



Signal Design / Modification Request Form

169 Brick Store Landing Road, Smyrna, DE

This form, as well as the attached Signal Design Checklist, should be completed for all new signals and for all existing signals requiring design modifications on state-maintained highways in the State of Delaware.

Location: _____

Signal: <input type="checkbox"/> New (Proposed) <input type="checkbox"/> Existing (Permit #: _____)

County: _____

If **new**, signal warrants met:
(Signal warrant evaluation forms should be attached)

- | | | |
|-------------------------------------|-------------------------------------|-------------------------------------|
| <input type="checkbox"/> Warrant #1 | <input type="checkbox"/> Warrant #4 | <input type="checkbox"/> Warrant #7 |
| <input type="checkbox"/> Warrant #2 | <input type="checkbox"/> Warrant #5 | <input type="checkbox"/> Warrant #8 |
| <input type="checkbox"/> Warrant #3 | <input type="checkbox"/> Warrant #6 | <input type="checkbox"/> Warrant #9 |

If **existing**, proposed changes:

- | | |
|---|---|
| <input type="checkbox"/> Pedestrian Upgrades | <input type="checkbox"/> Phase / Operational Upgrades |
| <input type="checkbox"/> Maintenance Upgrades | <input type="checkbox"/> Intersection Improvements |
| <input type="checkbox"/> Developer | <input type="checkbox"/> Paving & Rehabilitation |
| <input type="checkbox"/> Other _____ | |

Requested By: _____

Date: _____

Approved By: _____
(Chief of Traffic Operations)

Date: _____

Approved By: _____
(Chief of Traffic Engineering)

Date: _____

Signal Design Checklist (attached)

Completed By: _____
(DeIDOT / Consultant) (Circle One)

Date: _____

Checked By: _____
(DeIDOT Traffic Systems Design Engineer)

Date: _____

Approved By: _____
(DeIDOT Traffic Systems Design Manager)

Date: _____



DELDOT TRAFFIC SIGNAL PLAN REVIEW CHECKLIST

	Yes	No	N/A	Comments
The following items are included and shown correctly on the Plan Sheets:				
• Only pertinent levels, i.e., existing features and proposed geometrics, utilities, drainage, and clear zone / lateral offset, shown on the plans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Limits of construction work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Base mapping shown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• North arrow shown and oriented correctly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Plans shown at the correct scale	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Signal legend matches symbols on plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Existing and proposed right-of-way and easements shown, including labels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• All equipment within the right-of-way. If needed, an Agreement "C" or easement has been provided for any equipment outside of the right-of-way.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Overhead clearance callouts at cable crossing with signal structure are shown on plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• General signal notes shown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Street names and route numbers shown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Route numbers with cardinal direction (e.g., US 13 (NBL)) and road names	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Current border, signature block, revision block used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Construction details provided if required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Pole and mast arm schedule filled out correctly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Conduit schedule filled out correctly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• If span wire configuration, provide the span wire schedule with sag calculations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Clear zone or lateral offset lines shown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Signal equipment placed outside of clear zone or meets lateral offset requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Existing Signal Information				
• Existing signal plans and timesheets have been verified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Site characteristics have been inventoried and examined	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• All existing signal equipment to remain is labeled correctly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Existing signal equipment to be removed is labeled correctly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• All existing DelDOT equipment (i.e., poles, flashers, sign structures, and lighting) shown on the plans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Proposed Signal Information				
• All proposed signal equipment is labeled correctly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



DELDOT TRAFFIC SIGNAL PLAN REVIEW CHECKLIST

	Yes	No	N/A	Comments
<ul style="list-style-type: none"> • Appropriate signal structure, structure configuration / placement 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ○ Lateral and vertical clearance requirements from utilities are met 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ○ Centerlines of existing and proposed signal pole foundations are at least 10' apart 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ○ Alternative pole configurations are used where applicable 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> • Signal controller cabinet location and type 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ○ Cabinet is placed with the door facing away from the road 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ○ Four 4" conduits are provided from the cabinet to the first Type 4 conduit junction well 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ○ Cabinet location permits safe access and is protected if needed 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ○ Cabinet is located near a power source if possible 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ○ Cabinet does not restrict driver visibility 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ○ Cabinet base extension provide 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> • Signal heads and pedestrian heads are numbered per the sequence of operation chart (heads, poles, and signs are numbered left to right on each approach and in order starting with mainline NB then SB or EB then WB and then side streets) 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ○ At least one signal head per movement is placed 40' or more from the stop line 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ○ Signal heads are located no more than 150' from stop line, or 180' maximum if near-side signal head is provided 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ○ Minimum of two signal heads provided for each movement. If approach is more than two lanes, one signal head is provided per lane. 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ○ Vertical signal head clearance requirements are met (15' min. from bottom - 25.6' max. to top) 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ○ Adequate signal visibility is provided 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ○ Signal head sections are appropriate for each movement and aligned correctly with lanes based on lane use 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> • Countdown pedestrian signals and pushbuttons follow design and installation guidelines 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ○ Countdown pedestrian signal heads are located within 5' from the outside edge of the crosswalk and visibility is unobstructed 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> ○ Pushbuttons located correctly and readily accessible from 60"x60" level landing area or the sidewalk (maximum 	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



