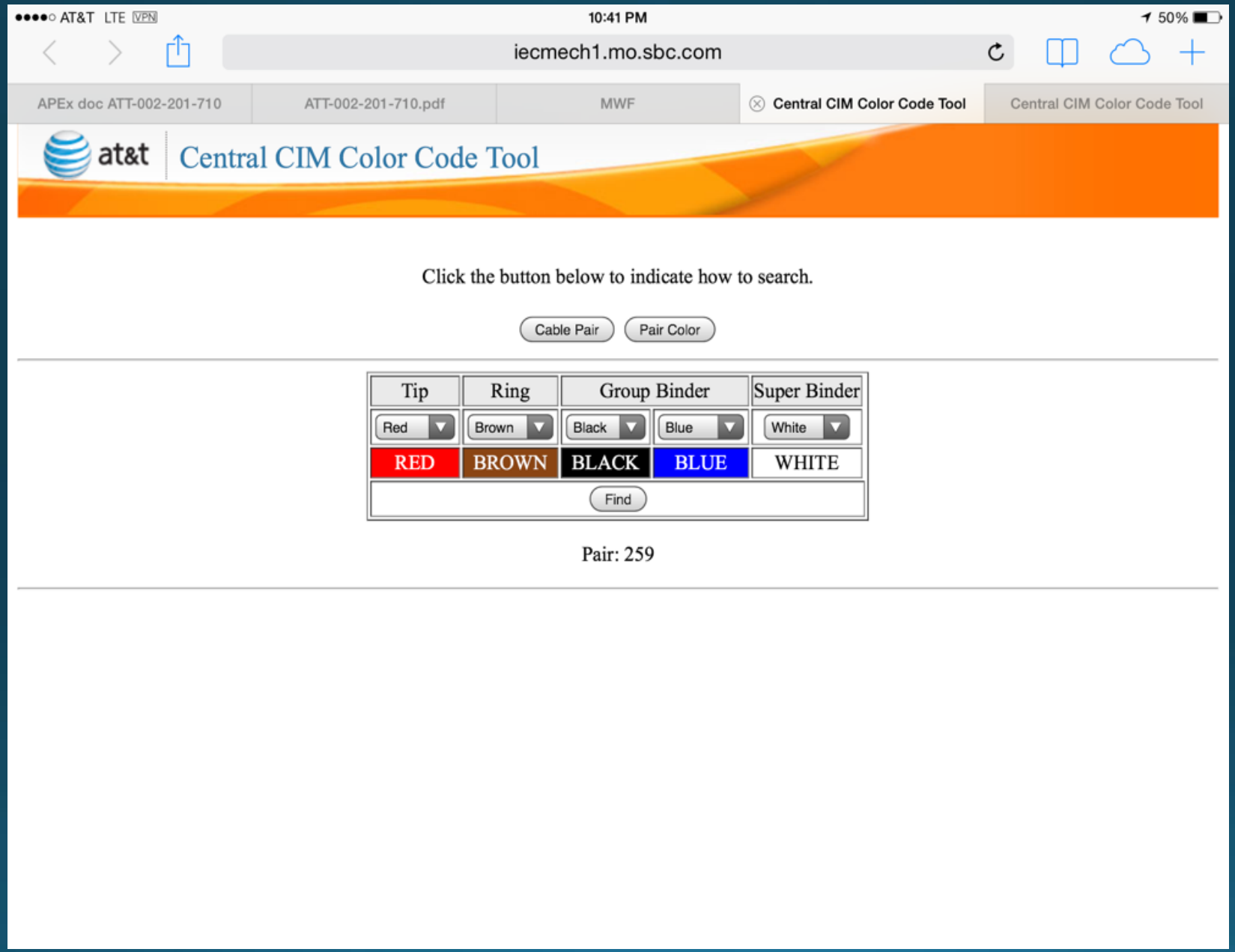
Click the button below to indicate how to search.
Cable Pair
Pair Color
Tip
Ring
Group Binder
Super Binder
Red
Brown
Black
Blue
White
RED
BROWN
BLACK
BLUE
WHITE
Find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Central CIM Color Code Tool
Click the button below to indicate how to search.
Cable Pair
Pair Color
Tip
Ring
Group Binder
Super Binder
Red
Brown
Black
Blue
White
RED
BROWN
BLACK
BLUE
WHITE
Find
Pair: 259

COLOR CODE MNEMONICS

The major group colors can be remembered with the mnemonics:

- For a 100 pair cable (i.e. the first four colors), "**W**ill **R**osie **B**ite **Y**ou?"
- "**W**hy **R**un **B**ackwards **Y**ou **V**omit"[3]
- "**W**inchester **R**ifles **B**ring **Y**ou **V**ictory"
- "**W**e **R**espect **B**eautiful **Y**oung **V**irgins"
- A code used by AT&T (and later Lucent Technologies) installers is "**W**ild **R**eal **B**londes **Y**ell **V**iolently"

The minor group colors can be remembered with the mnemonics:

