

### 10-3. HIGH MAST HYBRID CAMERA CABLE ASSEMBLY

The High mast hybrid camera cable (HMHCC) assembly shall consist of one RG-59/U type analog video coaxial cable, one Category 5E cable, one 3-No. 22 AWG conductor cable, one 4-No. 16 AWG conductor cable in a common outer jacket. The high mast hybrid camera cable cross-section is shown on the plans.

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      |
| Insulation Rating                   | 300V       |

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

| Frequency (MHz) | Nominal dB/ 100 ft |
|-----------------|--------------------|
| 1               | 0.30               |
| 10              | 0.90               |
| 50              | 2.10               |

The coaxial cable physical measurements:

| Component                              | Nominal O.D. (inches) |
|--|-----------------------|
| Copper center conductor                | 0.040                 |
| Foam polyethylene dielectric           | 0.180                 |
| Sealed APA tape with 0.06-inch overlap | 0.216                 |
| Woven aluminum braid                   | 0.241                 |
| PVC outer jacket                       | 0.297                 |

(APA = Aluminum polyolefin and aluminum with adhesive)

The Category 5E cable shall consist of four unshielded twisted pairs (UTP) No. 24 AWG solid copper conductors insulated with Polyolefin (PO). The insulated conductors shall be tightly twisted into individual pairs and jacketed with PVC. The cable shall have a nominal O.D. of 0.26". The cable shall be compliant with EIA/TIA-568B Category 5E standards. The maximum DC resistance shall be 0.027  $\Omega$ /ft at 20 °C. The mutual capacitance shall be 13.65 pF/ft nominal. The characteristics impedance shall be 100  $\Omega$   $\pm$ 15 percent from 1 MHz to 100 MHz. The insulation rating of each conductor shall be 300 V.

The cable shall be color coded as follows:

| PAIR | COLOR CODE (TIP//RING)        |
|------|-------------------------------|
| 1    | White/Blue Stripe // Blue     |
| 2    | White/Orange Stripe // Orange |
| 3    | White/Green Stripe // Green   |
| 4    | White/Brown Stripe // Brown   |

The 3-No 22 AWG shall be stranded 7 x 30, tinned copper insulated with 0.016" nominal wall of S-R PVC and a nominal O.D. of 0.062". The insulation rating of each conductor shall be 600 V. The 3 conductors shall be color coded as follows:

1. Red
2. Blue
3. Orange

The 4-No. 16 AWG shall be stranded 19 x 29, tinned copper insulated with 0.016" nominal wall of S-R PVC and a nominal O.D. of 0.088". The insulation rating of each conductor shall be 600 V. The 4 conductors shall be color coded as follows:

1. Black
2. White
3. Yellow
4. Green

The HMHCC assembly shall also have a 36 AWG tinned copper braid with 90 percent coverage, an O/A binder of 0.001" polyester 25 percent overlap, and an outer jacket conforming to: color to match Fed-Std-595 color #24091, material 0.035" brown PVC to 0.600" O. D. and must pass the VW-1 vertical flame test. Fillers shall be used as required to form a uniform round cable. The insulation rating of the overall cable jacket shall be 300 V. The manufacture identification shall be surface printed in white ink every foot along the length of the cable.

The HMHCC assembly shall be continuous and with sufficient length based on the pole height denoted by the pole type as shown on the plans.

The HMHCC assembly shall be factory terminated with cable connectors on both ends. Connector AMP 206036-3 with a full set crimp contact pins and strain relief back shell, AMP 206070-1 shall be installed on the cable end toward camera control unit. Connector AMP 206037-1 with a full set crimp contact sockets and strain relief back shell, AMP 206070-1 shall be installed on the cable end toward the integrated camera unit. All connector contact shall be constructed with brass contact body material and with stainless steel spring that are sub-plated with 0.000050-inch nickel and plated with 0.000030-inch gold. Contact size shall be 16.