10-3.__ INTERFACE CABLES

GENERAL

All interface cables when required to interface with other equipment as shown on the plan shall be minimum of 6 feet in length. All interface cables shall be commercially made high quality type with appropriate connectors on the cable ends as shown on the plans.

NETWORK STRAIGHT THROUGH DATA CABLE

The network straight through data cable shall be made of Ethernet twisted pair cable (ETPC) and terminated with an 8-conductor, RJ-45 modular plug on both ends. ETPC shall consist of 4 unshielded twisted pair (UTP) No. 24 AWG stranded copper conductors insulated with high-density polyethylene (PE). The insulated conductors shall be tightly twisted into individual pairs and jacketed with PE or PVC. Each Ethernet cable shall be compliant with EIA/TIA-568B Category 5E standards. The maximum DC resistance shall be 0.027 Ω/ft at 20 °C. The mutual capacitance shall be 13.65 pF/ft nominal. The characteristics impedance shall be 100 Ω ±15 percent from 1 MHz to 100 MHz.

The data cable shall be color coded as follows:

PAIR	COLOR CODE (TIP//RING)	8-position RJ-45 Modular Plug's No. (TIP//RING)
1	White/Blue Stripe // Blue	5//4
2	White/Orange Stripe // Orange	3//6
3	White/Green Stripe // Green	1//2
4	White/Brown Stripe // Brown	7//8

VIDEO PATCH CABLE

The video patch cable shall be RG-59/U coaxial cable terminated at both end with BNC connectors. The coaxial cable shall conform to:

Electrical	Coax
Capacitance (picofarads/ft nominal)	17.3
Impedance (ohms-nominal)	75
Velocity of propagation (nominal)	78 percent
Nominal Diameter (inch)	0.242

The cable attenuation at 20 °C shall measure at maximum as:

Frequency (MHz)	Nominal dB/ 100 ft
1	0.30
10	0.90
50	2.1

The coaxial cable physical measurements:

Component	Nominal O.D. (inches)
Copper center conductor	0.040
Foam polyethylene dielectric	0.146
Sealed APA tape with 0.06-inch overlap	0.216
Bare copper braid	0.241
PVC outer jacket	0.297

(APA = Aluminum polyolefin and aluminum with adhesive)

RS-232 DATA PATCH CABLE

The RS-232 data patch cable shall meet EIA RS-232 standard. The data cable shall have multiple No. 20 AWG conductors with (UL) Type CM shielded or AWM 2464 80C 300 Volts – C (UL). One end of data cable shall be terminated with a DB9 female connector. All contact socket pins shall be gold plated. The contact pin assignment is shown on the plans. The other end of the data cable shall be either terminated with an 8-conductor, RJ-45 modular plug or not terminated. When there is no connector required on the other end of cable, each conductor's insulation shall be stripped 1/4" long from the end of cable and the bare conductor shall be tinned with solder.