

INCH-POUND

MIL-DTL-13777/3B
w/AMENDMENT 2
6 September 2022
SUPERSEDING
MIL-DTL-13777/3B
w/AMENDMENT 1
4 April 2021

DETAIL SPECIFICATION SHEET

CABLE, SPECIAL PURPOSE, ELECTRICAL
16, 17 18, 19, AND 20 CONDUCTORS

Inactive for new design after 1 June 1998.

This specification is approved for use by all Departments
and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-13777.

REQUIREMENTS:

Dimensions and configurations: See applicable figure and design data for the following cable types. The cable types are specified in table I. Design data information is specified in table II. Fillers are to be used as necessary to produce a firm, round, finished cable.

TABLE I. Cable types.

160636	S161375S	180675	S190965S	200935
S160878S	170752	180848	191110S	
161065S	170874	S190875	191140	



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TABLE II. Design data.

	Design data				
Type designation	160636	S160878S		161065S	
Figure number	1	2		3	
Total wires	16	16		16	
Number of conductors & AWG #	16/#20	8/#18	8/#18S	12/#18	4/#18 ^{1/}
Insulation					
Min average thickness	0.012"	0.015"		0.015"	
Spark test voltage	3000	3000		3000	
Inspection test voltage	1500	1500		1500	
Coaxial jacket insulation					
(a) Minimum average thickness				0.025"	
Cabling					
Layer 1	Filler	Filler		Filler	
Layer 2					
(a) Number of wires	5	6		4	
(b) AWG #	#20	#18		#18S	
(c) Maximum lay	2.0"	2.50"		3.75"	
Layer 3					
(a) Number of wires	11	2	8	12	
(b) AWG #	#20	#18	#18S	#18	
(c) Maximum lay	4.5"	5.00"		6.00"	
Sheath					
Number of layers	2	1		2	
Total thickness min.	0.109"	0.080"		0.100"	
Minimum OD cable	0.616"	0.863"		1.050"	
Maximum OD cable	0.656"	0.893"		1.080"	
Maximum weight (lbs./1000ft.)		538			

See notes at end of table.

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TABLE II. Design data – Continued.

	Design data			
Type designation	S161375S			170752
Figure number	4			5
Total wires	16			17
Number of conductors & AWG #	2/#18S	10/#18S	4/#6	17/#18
Insulation				
Minimum average thickness	0.015"		0.060"	0.015"
Spark test voltage	3000		7500	3000
Inspection test voltage	1500		2500	1500
Cabling				
Layer 1	Filler			Filler
(a) Number of wires	2			
(b) AWG #	#18 ^{4/}			
(c) Maximum lay	3.00"			
Layer 2				
(a) Number of wires	5	5	4	6
(b) AWG #	#18 ^{5/}	#18S	#6	#18
(c) Maximum lay	8.00"			
Layer 3				
(a) Number of wires				2/
(b) AWG #				#18
(c) Maximum lay				5.00"
Sheath				
Number of layers	2			2
Total thickness minimum	0.100"			0.110"
Minimum OD cable	1.360"			0.737"
Maximum OD cable	1.390"			0.767"

See notes at end of table.

TABLE II. Design data – Continued.

	Design data		
Type designation	180675	180848	S190875
Figure number	6	7	8
Total wires	18	18	19
Number of conductors & AWG #	18/#20	14/#18 4/#16	19/#18
Insulation			
Minimum average thickness	0.015"	0.015"	0.015"
Spark test voltage	3000	3000	3000
Inspection test voltage	1500	1500	1500
Cabling			
Layer 1	Filler	Filler	Filler
Layer 2			
(a) Number of wires	6	2 4	7
(b) AWG #	#20	#18 #16	#18
(c) Maximum lay			
Layer 3			
(a) Number of wires	12	12	6/
(b) AWG #	#20	#18	#18
(c) Maximum lay			5.00"
Sheath			
Number of layers	1	2	1
Total thickness minimum	0.080"	0.098"	0.094"
Minimum OD cable	0.650"	0.823"	0.850"
Maximum OD cable	0.700"	0.873"	0.900"

See notes at end of table.

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TABLE II. Design data – Continued.

	Design data			
Type designation	S190965S		191110S	
Figure number	9		8	
Total wires	19		19	
Number of conductors & AWG #	8/#18S	11/#18	7/#20	12/#20S
Insulation				
Minimum average thickness	0.015"		0.012"	
Spark test voltage	3000		3000	
Inspection test voltage	1500		1500	
Cabling				
Layer 1	Filler		Filler	
Layer 2				
(a) Number of wires	8		7	
(b) AWG #	#18		#20	
(c) Maximum lay	2.50"		4.0"	
Layer 3				
(a) Number of wires	8	3	12	
(b) AWG #	#18S	#18	#20S	
(c) Maximum lay	5.00"		8.0"	
Sheath				
Number of layers	1		2	
Total thickness min	0.080"		0.140"	
Minimum OD cable	0.950"		1.080"	
Maximum OD cable	0.980"		1.140"	

See notes at end of table.

TABLE II. Design data – Continued.

