

APPENDIX D - GENERAL NOTES

General Notes for Minor Urban Collectors, Local Streets, Multi-Family Developments, Commercial and Industrial Projects –See Delaware County Engineer’s Website at:

<http://www.co.delaware.oh.us/engineer/Development/subdivisions.htm>

(link for Subdivision Projects)

<http://www.co.delaware.oh.us/engineer/Development/commercial.htm>

(link for Commercial and Industrial Projects)

General Notes for Road Widenings–See Delaware County Engineer’s Website at:

<http://www.co.delaware.oh.us/engineer/Development/roadwidening.htm>

Traffic Signal Standards

TRAFFIC SIGNAL STANDARDS

This is an attempt to describe a standard to be utilized by all employees, suppliers and others who want to be part of the purchase, installation and maintenance of the County owned traffic signal system. This standard must be utilized when ordering replacement components or when designing new or replacement intersection configurations. An attempt will be made to address all issues of signal equipment and associated components that go into design, installation and specification of said equipment. The traffic engineer or designate MUST approve any future design improvements in equipment PRIOR to purchase or installation.

MATERIALS:

All materials and equipment must be new, first quality and of most current design for the application. Under special circumstances, pre-approval may be given to utilize materials that have been obtained from reclamation facilities. However, these items must carry the same type of warranty, both by the installer/supplier and manufacturer, as a similar new item would have. All equipment and materials supplied must comply with the National Electrical Code and local codes of the County.

All traffic control equipment must be of the type fully compatible with the County owned traffic signal system. All software and hardware items used in cabinet and controller design must be fully interchangeable from intersection to intersection throughout the county with NO MODIFICATIONS to existing cabinetry or computer software. The only exception to the issue will be at the time the County determines to replace or update ANY portion or component of the signal or preemption system, citywide.

TRAFFIC SIGNAL EQUIPMENT:

This area will deal with descriptions of the type and design features that the County will accept as part of their countywide system. The following notes shall be added to all construction plans where a traffic signal is required. These notes shall be included on the traffic signal plan detail sheet(s).

RACEWAYS AND PULL BOXES: All underground raceways beneath main street and secondary street pavements must be a minimum of three (3) inch diameter, galvanized rigid design and meet ODOT 725.04. Pull Boxes must meet the ODOT 725.08, concrete design.

VEHICULAR SIGNAL HEADS: Heads must be furnished in arrangements such as to form from one to a maximum of five sections assembled with the specified lens size, color and circular or arrow configurations to form a specific signal face. For illustrative purposes, a typical configuration acceptable to the County is as follows: ALL signal sections must be of the 12 inch variety, yellow body and cap visor attachments containing L.E.D. (Light Emitting Diode) for all sections. All signal head configurations that include left or right turn green and amber arrows must be of 5-section "dog house" design. Arrow designations must be a single piece L.E.D. All signal heads must be wired with individual cable runs to the traffic control cabinet. No

“looping” in and out of signal heads will be accepted. *Each cable run into the cabinet shall be marked with the corresponding phase and/or signal head number.*

When a span wire system is used the signal heads shall be aluminum, when a mast arm support system is used the heads shall be the polycarbonate.

PEDESTRIAN SIGNAL HEADS: Signal heads supplied and/or installed in the County must be of the single section type D-2, L.E.D. They must be capable of displaying recognized 11-inch high international symbols, with certified ITE colorations, lunar white, and intensity.

PEDESTRIAN PUSHBUTTONS: Pushbuttons must be properly oriented and installed on poles or pedestals. All buttons installed on steel poles must be serviced by wiring inside the poles. Pushbutton design must be A.D.A. compliant. Signs must be included with each direction that pedestrian pushbutton stations are used. Sign design must be pre-approved by County traffic engineer.

VIDEO DETECTOR UNITS: The detection unit of choice is the Autoscope Solo Pro II. However, it is understood that video detection may not be the best choice at all locations. The County traffic engineer must make determination of the type of detection to be used at each location. Each sensor unit must be capable of delay, extend, traffic counting, occupancy, headway, and speed monitoring. The detection system must be able to be networked and the software must be operated using a Windows based PC.

DETECTOR LOOP: In the cases where video detection is not called for, slots shall be sawed in the pavement for the installation of loop detector wire (IMSA Spec. 51-5) single conductor, 14 gauge minimum, PVC/Nylon with tube jacket. The loops shall be installed as per ODOT TC-82.10. All loop detector slots shall be filled completely with a flexible embedding sealant. Loop installations in new asphalt may be sawed and embedded with sealant and backer rod in the subsurface course, prior to final coat application. Loop detector size will vary with each application. As a rule, lane control detection shall consist of a single 6' x 40' loop, with 5' of the loop design to be placed forward of the STOP BAR location. This is, of course, subject to intersection location.

FOUNDATIONS: All signal support foundations, cabinet pad foundations and pull box characteristics, must be as per State of Ohio Department of Transportation Construction & Material Specification manual (most recent issue) and ODOT Standard Construction Drawings for Traffic Control Devices. Each controller cabinet foundation must have a minimum of 2-3" and 1-1" conduit installed between the foundation base and main pull box. All installations are required to keep power supply leads in a separate conduit from signal control wiring runs.

SIGNAL SUPPORT: Depending on the area in which the signal system is being installed, Mast Arm and Span Wire will both be an option. Signal heads must be RIGID MOUNT to the mast arm. The mounting system will be per the ODOT standard drawing or approved equal. All mast arm installations must be underground fed; no overhead signal wiring from mast arm location to mast arm location will be accepted.

CABINETS: *TS-1 Cabinets shall be used.* They should be pad mounted, where able. All wires coming into the cabinet shall be tagged and labeled. The cabinet will have at least one type of light and fan. A fixed mount light in the top of the cabinet or a “lamp/neck” light are both acceptable. Cabinet shall also be able to handle future equipment for a battery back-up system or other electronic items such as pre-emption units.

POWER SERVICE: Power service must consist of equipment to provide an underground wiring race AND disconnect switch for use with power cable routed from the service source to the controller cabinet. Power service installation must consist of a weather head, conduit and fittings, stainless steel disconnect and enclosure and attachment clamps. If underground service cannot be arranged, outside pole attachment procedures may be utilized. Conduit riser shall terminate at an electric meter base or at the disconnect switch enclosure. Conduit connections with the meter base and enclosure must be watertight by the use of conduit hubs listed on the enclosure UL label. The switch enclosure neutral bar must be grounded directly to the pole-grounding lug.

CONTROLLER: The controller shall be an Econolite controller unit, type ASC/25-2100. The MMU shall have a serial port capable of downloading past conflicts. Everything shall meet the applicable sections of the State of Ohio Department of Transportation Construction and Material Specifications dated January 1, 2002.

PRE EMPTION: The pre-emption system shall be the 3M Opticom Priority Control System. The receiving units shall be the Priority Control Detectors Model 711, Phase selectors shall be model 754, card racks shall be model 793S, and switches and detector cable shall be model 138. The confirmation lights shall also be included.