

CITY OF SUFFOLK TRAFFIC SIGNAL PLAN NOTES

A. General

A1. All traffic signal work shall be designed, constructed and installed in accordance with the City of Suffolk Public Facilities Manual; the City of Suffolk Traffic Signal Controller Cabinet Specifications, dated 2015; the Virginia Department of Transportation (VDOT) Road and Bridge Specifications, dated 2007; the VDOT Road and Bridge Standards, dated 2008; the Manual on Uniform Traffic Control Devices (MUTCD); dated 2009; the Virginia Work Area Protection Manual, dated 2011, with any revisions; and the 2011 National Electric Code.

A2. The contractor shall contact Miss Utility for utility locations 48 hours before beginning construction (1-800-552-7001).

A3. The contractor shall submit shop drawings and/or catalog cuts for the mast arm pole, foundation design, controller, controller cabinet and signal heads with hardware to the developer's traffic engineer. Approved copies shall be supplied to the City Traffic Engineer's representative.

A4. No work shall commence with the exception of the soil survey for the foundations until all submittals required are received and reviewed by the City Traffic Engineer's representative.

A5. A traffic signal inspection fee must be paid at least thirty (30) days prior to beginning construction. A fifteen (15) day notice is required to schedule inspection service prior to any construction beginning.

A6. Signal timings shall be developed by a Professional Engineer (P.E.) licensed in the State of Virginia. The contractor shall be responsible for programming signal timings into the controller upon review and approval by the City Traffic Engineer.

A7. The contractor shall be responsible for operation of the signal and its components from the time work commences until such time as the 30-day test period has been completed and the signal has been accepted by the City. The contractor shall respond to emergency repair notifications within two (2) hours.

A8. The 30-day test period shall begin only after items shown on the City punch list have been completed. See Appendix 3.3 of the City Specifications for punch list requirements.

A9. Upon completion of the traffic signal, the contractor shall submit to the City Traffic Engineer's representative accurate and to scale as-built traffic signal plans. The as-builts shall be supplied in both a printed format and electronic formats using AutoCAD 2007 or later.

B. Signal Poles, Foundations, Controller Cabinet and Equipment

B1. Mast arm pole foundations shall be VDOT Standard PF-1. The contractor shall be responsible for securing soil borings and reviewing the elevations for the top of the foundations. A foundation design shall be prepared and submitted for approval by a Professional Engineer licensed in Virginia. The elevation of the top of the foundation shall be within 4"-6" above the finished ground grade. If existing conditions do not allow for the use of a VDOT Standard PF-1 Foundation, notify the City Traffic Engineer's representative.

B2. The contractor shall stake signal pole locations and verify mast arm lengths with the City Traffic Engineer's representative prior to drilling foundations. Contact Robert Lewis at (757) 514-7603 for verification.

B3. The Controller shall be a Peek ATC 1000 - or - McCain ATC eX NEMA TS2 unit. See City website for specifications.

B4. The Controller Cabinet shall be no less than 54" high, 44" wide and 24" deep and shall be large enough to provide for ease of maintenance to the controller and auxiliary equipment. The cabinet shall be wired in accordance with City Specifications. The foundations shall be VDOT CF-1.

B5. Pole foundations, poles, and mast arms shall be designed to accommodate the load shown on these plans.

B6. All signal pole and controller cabinet foundation ground rods shall be placed in the nearest junction box. The electrical service ground rod shall be placed in a JB-2 junction box and shall be in conformance with City specifications (see City website).

B7. Pedestrian push buttons are to be located on the mast arm poles. If the push buttons are farther than 3' from the nearest sidewalk, then additional sidewalk shall be added to provide access for wheel chairs. The Polara "Bulldog" push button shall be used.

B8. Traffic mast arm poles shall conform to the VDOT MP-1. All hardware shall be galvanized. Mast arm poles numbers ____ and ____ shall be ____' high combination poles with single ____' luminaire arms on each pole. A minimum 15' clearance shall be maintained between the highest point in the pavement surface to the lowest point of the signal head assembly, including the backplate.

B9. Pedestal poles shall conform to VDOT PF-2 specifications.

B10. The contractor shall configure the traffic cabinet and test operation in a controlled environment for no less than one week prior to field installation.

C. Detection Equipment

C1. Emergency Pre-emption shall be installed using the GTT Opticom System Intersection Equipment, to include Model 764 Multimode Phase Selector.

C2. The Video Detection System shall be the Aldis Gridsmart Fisheye Camera with mounting assembly, cable and connections. See City website for current specifications.

D. Traffic Signal Heads

D1. Signal mounting shall conform to Standard SM-3. See City website for specifications.

