PRINCE GEORGE'S COUNTY GOVERNMENT
Department of Permitting, Inspections and Enforcement
(301) 883-5710

TRAFFIC SIGNAL DESIGN REVIEW CHECKLIST

This checklist serves as a guide for the consultant in the preparation and for the County to review Traffic Signal Plans. Any questions regarding items contained herein should be referred to the reviewing agency (Prince George's County DPW&T or DPIE) for clarification. These guidelines will apply to most designs, but certain elements may vary per design. (The latest edition of the DPW&T Specifications and Standards for Roadway and Bridges, Section IV, Appendix G: Specifications and Standards for Traffic Control Signals, as well as all other applicable standards, specifications and manuals shall be used.)

NOTE: PLANS SUBMITTED WITHOUT A COMPLETED CHECKLIST MAY BE RETURNED WITHOUT REVIEW

Site/Project Name: _____ Date: _____

Consultant: _____ Applicant: _____

Phone Number: _____ Email Address: _____

Permit No: _____

Consultant: Please complete the checklist below by indicating the following:
✓ = Complete or checked; X = Not Applicable; O = Outstanding, need to address

Item #	Design Checklist Item	CONSULTANT	DPIE
A-0.0	**PLAN SHEET REQUIREMENTS**		
A-0.1	North Arrow		
A-0.2	Permit Number (if applicable)		
	TITLE BLOCK:		
A-0.3	Intersection Name (MAJOR ROAD AT MINOR ROAD – Uppercase and Bold)		
A-0.4	Location Number (provided by the operating agency)		
A-0.5	Plan Sheet Numbers (all sheets included)		
A-0.6	Date		
A-0.7	Scale		
A-1.0	**Plan Sheet 1 – TRAFFIC SIGNAL PLAN**		
A-1.1	Intersection Layout		
A-1.2	Construction Details		
A-1.3	Signal and Sign Display/Details		
A-1.4	NEMA Phasing Display		
A-1.5	Utility Legend		
A-1.6	Scale: 1″=20′		

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A-1.7	Right-of-Way/Easements		
A-1.8	Street Names		
A-1.9	Show critical base information including ultimate geometrics (sidewalk, edge of pavement, driveways, etc.).		
A-1.10	Show all existing signs and pavement markings that are to remain in a light gray.		
A-1.11	Show all proposed signs and pavement markings in black.		
A-2.0	**Plan Sheet 2 – GENERAL INFORMATION (GI) PLAN**		
A-2.1	Phasing Chart		
A-2.2	Wiring Diagram (See Section D)		
A-2.3	Equipment List (See Section I)		
A-2.4	Project Description (General Description, Intersection Operation, Special Notes) – (See Section H)		
A-3	**Plan Sheet 3 – INTERCONNECT PLAN (if applicable)**		
A-3.1	Scale: 1″=30′- 1″=50′, based on the length of the project		
A-3.2	Roadway Layout		
A-3.2	Construction Details		
A-3.3	Equipment List (if not included on Plan Sheet 2)		
A-3.4	Utility Legend		
A-3.5	Right-of-Way/Easements		
A-3.6	Note: *The hand box spacing is a maximum of 195′ except where otherwise noted.*		
B	**SIGNAL DESIGN ELEMENTS**		
B-1	Designer has contacted Miss Utility to have utilities identified and marked in the field prior to first plan submittal. Plans accurately reflect all existing utilities, including heights of aerial cable.		
B-2	Geometrics should match any applicable roadway/paving plans.		
B-3	Pavement marking should match any applicable signing & pavement marking plan.		
B-4	Power company must dictate and verify the power feed (120:240 V service). A copy of the Class of Service request must be provided by the designer with the first plan submittal.		
B-5	Identify the power pole or transformer number.		
B-6	Signal heads should be placed at an appropriate distance from the approaching stop bar. (max. 120′ for 8″ head; 150′ for 12″ head)		
B-7	Near side signal heads should be provided if needed for sight distance or if otherwise required per the MD MUTCD.		
B-8	Detection zones (for passage detection) are non-directional.		
B-9	Distance from passage detection zones to stop bar shown on plan.		
B-10	Controller cabinet placed such that there is a clear view of the intersection from the concrete pad, yet far enough from the curb that it will not be struck from the road. The cabinet door designed to open away from the closest sidewalk or roadway.		