	Design data		
Type designation	191140	200935	
Figure number.	8	10	
Total wires	19	20	
Number of conductors & AWG #	19/#12	13/#18	7/#15
Insulation			
Minimum average thickness	0.020"	0.015"	
Spark test voltage	4000	3000	
Inspection test voltage	2000	1500	
Cabling			
Layer 1	Filler	Filler	
Layer 2			
(a) Number of wires	7	7	
(b) AWG #	#12	#15	
(c) Maximum lay		3.25"	
Layer 3			
(a) Number of wires	12	13	
(b) AWG #	#12	#18	
(c) Maximum lay		4.25"	
Sheath			
Number of layers	2	2	
Total thickness minimum	0.098"	0.125"	
Minimum OD cable	1.115"	0.920"	
Maximum OD cable	1.165"	0.950"	
Maximum weight (lbs/1000ft.)		540	

1/ Jacketed coaxial wires

2/ 11 & 1 filler

3/ 11 W/fillers

4/ Shield applied over twisted pair of AWG #18 – Maximum twist lay 3.00"

5/ Assembly with max lay of 3.00"

6/ 12 W/filler

Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

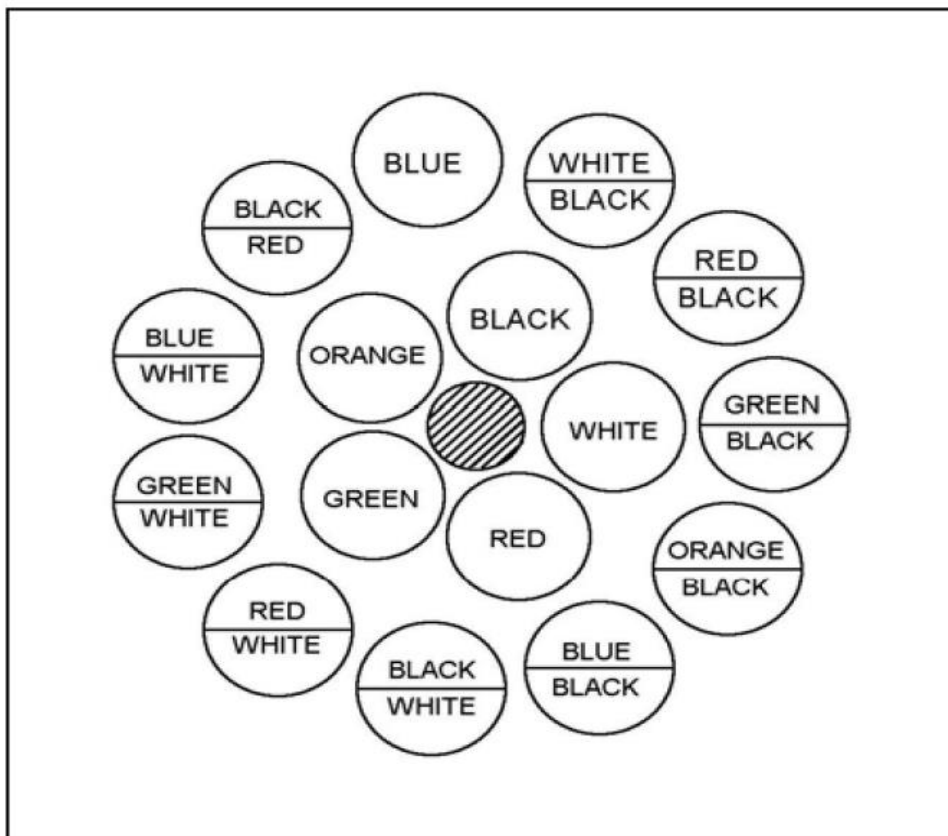
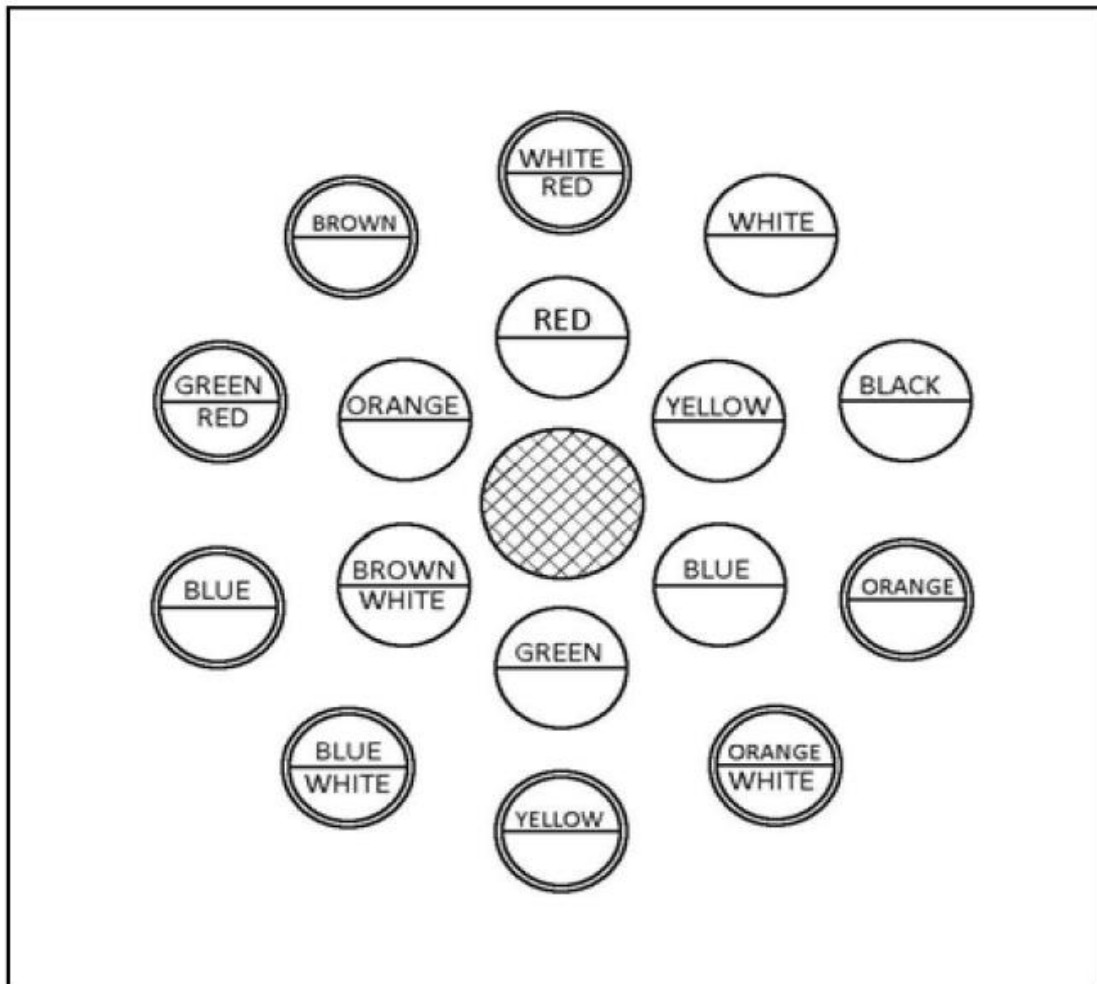
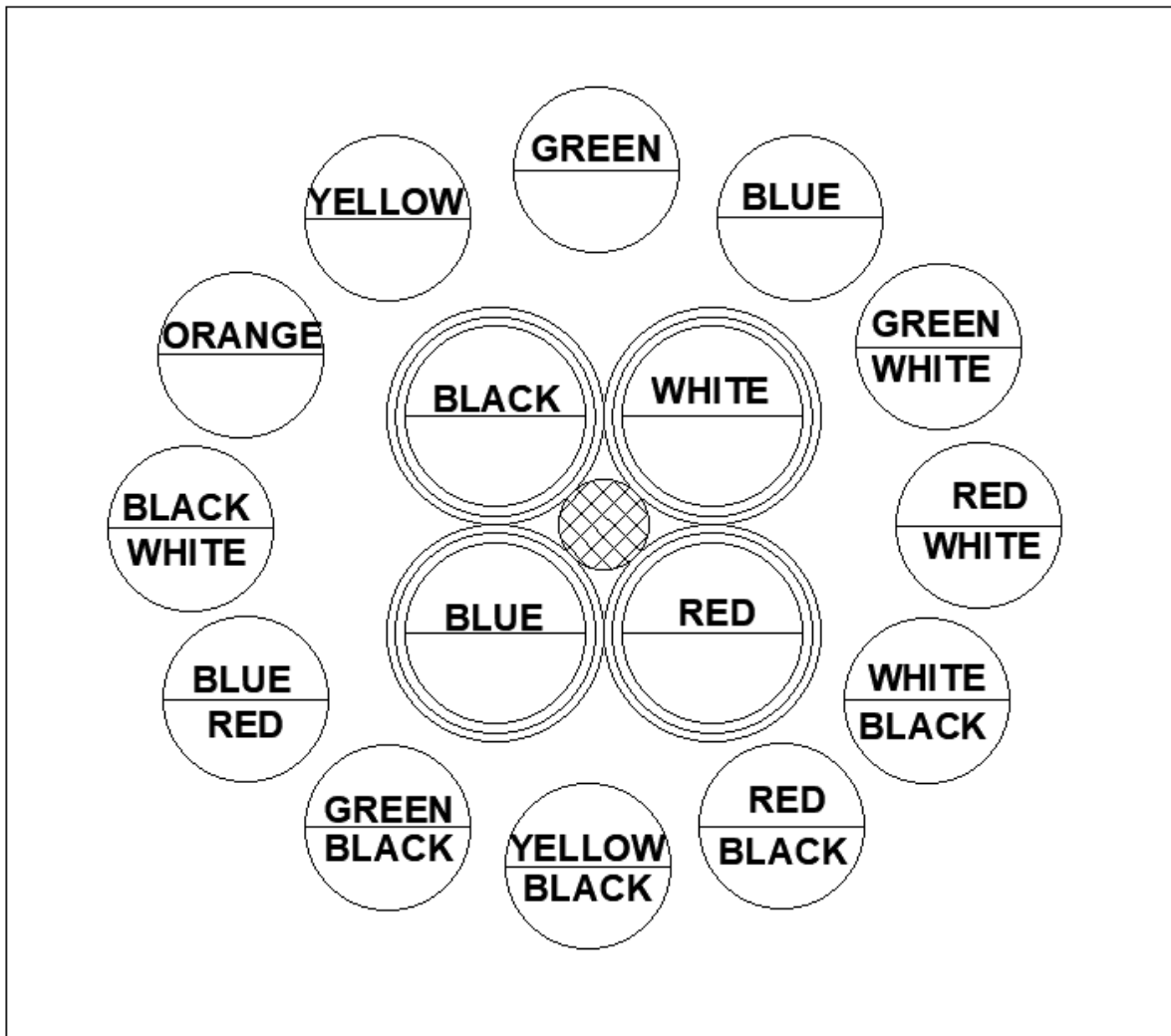