D2. Signal heads shall be LED. All signal heads shall have full tunnel-visors for each individual 12" sections. All traffic signal heads shall have back plates. All items shall be in accordance with City Specifications.

D3. All measurements for the placement of signal heads, signs, and cameras on mast arms shall be taken from the flange to the center of the signal head and signs.

D4. Pedestrian heads shall be 1) Dialight Countdown Pedestrian Signal #430-6479-001X, 2) Pelco upper and lower arm assembly #SE 3148-P34 and 3) Peek Traffic Maintenance Housing #4302A-02-01-01.

D5. All traffic signal heads shall have High Visibility Back Plates (HVBPs) in accordance with VDOT Instruction & Informational Memorandum IIM-TE-378.

E. Conduit, Conductor and Electrical

E1. All junction boxes shall be Standard JB-S2 unless otherwise noted.

E2. All conduits under pavement shall be bored at a minimum depth of 24". All other conduit shall be installed in accordance with Standard ECI-1 at a minimum depth of 18".

E3. The contractor shall arrange for electrical service for the signal and for natural gas service for the UPS system. All fees required to provide these services shall be billed directly by the Utility Company to the Developer/Contractor. The City Traffic Engineer will furnish the contractor with billing account information for utility companies.

E4. All traffic signal wire shall be number 14 AWG, unless otherwise specified. A continuous wire (no splices) shall be run between the controller cabinet and the signal head.

E5. Location of junction boxes and Opticom detectors are to be located by the Contractor and field reviewed by the City Traffic Engineer's representative prior to installation.

E6. Conduits shall be installed so that moisture will drain per Section 700.04(h) of the VDOT Road and Bridge Specifications.

E7. An Uninterruptible Power Supply (UPS) shall be provided with each traffic signal and be CEPSI Model TRUPS-4 with required accessories. The UPS shall include the uninterruptible power supply, batteries, cabinet and the additional equipment necessary to provide power when the electricity is off from the power company. See City website for current specification.

E8. Electrical service shall conform to VDOT Standard SE-5. Safety switches shall be enclosed in a rain tight box conforming to the requirements of NEMA 3R, with a lock-on/lock-off external switch handle. There shall be 100 amp circuit breaker disconnect with 40 amp breakers to the controller and 20 amp breaker to the UPS.

E9. Street lighting luminaires shall feature a "Cobra Head" design with 12' arms and City approved LED light fixtures. See City website for current specifications.

F. Interconnect

F1. Interconnection shall be provided by Fiber Optic Cable. Fiber Optic Interconnection shall be provided with traffic signals on _____ and connected to City network located at _____. Routing of cable shall be approved by City Traffic Engineer. All equipment/methods to be utilized shall be approved by City Traffic Engineer. Standard preapproved equipment list is available from City website.

G. Signs and Pavement Markings

G1. The contractor shall install the pavement markings as shown on plan sheet _____ and the roadway plans. All pavement markings that are in conflict shall be eradicated. All pavement markings applied shall be in conformance with the City of Suffolk Pavement Marking Standards and Details available on the City website. Please note that the City Traffic Engineer's office shall be notified 72 hours in advance of any application of pavement markings.

G2. Internally illuminated street name signs shall be Southern Manufacturing Clean Profile LED signs designed and installed in accordance with City specification. See City website for current specifications.

H. Traffic Signal Inspection Requirements:

H1. Prior to any work beginning, a preconstruction meeting will be required with Traffic Engineering. Call (757) 514-7603 to schedule.

H2. A City right-of-way permit shall be secured by the contractor for all work within the public right-of-way (757-514-7610).

H3. A traffic control plan must be approved by Traffic Engineering prior to approval of a right-of-way permit.

H4. A supervisor, certified by IMSA (International Municipal Signal Association) shall be on site anytime work is being completed on a traffic signal. 24-hour, 7-day-a-week contact information for the contractor staff shall be provided to Traffic Engineering prior to right-of-way permit approval.

H5. After Note A5 above is completed, a 48-hour notification will be required at (757) 514-7603 to schedule inspection of the following items prior to work commencing.

- a. All equipment location stake out.
- b. All foundations prior to concrete pour, including poles, cabinets and auxiliary equipment.
- c. All conduit connections prior to backfilling, including junction box connections.
- d. All conduit runs may be required to have a conduit mandral pulled through them prior to wire installation.
- e. A Traffic Engineering Representative must be present prior to turn-on of any new equipment/installation.
- f. Traffic Engineering will complete an extensive review of all aspects of signal, sign and pavement marking work and any punch list items corrected prior to acceptance by the City.
- g. Contractors must secure all required permits for electrical and gas work from the City Department of Planning and Community Development prior to beginning work (757-514-4150).