DELDOT TRAFFIC SIGNAL PLAN REVIEW CHECKLIST

	Yes	No	N/A	Comments
10' from face of curb)				
○ Pedestrian countdown signals aligned parallel with crosswalk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
○ The bottom of the pedestrian signal housing, including brackets, is not less than 7 feet or more than 10 feet above sidewalk level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
○ Pedestrian pushbuttons and sign (with arrow) aligned perpendicular with crosswalk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
○ Pedestrian pushbuttons are installed at least 38" and no more than 46" above sidewalk level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
○ Pedestrian pushbuttons are accessible from a flat landing area and are no more than 10' from face of curb	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
○ An 18" landing area extension is provided at locations where the pushbutton is not directly accessible by a pedestrian in a wheelchair	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
● Availability of electrical power determined	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
○ Power source location coordinated with utility company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
○ Power source pole number and owner shown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
○ Service disconnect and meter placed 10' or less from the power source	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
○ Additional service disconnect provided where the pedestal meter is across the roadway from the cabinet or where the cabinet is located more than 100' from the power source.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
● Metered service pedestal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
● Secondary disconnect (if needed)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
○ Confirm service load is available	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
● Conduit junction wells are appropriately located	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
● Conduit junction wells, conduits, and wires are the correct size and type	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
● Every conduit has a ground cable, except fiber conduits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
● Conduit fill capacity checked (26% maximum fill for new construction, 35% for modifications)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
● An Opticom emergency preemption detector provided for each intersection approach and installed on the near side of each approach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
● Mast arm loadings for non-typical configurations have been verified with Union Metal or TST	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
● Two soil boring locations requested for each intersection, if needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



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	Yes	No	N/A	Comments
NEMA Phasing				
• Correct orientation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Phasing numbers shown on plans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Solid / Dashed lines shown correctly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Correct phasing notes provided	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Pedestrian phases shown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Split phasing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Overlap(s) noted on plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Detectors				
• Detection included and applied properly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Presence loop detectors 1' behind stop line	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Sampling or system detection at location where traffic is expected to reach free flow conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Passage loops at correct setback distance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• A 1 1/2-inch RGS conduit between the rotary drill hole and junction well is provided, if distance is equal to or exceeds 12"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Verify if video detection equipment locations are correct with equipment supplier if applicable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Signs				
• Show all existing signs. Remove any existing signs that are no longer warranted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Street name signs (overhead / post-mounted)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Directional assemblies / other route signs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Signal warning signs or new signal warning signs with NEW or NEW TRAFFIC PATTERN plaques	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Turn restriction signs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Movement prohibition / lane control signs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Remove Stop / Stop Ahead signs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Special sign layouts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Sign legend matches plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Signs on signal plans match signing plans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Pavement Markings				
• Lane use arrows/legend provided where necessary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Stop (or yield) lines are perpendicular to curb	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Stop (or yield) lines installed at least 4' from crosswalks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Stop lines set back adequately to provide space for turning vehicles. Checked with Autorun (or turning template) by using appropriate design vehicle type(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Edge lines, centerlines, (solid) lane lines shown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Crosswalks have been rotated to align	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



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	Yes	No	N/A	Comments
parallel with travel path of traffic				
• Crosswalks are correct width based on posted speed limit and pedestrian activity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Lane dimensions are shown	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Pavement markings schedule provided, if needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Pavement markings labeled correctly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• All pavement marking items follow DelDOT specification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dimensions / Stationing				
• Pavement Markings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Signals and Signs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Detectors (presence and advanced)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Poles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Controller cabinet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Break lines	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Geometrics				
• Stop line set back adequate distance for turning vehicles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Pedestrian connections at crosswalks are correctly located and meet pedestrian accessibility standards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Landing area or sidewalk provides access to pedestrian pushbutton	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Detectable Warning Surfaces (DWS) are applied correctly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Maintenance of Traffic				
• Applicable Typical Applications and allowable lane closure hours are noted on plans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Other Design Considerations				
• Pedestrian accessibility standards are met	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Median disturbance is minimized	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Design addresses environmental concerns (if present)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Design addressed unique construction problems (if present)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Design adheres to driver expectancy for the corridor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Equipment locations do not affect maintenance activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Coordination has occurred with DelDOT's ITMS Section	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Other facilities within the project limits that require traffic signal devices (i.e., schools) are noted	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Railroad signal interconnect is provided if required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Signal is not in conflict with any utilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



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	Yes	No	N/A	Comments
• Special design considerations such as HIBs, pedestrians, preemption or interconnection are addressed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Signal will work as a system with the roadway, signing and marking design	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Design is in accordance with Federal and DelDOT standards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Utilities				
• Overhead utility conflicts avoided	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Underground utility conflicts avoided	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Special signal poles detailed if needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Special pole foundations detailed if needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Utility relocations coordinated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
○ Utility relocation details provided if required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
RIGHT-OF-WAY				
• Adequate right-of-way is available for proposed pole locations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Required right-of-way acquisitions are noted (if needed)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
• Easement for special purpose is noted if needed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	