FIGURE 1. Cable type (160636).



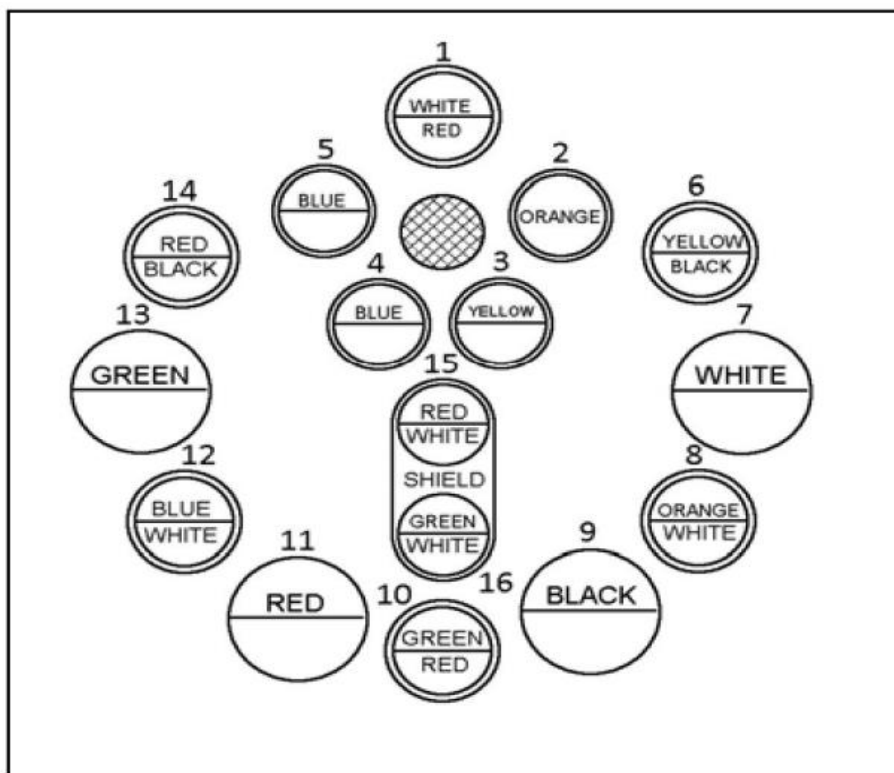
NOTE: Double circle indicates shielded conductors.

FIGURE 2. Cable type (S160878S).



NOTE: Triple circle indicates coaxials with driven shields.

FIGURE 3. Cable type (161065S).



NOTE: Double circle indicates shielded conductors.

FIGURE 4. Cable type (S161375S).