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B-11	LED luminaires should be placed on signal poles, 27′ or greater in height, unless there is a conflict.		
B-12	A minimum of two signal heads per approach provided.		
B-13	Overhead street name signs require two mounting brackets.		
B-14	All conduits must be identified on the plan.		
B-15	All equipment is located within the County right-of-way or a granted easement. If additional right-of-way or easements are needed, it is the applicant's responsibility to obtain.		
B-16	All ramps must be ADAAG compliant, including slope, use of detectable warning surface, width of landing, etc.		
B-17	Where existing roadway is cut, mill and overlay must be completed. Refer to the Prince George's County Utility Policy for limits of required mill and overlay.		
B-18	Any removal of pavement markings must be done with mill and overlay. Grinding and hydroblasting are not permitted.		
B-19	For all proposed conduit, plan must indicate method of installation.		
B-20	Designer must identify and confirm all aerial and underground utility locations on the plan.		
B-21	All pedestrian signals must be APS (Accessible Pedestrian Signal) compliant.		
B-22	If necessary, a full traffic control plan design may be required when the road work and/or impacts to existing traffic are more extensive than that which can be addressed through the MD SHA Typical Applications.		
B-23	Crosswalks shall be 10′ (to include two 12″ solid white stripes)		
C	**CONDUITS**		
C-1	2 IN. PVC Schedule 80 Electrical Conduit from the Power Pedestal to the Cabinet		
C-2	2 IN. PVC Schedule 80 Electrical Conduit from the Power Pedestal to Cabinet Corner Hand Box (for power to street lights)		
C-3	3 IN. PVC Schedule 80 Electrical Conduit from Pedestrian Pole to Hand Box		
C-4	3 IN. PVC Schedule 80 Electrical Conduit from Hand Box to Hand Box for Interconnect		
C-5	2 PCS of 3 IN. PVC Schedule 80 Electrical Conduit from the Hand Box to the Signal Pole		
C-6	4 IN. PVC Schedule 80 Electrical Conduit from the Power Pedestal to the Power Source		
C-7	2 PCS of 4 IN. PVC Schedule 80 Electrical Conduit from the Cabinet to the Hand Box		
C-8	2 PCS of 4 IN. PVC Schedule 80 Electrical Conduit from Hand Box to Hand Box under all roadways		
D	**WIRING DIAGRAM**		
D-1	Low voltage (video, pedestrian push button, communication cables) must always be separated from high voltage cables (signal heads, pedestrian heads, and luminaires).		
D-2	Wires (cables) should be tracked from the source to the end.		
D-3	Conduit runs that end in the controller cabinet should all be shown in the cabinet.		

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D-4	Slack requirements are as follows: • 10′ at the signal cabinet • 6′ at each handbox • 6′ at base of each pole • 1′ drip loop for each device on mast arm		
D-5	3 section signal heads require 5 conductors Electrical Cable (No. 14 A.W.G.) (IMSA 20-1 Cable) – *To be measured from the controller cabinet to the appropriate signal head*		
D-6	4 section signal heads require 7 conductors Electrical Cable (No. 14 A.W.G.) (IMSA 20-1 Cable) – *To be measured from the controller cabinet to the appropriate signal head*		
D-7	5 section signal heads require 7 conductors Electrical Cable (No. 14 A.W.G.) (IMSA 20-1 Cable) – *To be measured from the controller cabinet to the appropriate signal head*		
D-8	Pedestrian heads require 3 conductors Electrical Cable (No. 14 A.W.G.) (IMSA 20-1 Cable) – *To be measured from the controller cabinet to the appropriate pedestrian head*		
D-9	Pedestrian push buttons require 2 conductors Electrical Cable (No. 14 A.W.G.) (IMSA 20-1 Cable) – *To be measured from the controller cabinet to the appropriate pedestrian push button*		
D-10	Luminaires require 3 conductor Tray Cable (No. 12 A.W.G.) – *To be measured from the power pedestal to the luminaire*		
D-11	Main electrical service via 1 conductor 3 PCS Cable (8 Copper A.W.G.) – *from power pedestal to the controller cabinet*		
D-12	Main electrical service via 1 conductor 3 PCS Cable (4/0 Aluminum A.W.G or as required by power company) – *from power pedestal to power source*		
D-13	Communication service (Comcast – cable or fiber) – (County owned fiber network or point to point wireless)		
D-14	Video detector cable (as per manufacturer specs) CAT5 Outdoor rated cable with 2 RJ-45 connectors for Aldis Grid Smart System (Part# PGCC50C)		
E	**GROUNDING**		
E-1	Ground Rod – ¾ IN. Diameter x 10 FT. Length (Proposed in all pole bases, power pedestal and controller cabinet.)		
E-2	Bare copper stranded ground wire (No. 6 A.W.G.) for controller cabinet, power pedestal and all pole locations.		
F	**LIGHTING**		
F-1	The street lighting tray cable comes directly from the power pedestal, under a separate breaker.		
F-2	Luminaire arm typically should be 20 FT.		
F-3	Luminaires should be 131 W LED (Dialight Model #SL3C5HLGG)		
G	**PAVEMENT MARKING**		
G-1	Install 5″ wide solid white pavement marking.		
G-2	Install 5″ wide solid double yellow pavement marking		
G-3	Install 12″ wide solid white pavement marking for crosswalk		
G-4	Install 24″ wide solid white pavement marking for stop bar		
G-5	Install white pavement marking symbol/lettering (ONLY & Arrows, if applicable)		