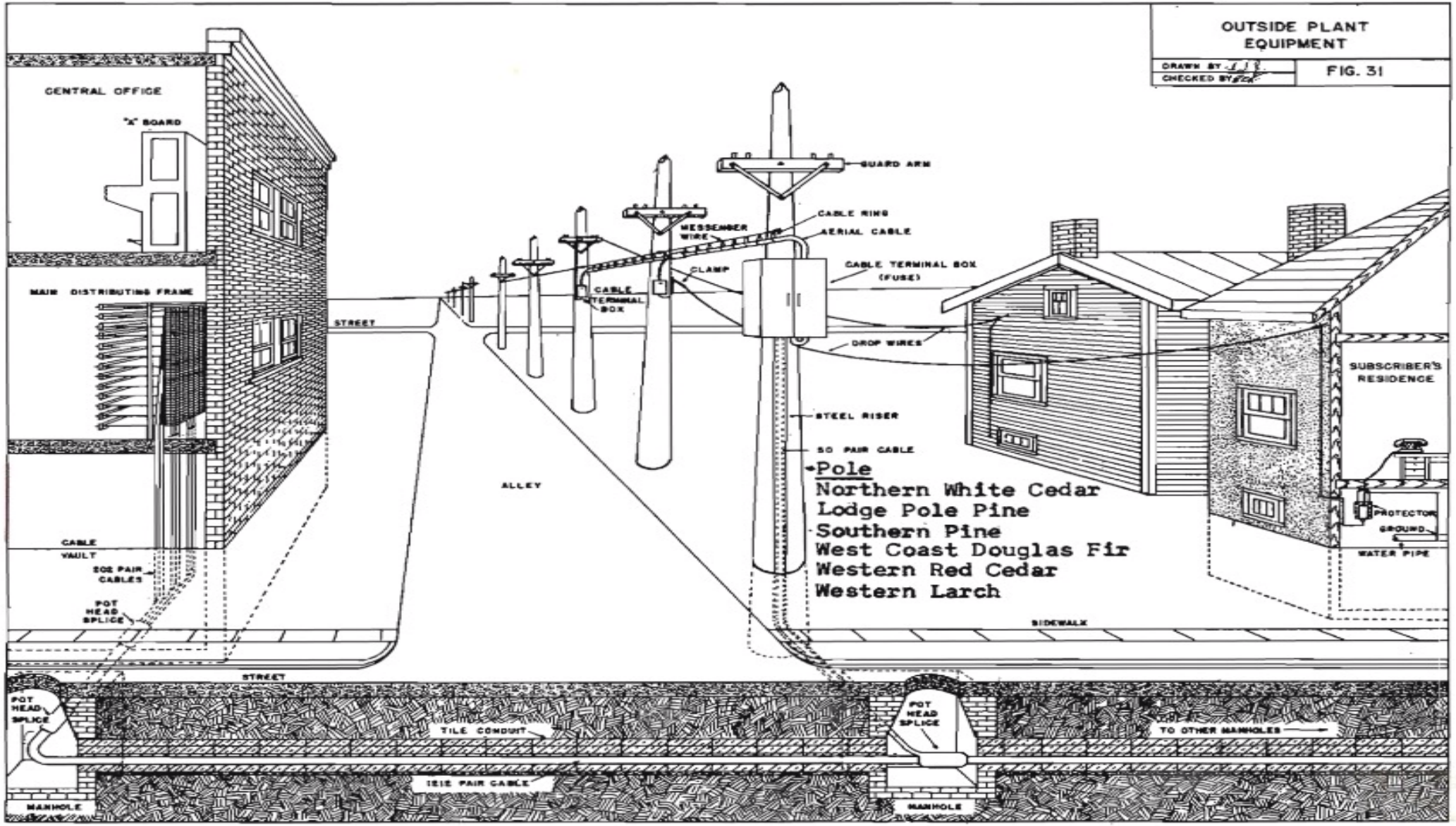
- "**BOG BrS**h" (This mnemonic is attributed[*citation needed*] to a British radio engineer, "bog brush" being a colloquial British term for a toilet brush.)
- "**B**oy **O**n **G**irl **B**rings **S**atisfaction"
- "**B**ell **O**perators **G**ive **B**est **S**ervice"
- "**B**ig **O**ld **G**orilla **B**reath **S**tinks"
- "**B**ig **O**rangutans **G**ive **B**rown **S**hits"

There is also a visual (language independent) mnemonic for the minor group colors. Imagine a sunset landscape top-down:

- The **blue** sky
- The **orange** sun
- The **green** forest
- The **brown** soil
- The **grey** bedrock

A mnemonic for both groups is "**W**e **R**ide **B**ig **Y**ellow **V**ans **B**ecause **O**ld **G**uys **B**reak **S**tuff"
or "**W**omen **R**oast **B**right **Y**ellow **V**egtables **B**ut **O**ld **G**uys **B**rown **S**teaks"