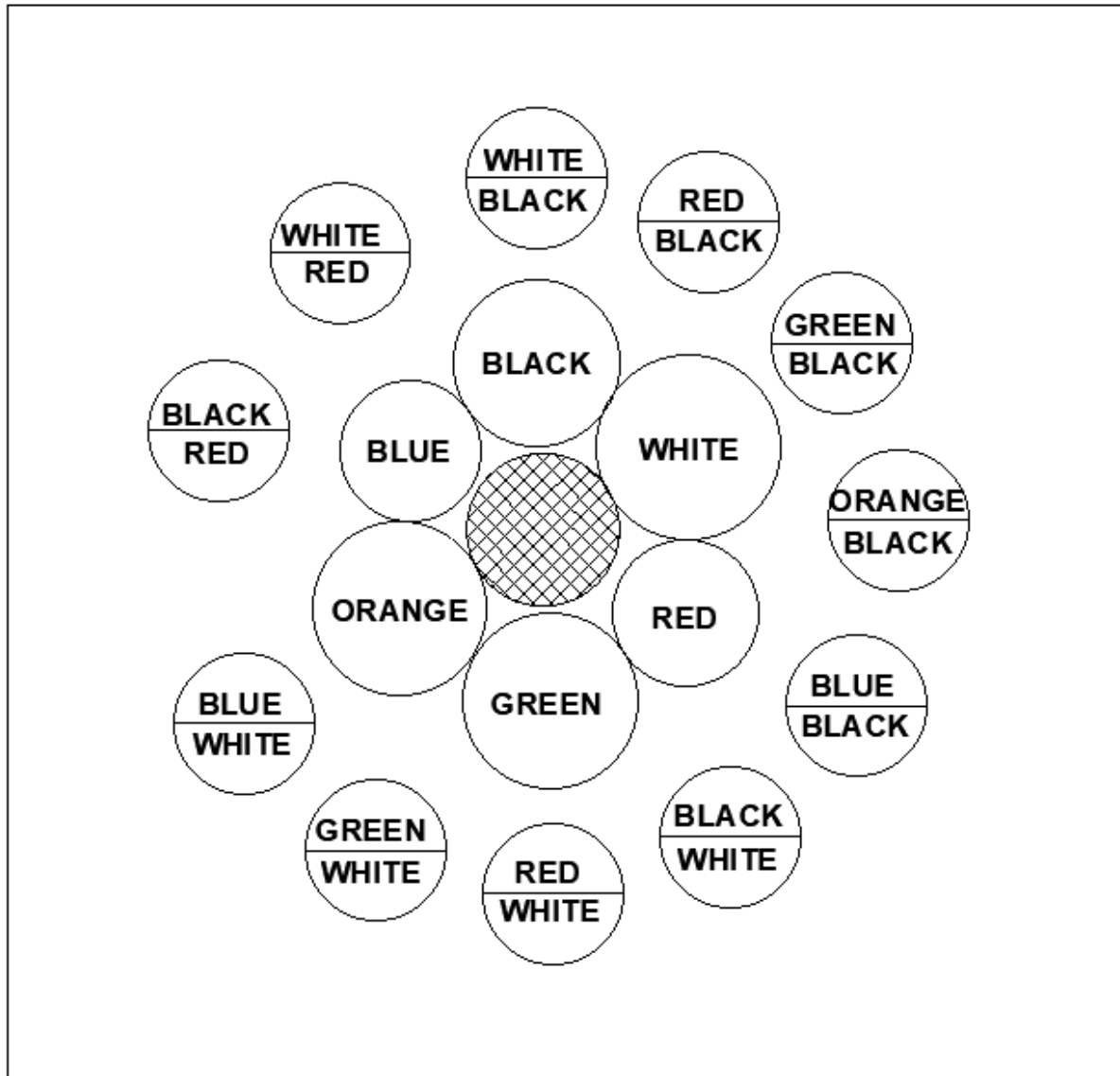


FIGURE 5. Cable types (170752, 170874).