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H	**PROJECT DESCRIPTION**		
H-1	**I – GENERAL**		
	Example: *THIS PROJECT INVOLVES THE INSTALLATION OF A NEW TRAFFIC SIGNAL AT THE INTERSECTION OF "A" STREET AND "B" STREET IN PRINCE GEORGE'S COUNTY. "A" STREET IS CONSIDERED TO RUN IN A NORTH/SOUTH (OR EAST/WEST) DIRECTION.*		
H-2	**II – INTERSECTION OPERATION**		
H-2.1	**Example:** *THE INTERSECTION WILL OPERATE IN A FULLY ACTUATED MODE USING "X" NEMA PHASES. THERE WILL BE AN EXCLUSIVE/PERMISSIVE LEFT TURN PHASE FOR BOTH THE EAST AND WESTBOUND MOVEMENTS OF "A" STREET. THE "A" STREET THROUGH MOVEMENTS WILL OPERATE CONCURRENTLY WITH ACTUATED PEDESTRIAN MOVEMENTS ACROSS THE NORTH AND SOUTH LEGS OF THE INTERSECTION. THE "B" STREET THROUGH MOVEMENTS WILL OPERATE IN A SIDE STREET SPLIT PHASE MODE WITH AN ACTUATED PEDESTRIAN MOVEMENT ACROSS THE EAST LEG OF THE INTERSECTION.*		
H-2.2	A "XX" PHASE, FULL TRAFFIC-ACTUATED, SOLID STATE DIGITAL CONTROLLER WITH INSPECTION MONITOR, VIDEO CAMERA EQUIPMENT, HARNESS AND BATTERY BACK-UP HOUSED IN A BASE MOUNTED CABINET ARE TO BE INSTALLED AT THIS LOCATION.		
H-3	**III – SPECIAL NOTES – Include the following notes on plan**		
H-3.1	All roadway construction shall be in accordance with the Prince George's County Department of Public Works & Transportation (DPW&T) Standards and Specifications, the Prince George's County Code, the Prince George's County Road Ordinance and Prince George's County Policy and Specification for Utility Installation and Maintenance Permits.		
H-3.2	All traffic signal equipment shall be located in anticipation of future roadway widening.		
H-3.3	Maintenance of traffic will be handled by the contractor utilizing the following MD SHA standard plates for traffic control: (*Provide applicable standards).*		
H-3.4	The signal contractor shall be required to contact the County Signal Shop (Mr. George Johnson, Jr. @ 301-499-8616 or 240-832-0087) at least 72 hours in advance of any on site construction.		
H-3.5	Prior to starting any work shown on this plan, the permittee shall arrange for a pre-construction meeting with the DPIE inspector by calling (301) 883-3855 and the DPW&T inspector by calling (240) 832-0087 (or DPWT Dispatch at (301) 324-2710).		
H-3.6	Materials to be furnished and installed by the contractor shall require catalog cuts submitted to the county (Site/Road Plan Review Division, Traffic Engineering for DPIE Permit Projects; Office of Engineering & Project Management for DPWT Projects) for approval prior to purchasing		
H-3.7	All signal heads, luminaires, signs and camera location/placement shall be verified or changed as necessary by the Signal Shop inspector.		

