Broward County Signalization Design Requirements

03/14/2025

Item Description	Requirement
No. of Conduit Runs at Signalized Intersection	4 conduit runs min. at each approach (signal, video, 2 spare). 2 spares must remain available and open at construction acceptance. 2 spare conduits must be provided at all new mast arm bases.
No. of conduit runs for Interconnect (fiber & copper)	Minimum of 3 runs of 2" conduit with proper entry angles for bending radius required.
Interconnect pull box spacing (fiber optics)	Pull boxes to be spaced at 1000' intervals.
Interconnect pull box spacing (copper)	Pull boxes to be spaced at 500' intervals.
Controller Cabinet orientation	Door to open away from intersection wherever feasible and located on departure side on minor street.
Signal Head Location and Orientation	Use horizontal orientation only. Vertical orientation allowed on case-by-case basis. Space all signal heads on a single approach equidistant from each other. One signal head per through lane. Articulated signal brackets are to be called out when orientation of mast arm is not perpendicular to approach. Add nearside signal head when far side assembly is greater than 180' from approach stop bar. Minimum vertical clearance of 17.5' to bottom of signal head assembly and/or any equipment located over travel ways.
Signal Head Accessories	Provide tunnel visors on all indications. Use backplates with retroreflective borders on all approaches
Pedestrian Signal pedestal pole	Use only when mounting pedestrian signals on upright signal pole does not meet distance requirements of Section 4E of MUTCD.
Countdown Pedestrian Signals	Prefer to mount on upright pole. Location must follow Section 4E of MUTCD so visibility is not compromised.
Inductive Loop Detectors	Only for damaged loop replacement.
Pull boxes (standard & fiber)	All standard pull boxes shall be stamped "TRAFFIC SIGNAL" and all fiber boxes shall be stamped "TRAFFIC FIBER OPTICS". Separate pull boxes are required for both video detection and for the spare conduits. One standard box per spare conduit. No pull boxes within 4' of the face of the curb return. Pull boxes shall not be located within any sloped portion of accessible curb ramps.
Pull Box Removal	Provide location and number of interconnect and standard pull boxes to be removed.
Controller Cabinet Location for Projects Without New Interconnect	Provide new controller cabinet assembly on the existing base of old controller cabinet to not have to replace any interconnect runs. Modify existing base dimensions as required.
Controller Cabinet Location for Projects with New Interconnect	Sunshields on the top and south faces are required.
Video Detection (for mast arm intersections)	When using one camera, place it on the lane line between the inboard through lane and left turn lane. Approaches with more than 4 lanes require two cameras per approach. Count bike lane as 1/2 lane. When using two cameras, place one between the left lanes and other to cover the through lanes. Requests to use one camera for more than 4 lanes will be reviewed on a case-by-case basis.
	All installed video vehicle detection systems, regardless of type, must pass the accuracy testing specification outlined in Section 660.4.1 and 660.4.2 (if applicable) of FDOT standard specifications (See below). County staff reserves the right to not accept if accuracy diminishes or fails during its burn-in/acceptance period. Contractors are to be advised that they are proceeding at their own risk if they choose to install systems with less accuracy than others, and they will not be accepted if accuracy requirements are not achieved. Please advise the contractors that they will be required to submit the accuracy test videos and summary documentation as part of the as-built package submitted prior to initial signal inspection.

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Item Description	Requirement
Video Detection (for mast arm intersections) (cont.)	**FDOT Standard Specifications Section 660-4 Acceptance Testing.** **660-4.1 Vehicle Presence Detection System:** **660-4.1.1 Performance Requirements:** Ensure presence detectors provide a minimum detection accuracy of 98%. **660-4.1.2 Field Acceptance Testing:** Verify presence detection accuracy at installed field sites using a reduced method in accordance with 995-2.9. Compare sample data collected from the detection system with ground truth data collected by human observation. For site acceptance tests, collect samples and ground truth data for each site for a minimum of five minutes during a peak period and five minutes during an off-peak period. For presence detection at intersections, ensure there are a minimum of three detections for each signal phase. Perform site acceptance tests in the presence of the Engineer.
Remove Existing Signal Interconnect Cable	Existing interconnect cable must be removed when new cable is being installed.
Pedestrian Detector	Post-mount preferred. Location and placement must conform to current ADA requirements. Include FTP-68B-06 Pedestrian sign panel. Accessible detectors to be used at all new construction and newly reconstructed intersections on County and City roadways. Consult with FDOT requirements for intersections on FDOT roadways.
Electrical Power Service	Locate disconnect mounted on stub pole within 50' of power source. If distance from stub pole to control cabinet is greater than 250', add a second stub pole and service disconnect with a lower breaker rating adjacent to controller cabinet as per FDOT Standard specifications. Utilize two pull boxes at service point, one for load side and one for line side.
Interconnect Cable	Fifty feet of spare cable to be installed in each pull box. The pull box at end of a fiber run must have 100 feet of fiber cable in it, for future splicing.
Controller Cabinet Size (ADA concerns and right of way limitations)	Specify a reduced depth cabinet when the min. ADA clearance cannot be met with a standard Type VI cabinet.
Mast Arm Orientation	Mast arms to be perpendicular to approach. Diagonal mast arms are not permitted, unless granted a design exemption by BCTED.
Mast Arm Location	Mast arms must meet clear zone requirements. Assemblies are not permitted in the median.
Illuminated Overhead Street Name Signs	Design shall be in accordance with latest MUTCD and FDOT guidelines. When structurally possible, all single name street name signs shall use a minimum 12-inch upper case and 9-inch lower case lettering. Dual name street name signs shall use a minimum 8-inch upper case and 6-inch lower case lettering for the primary street name and 6-inch upper case and 4.5-inch lower case lettering for the secondary street name.