OUTSIDE PLANT EQUIPMENT



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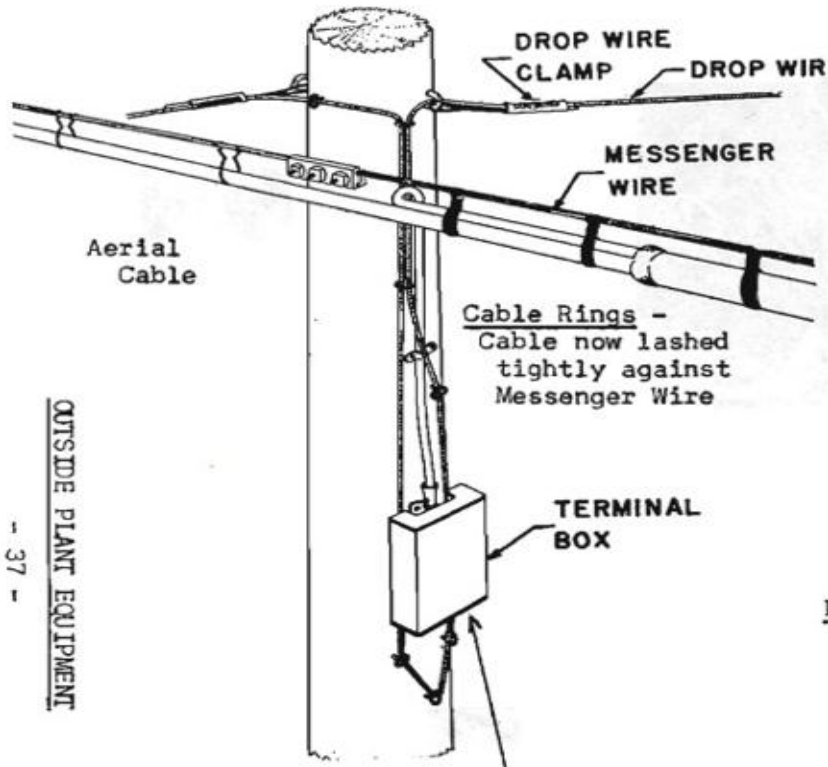
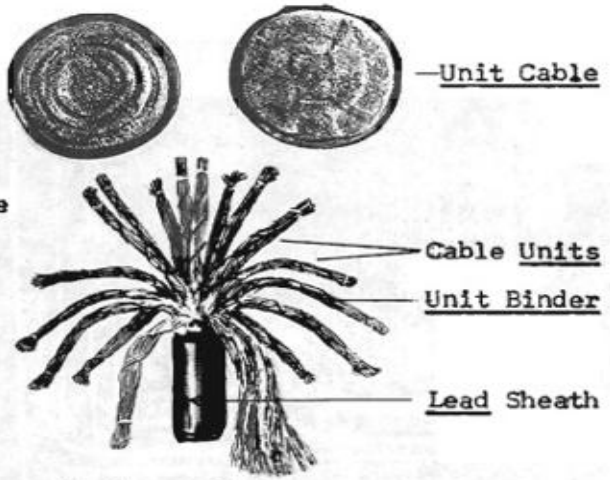


Cable Terminal (Later Type - Mounted on Cable instead of Pole.)

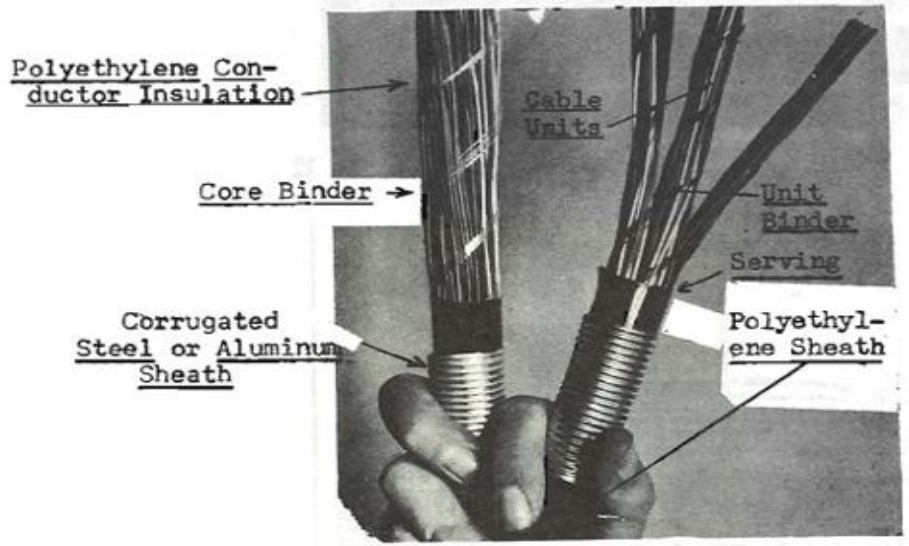
Concentric Cable — Unit Cable

Types of Exchange Cable
Lead Covered
Lepeth)
Alpeth)-From Core
Stalpeth) Outward.

Al - Aluminum
Le - Lead
St - Steel
Peth - Polyethylene.



Exchange Cable



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