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H-3.8	Stop bars shall be a minimum of 4 FT behind the crosswalk.		
H-3.9	Signal contractor must be IMSA Traffic Signal (Level 2) certified.		
H-3.10	The signal contractor shall be responsible for terminating all field cable to the appropriate terminals and properly labeling each cable.		
H-3.11	Concrete work is to be done by the signal contractor, unless otherwise specified or if it is a part of a CIP.		
H-3.12	All traffic signal foundations shall be installed at final sidewalk or curb grade for closed sections. The contractor shall verify ultimate grades prior to the installation of all signal equipment.		
H-3.13	The contractor shall be responsible for calling "MISS UTILITY" (1-800-257-7777) at least 48 hours prior to construction so that all utilities may be located in the field.		
H-3.14	All pavement markings detailed are proposed and are to be installed in accordance with Prince George's County standards. All crosswalks shall be centered on handicap ramps or median cut throughs.		
H-3.15	The engineer and/or contractor is responsible for determining the fill capacity in any existing conduit that is intended for use by the proposed design. The allowable percentage fill is per NEC (National Electrical Code) standards.		
H-3.16	All lane lines shall be constructed with extruded thermoplastic material and be applied by truck-mounted equipment. Other symbolic markings, such as arrows, only, and other wordings, may be of pre-cut heat applied thermoplastic material. Crosswalks and stop bars could be either extruded.		
H-4	**IV - ADDITIONAL PERMIT NOTES – Include these notes on plan**		
	In accordance with Section 23-128 of the County Road Ordinance, a project sign shall be posted prominently describing the following: • Subdivision Name (as shown on permit application) • Owner/Permittee Address and Phone • DPIE Permit Number		
I	**EQUIPMENT LIST**		
	Equipment should be listed as: Item Number/Quantity/Unit /Description		
	Equipment to be furnished by Prince George's County and installed by the contractor:		
I-1	OVERHEAD STREET NAME SIGNS (Contractor to furnish appropriate mast arm mounting hardware)		
	Equipment to be furnished and installed by the contractor:		
I-2	NAZTEC NEMA SIZE "6" BASE MOUNTED CABINET COMPLETE (MODEL #70006-PGC2V-68), WITH NAZTEC EIGHT PHASE SIGNAL ETHERNET SIGNAL CONTROLLER		

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I-3	UNINTERRUPTIBLE POWER SUPPLY (UPS) BY CLARY CORPORATION. (MODEL #SP1250LX-N) WITH POWER INTERFACE BYPASS SWITCH (MODEL #SPD-302). BATTERIES (6) – 51 AH (PART #OP-72D), BATTERY CONNECTOR HARNESS (PART #SP-19N1)		
I-4	SIGNAL MAST ARM POLES (UPRIGHTS) – 27', 21' STANDARD OR 16' MONOTUBE		
I-5	MAST ARM (Length should be indicated based on the roadway section)		
I-6	PEDESTRIAN POLES (Should be 10' with breakaway base, countdown pedestrian signal, sign and pushbuttons)		
I-7	12 IN., ONE-WAY, THREE SECTION SIGNAL HEAD – MAST ARM MOUNT (NAZTEC Brand with Dialight L.E.D. indications – XL Series for **R, Y, G** Lenses **AND/OR** X Series for exclusive phases – **RA, YA, GA** lenses)		
I-8	12 IN., ONE-WAY, FOUR SECTION SIGNAL HEAD – MAST ARM MOUNT (NAZTEC Brand with Dialight L.E.D. indications – XL Series for **R, Y, G** Lenses **AND/OR** X Series for **GA** lenses)		
I-9	12 IN., ONE-WAY, FIVE SECTION SIGNAL HEAD – MAST ARM MOUNT (NAZTEC Brand with Dialight L.E.D. indications – XL Series for **R, Y, G** Lenses **AND/OR** X Series for **YA, GA** lenses)		
I-10	16 IN., ONE-WAY, NAZTEC PEDESTRIAN SIGNAL HEADS WITH COUNTDOWN DIALIGHT LED DISPLAY (MODEL #430-647-9001X) – (POST TOP WITH 4 IN. SLIP FITTER, ONE WAY, TRI-STUD AND BLACK IN COLOR)		
I-11	PEDESTRIAN PUSHBUTTON ASSEMBLY & PEDESTRIAN PUSH BUTTON SIGN R-10-3e (9 IN. X 15 IN.) – POLE MOUNTED (APS BY CAMPBELL, MODEL APB 915)		
I-12	CONTROLLER UNIT BY CAMPBELL (MODEL WiAPC)		
I-13	ALDIS GRID SMART VIDEO DETECTION SYSTEM J.O. HERBERT INC.: PART #PGC-GS2CCP – 2 Fisheye Cameras (Up to 250' of setback detection) OR PART #PGC-GS2ACPP – 1 Fisheye & 2 Advanced Cameras (From 350' to 500' of setback detection)		
I-14	ALDIS GRID SMART VIDEO DETECTION SETUP KIT (15 IN. COLOR MONITOR AND TRACKBALL)		
I-15	HANDBOX – 30" x 48" x 36" (CABINET CORNER)		
I-16	HANDBOX – 24" x 36" x 36" (OTHER CORNERS)		
I-17	HANDBOX – 17" x 36" x 36" (INTERCONNECT ONLY)		
I-18	MOUNTING HARDWARE – All hardware necessary for signals, signs, pedestrian heads, video cameras and poles		
I-19	ELECTRIC UTILITY SERVICE EQUIPMENT (120/240 V, SINGLE PHASE, THREE WIRE SYSTEM) FOR AN ISOLATED PEDESTRIAN ELECTRICAL SERVICE PER PRINCE GEORGE'S COUNTY STANDARD TS-13 AND TS-14 (PEPCO: MIDWEST #R108CP6HP034 OR BGE: #M108CP6HP01)		

