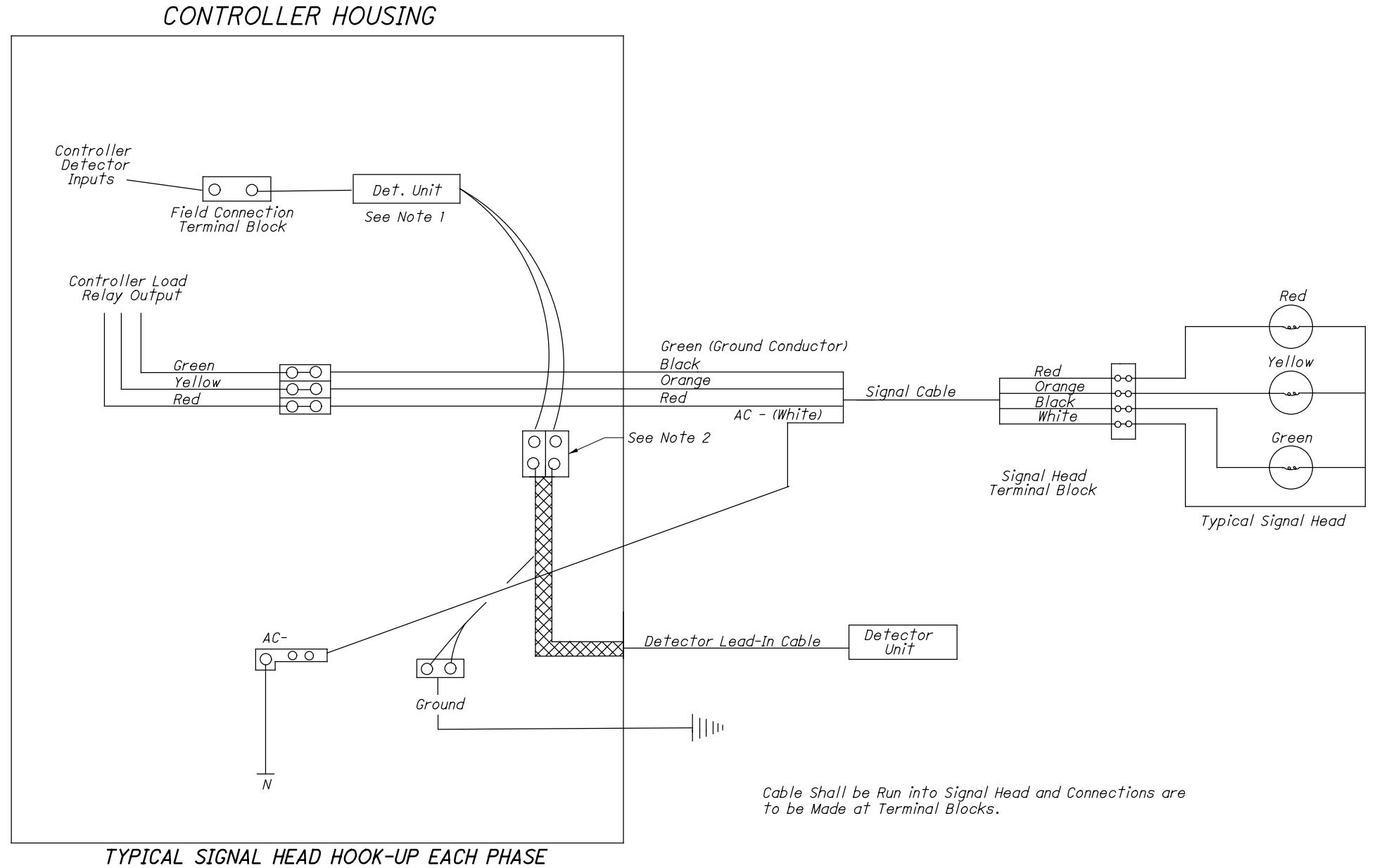


**NOTES:**

- Detection may be loop, radar, video or infra-red but shall be chosen, installed and operated to provide dependable accurate detection on each approach without false calls resulting from other traffic. Cabling shown is for loop detectors. However, suitable cable types, as recommended by the manufacturers, shall be used for other detectors.
- Surge protection, as required in CMS 733.03, shall be provided for solid state electronic controllers and detectors, and as applicable to portable signals.
- Signal cable shall be 5/c No. 14 AWG as specified in 732.19. All electrical connections to be made at terminal blocks using lock fork terminals. Splices in signal cable should be avoided but, if necessary, splice kits shall be used. All connections at splice points shall be soldered.
- Typical use of conductors is as shown below. The green conductor in signal cables (conductor No. 4) shall not be used to supply power to a signal indication. It will be connected to the signal body as an equipment ground in aluminum heads and it will be unused in plastic heads. Unused conductors shall be grounded in the cabinet.
 

Conductor No.	Color	Vehicle Signal
1	Black	Green ball
2	White	AC neutral
3	Red	Red ball
4	Green	Equip. ground
5	Orange	Yellow ball
- Signal timing settings shall be as shown in the plans or provided to the Contractor by the Engineer prior to implementation of signal control. The Contractor shall periodically monitor the signal operation to determine failure or inefficient operation.
- All equipment failures including timing mechanisms and detectors shall be reported to the Engineer and fully repaired by the Contractor as soon as possible, but in no case longer than four hours following notification of the Contractor by the Engineer. All failures resulting in unsafe operations of the signal (i.e., signal or lamp failure, short-timing of yellow or all red intervals, mis-aimed signals, conflicting displays) shall result in the Contractor using 2-way radios to control traffic through the work area until the signal is fully repaired. Failures shall include situations caused by crashes, acts of nature or any other cause whether under the control of the Contractor or not.
- If the Engineer determines that the signal operation, although in accordance with the plans and previous orders, is not providing acceptable safe and efficient movement of traffic, the Engineer shall order that appropriate changes such as timing alterations, signal or detector relocations, etc. be made to remedy the situation, at no additional cost to the State. Timing changes and signal relocations shall be implemented within four hours, detector relocations and changes within 24 hours. Failure to make required changes within these limits shall result in the non-payment for Item 614 Maintaining Traffic for each day in which such non-compliance exists at any time during such day.



**TYPICAL SIGNAL HEAD HOOK-UP EACH PHASE**

Cable Shall be Run into Signal Head and Connections are to be Made at Terminal Blocks.