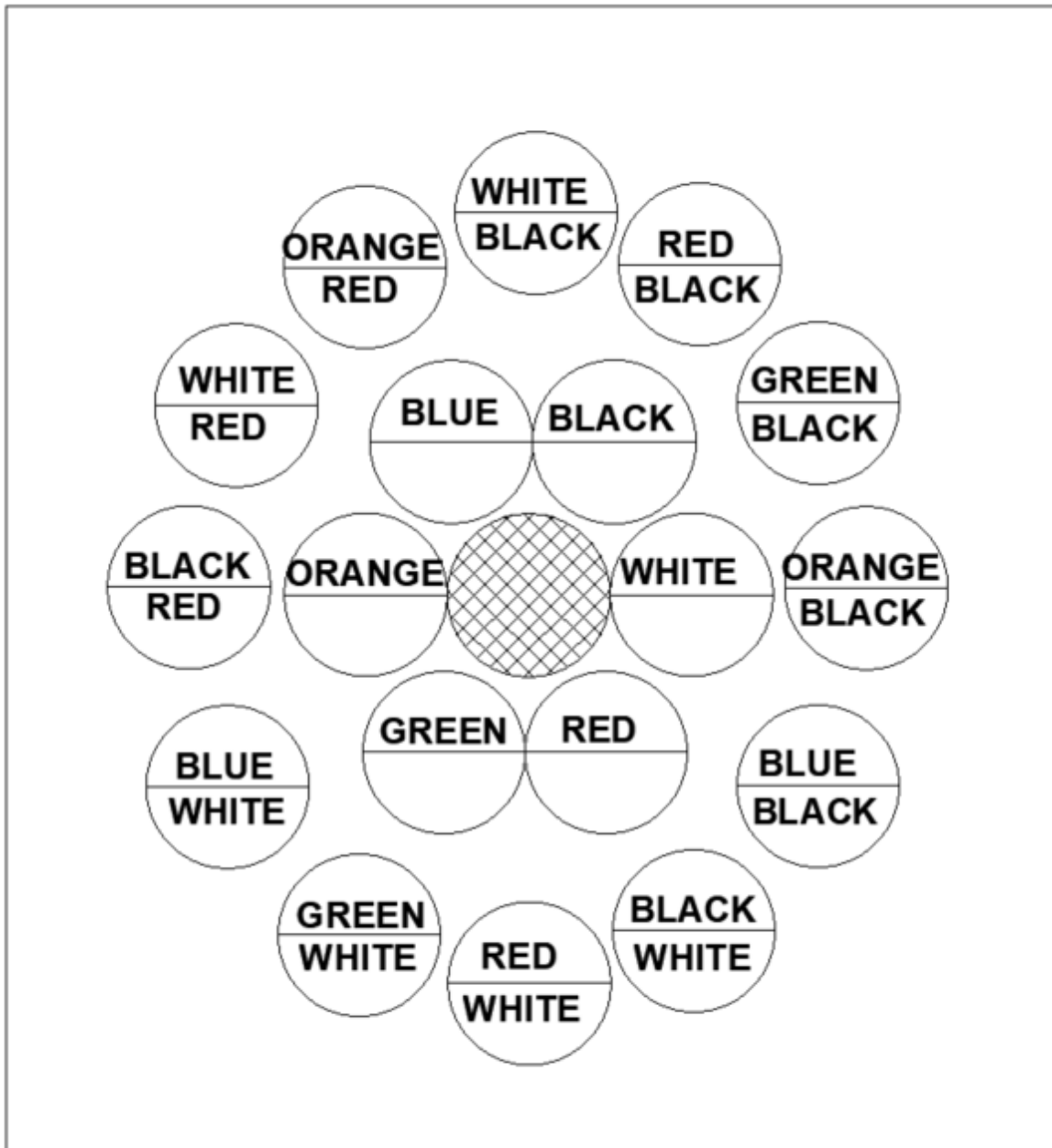


FIGURE 6. Cable type (180675).