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	COMMUNICATIONS:		
I-20	COMMUNICATION SERVICE (CABINET MOUNT COMPLETE) – NETWORK INTERFACE BOX, COMCAST ONLY		
	Data Switching Equipment:		
I-21	CISCO SECURITY ROUTER (891F-K9) WITH SFP PORT – PART #CISCO891F-K9		
I-22	CISCO ETHERNET SWITCH – CISCO CATALYST 3850 (24 PORT UPOE IP SERVICES 10/100/1000 4 SFP STANDARD) – PART #WS-C3850-2U-S		
I-23	SMARTNET 8X5XNBD CISCO CATALYST 3850 24 PORT PoE 4X1G Upl – PART #WS-C3850-24U-E		
I-24	GBIC CONNECTOR FOR CISCO ETHERNET SWITCH (GE SFP LC CONN LH) – PART #10GIG LX/LHS FP LC CONNECTOR GLC-LH-SM		
I-25	FIBER JUMPER 1M LC-ST 9/125 OS1 DUPLEX SINGLE MODE PVC FIBER OPTIC CABLE - YELLOW		
I-26	3 FT. CAT6 SNAGLESS SHIELDED (STP) NETWORK PATCH CABLE – BLUE		
I-27	6 FT. CAT6 SNAGLESS SHIELDED (STP) NETWORK PATCH CABLE – BLUE		
I-28	10 FT. CAT6 SNAGLESS SHIELDED (STP) NETWORK PATCH CABLE - BLUE		
	Fiber:		
I-29	FIBER PIGTAILS (Only when fiber is used and requires fusion splicing – TO BE SPECIFIED BY DPWT TRAFFIC OPERATIONS)		
I-30	FIBER SPLICE ENCLOSURE (Only when fusion splicing the pigtails) – CORNING OPTISHEATH SEALED TERMINAL, UCA SERIES (WITH 6 OPTITAP CONNECTOR ADAPTERS, 2 MECHANICAL PORTS, WALL BRACKET) – PART #UCA4-066CP-W-2B		
I-31	SPLICE TRAYS – OPTISHEATH SPLICE TRAY – 12 SINGLE FIBER SPLICES OR 4 MASS FUSION SPLICES – PART #UCAO-ST-06 UCAO		
	Where applicable and as indicated by DPWT Traffic Operations:		
	TEMPERATURE PROBE:		
I-32	NAZTEC ETHERNAL TEMPERATURE PROBE ASSEMBLY – PART #50222-2000		
I-33	NAZTEC ETHERNAL TEMPERATURE PROEB SENSOR CABLE (100 FT) – PART #50222-2100		
	CCTV PTZ CAMERAS FOR TRAFFIC OPERATIONS:		
I-34	CCTV CAMERA – COHU 4260HD – MODEL #4261-1000 – FACTORY CONFIGURATION 0014		
I-35	CAMERA MOUNTING BRACKET, 15 FT TUBES, 96 CABLE (CCTV HARDWARE PELCO BRACKETS) – MODEL #AB-0619		

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I-36	COHU CAMERA CABLE WITH MS CONNECTOR PREMADE AT FACTORY, 300 FT LENGTH AND RJ45 CONNECTOR, POWER CONNECTOR, 300 FT LENGTH – MODEL #CA252B		
I-37	COHU POSITIONER BRACKET FOR 4260HD – MODEL #8481-9		
I-38	CAMERA POLE – 45 FT/50 FT – UNION METAL DRAWING NO. P33-B249		
	PAVEMENT MARKINGS:		
I-39	5″ WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING		
I-40	5″ YELLOW HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING		
I-41	12″ WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING		
I-42	24″ WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING		
	**Other items should be added as needed for the specific project.*		