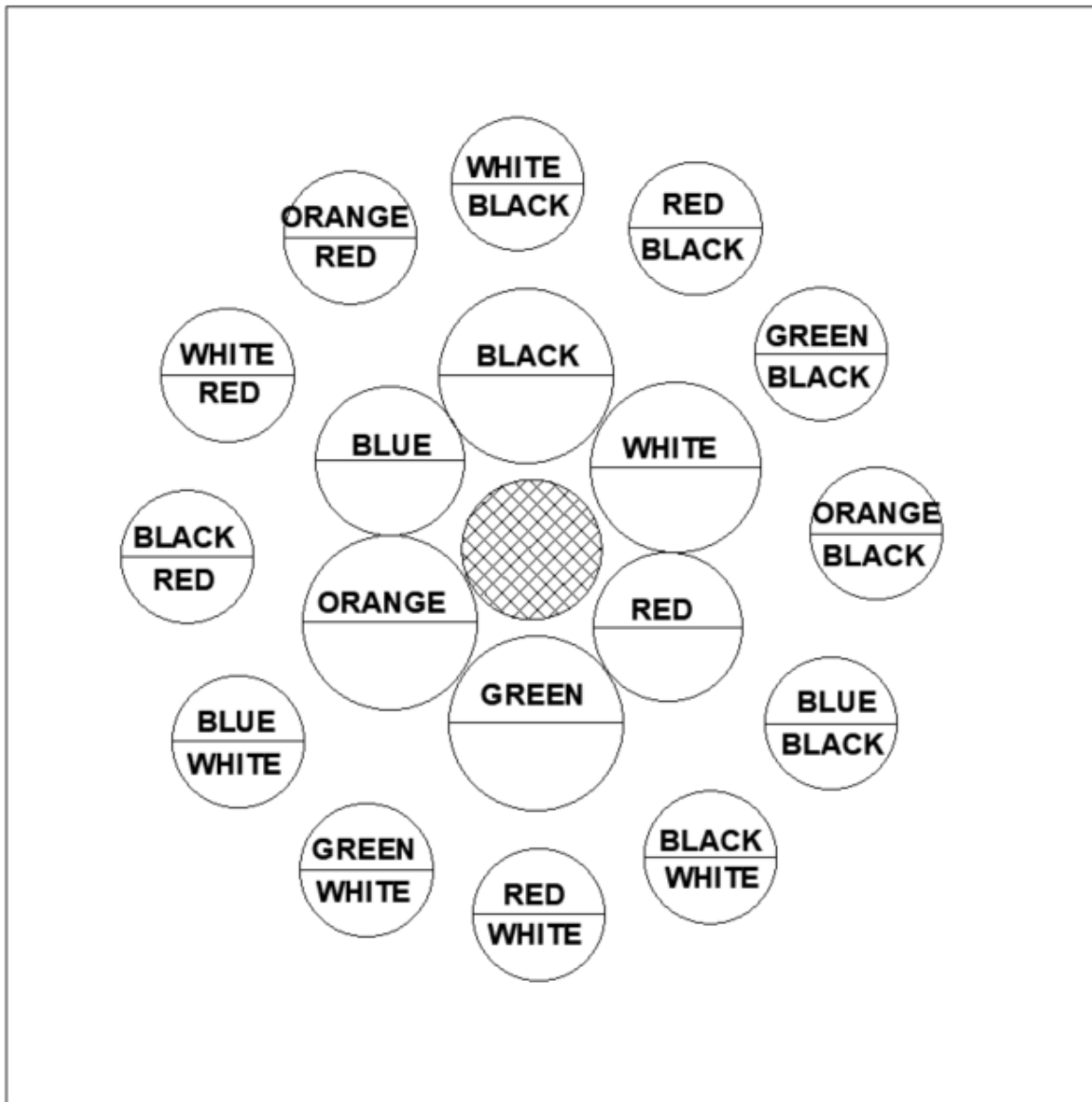
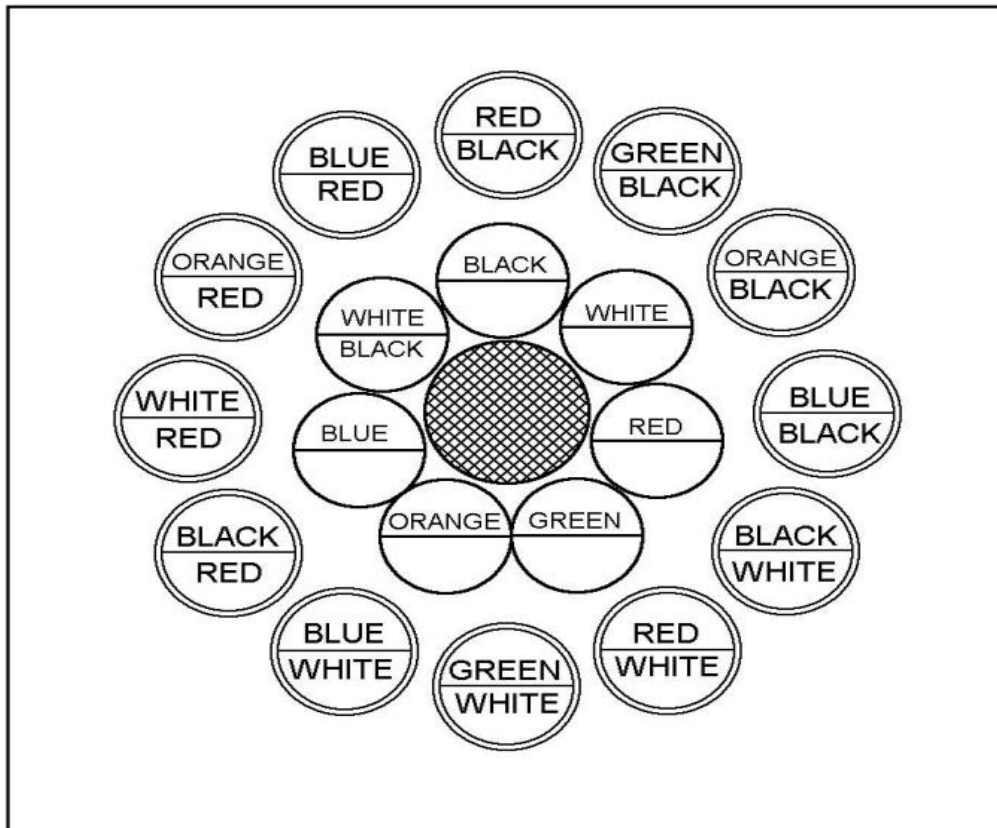
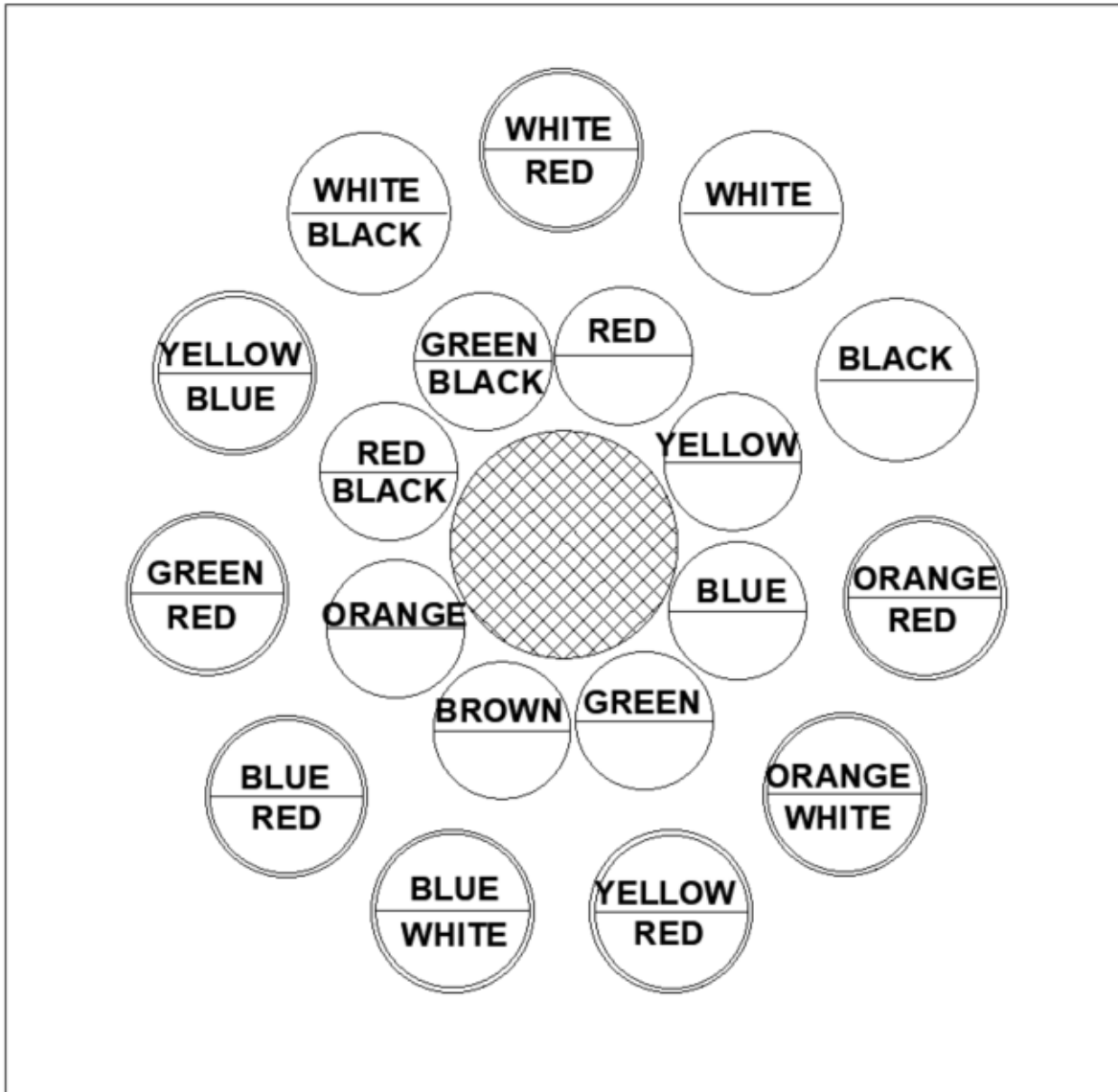


FIGURE 7. Cable type (180848).



NOTE: *Double circle indicates shielded conductors.

FIGURE 8. Cable types (S190875, 191110S*, 191140).



NOTE: Double circle indicates shielded conductors.

FIGURE 9. Cable type (S190965S).

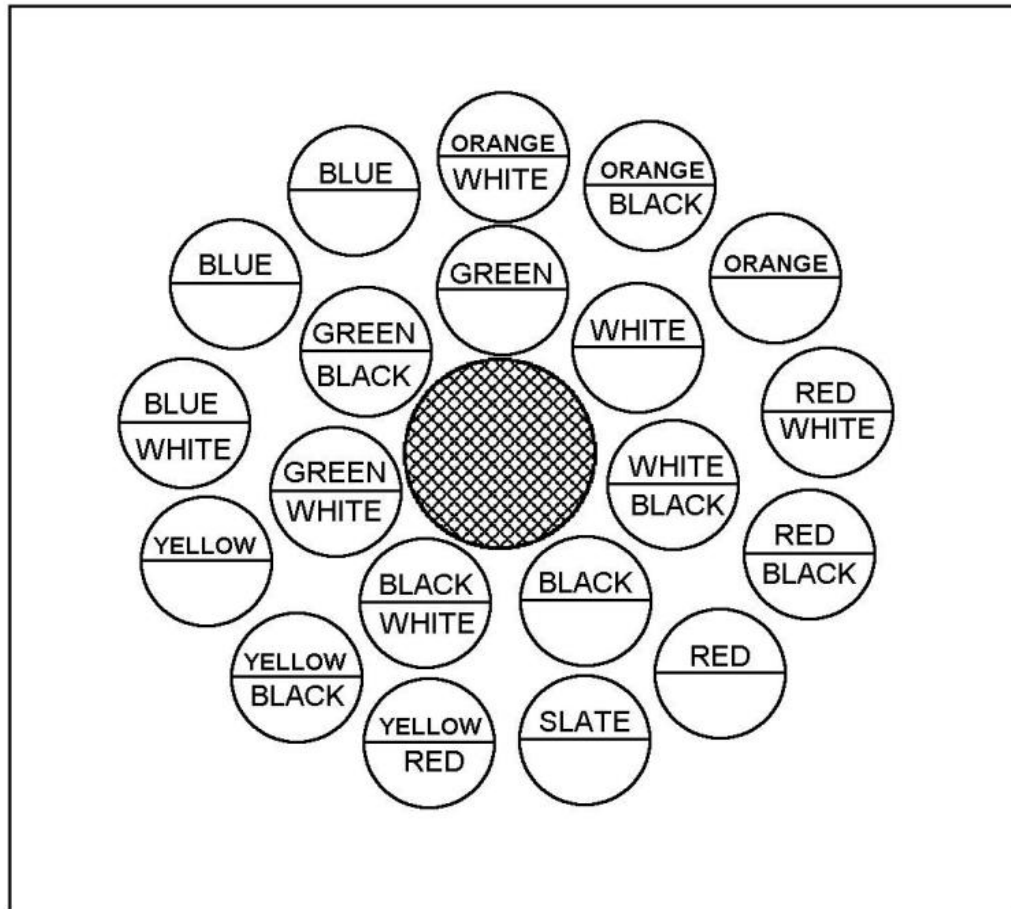


FIGURE 10. Cable type (200935).

CONCLUDING MATERIAL

Custodians:
Army – AR
Navy – SH
Air Force – 85
DLA CC

Preparing activity:
DLA – CC

(Project 6145-2022-015)

Review activities:
Army – CE, CR, MI
Navy – MC
Air Force – 19

Note: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information using the Assist Online database at <https://assist.dla.mil>.