



Ministry of
Transportation
and Infrastructure

ELECTRICAL AND TRAFFIC ENGINEERING MANUAL

Appendix 200.2

Electrical Design Quality Review Check List

Electrical Design Quality Review Check List

Location: _____ TE - _____
 Designer: _____ Reviewer: _____ Date: _____

DRAWINGS - GENERAL

<input type="checkbox"/>	Are Ministry drafting standards followed?	<input type="checkbox"/>	Is there a Key Plan? Is Legend shown on sheet 1?
<input type="checkbox"/>	Is the print quality clear? Is unessential information lightly shaded in the background?	<input type="checkbox"/>	Are the Notes and Disclaimers ("DO NOT USE ...", "THIS DRAWING SUPERSEDES ...") shown?
<input type="checkbox"/>	Are Revision numbers and descriptions correct and consistent across all sheets?	<input type="checkbox"/>	Are correct Roadway names shown on site plans and elevations?
<input type="checkbox"/>	Are Elevations dimensioned and labeled correctly?	<input type="checkbox"/>	Are join lines matching and consistent, if applicable?
<input type="checkbox"/>	Are Schematics/Wiring Diagrams shown and labeled correctly?	<input type="checkbox"/>	Are station numbers shown and correct, if applicable?
<input type="checkbox"/>	Are SSHC drawings (SP635) referenced?	<input type="checkbox"/>	Are the Laning and Geometrics consistent with the approved civil design?
<input type="checkbox"/>	Are Title block(s) correct and consistent across all sheets?	<input type="checkbox"/>	Are Pavement Markings generally consistent with the approved civil design?
<input type="checkbox"/>	Are Scales and North Arrows (True & Signal) shown on Site Plans and Elevations?	<input type="checkbox"/>	Is the posted speed for each roadway shown?

LIGHTING and UNDERGROUND

<input type="checkbox"/>	Is the existing equipment clearly identified?	<input type="checkbox"/>	Are photoelectric cells identified and labeled correctly on site plan, elevations and schematic?
<input type="checkbox"/>	Is the equipment to be removed clearly identified?	<input type="checkbox"/>	Are Service drops and Service panels identified?
<input type="checkbox"/>	Are existing and new conductors clearly identified?	<input type="checkbox"/>	Is J.B. type numbering per MoT standard (matches legend? C.J.B. identified?)
<input type="checkbox"/>	Are existing and new conduits clearly identified?	<input type="checkbox"/>	Is there a Flasher device in the Wiring Schematic?
<input type="checkbox"/>	Is conduit sizing correct and has a conduit fill check been placed in the design folder?	<input type="checkbox"/>	Are there post mounted flashers as per Design Manual or as requested by STOE?
<input type="checkbox"/>	Are Conductor and Conduit sizes and symbols shown on schematic wiring diagrams?	<input type="checkbox"/>	Are pole bases correctly shown on elevations (height) and site plan (type, frangible, breakaway)?
<input type="checkbox"/>	Have potential future requirements been addressed (pre-ducting, extra conductors, etc.)?	<input type="checkbox"/>	Are minimum backfill requirements around pole bases as per Standard Specifications?
<input type="checkbox"/>	Are existing utilities shown and all conflicts identified and noted in design folder?	<input type="checkbox"/>	Have pole placements been checked (1 m setback from curb; no conflicts with pedestrians, etc.)?
<input type="checkbox"/>	Have clearances to overhead conflicts been verified in the field and with Power Utility?	<input type="checkbox"/>	Are Clear Zone requirements met?
<input type="checkbox"/>	Are Service Panels numbered correctly?	<input type="checkbox"/>	Has a Pole loading review been done for all poles being modified? Placed in design folder?
<input type="checkbox"/>	Are Breaker Sizes correct?	<input type="checkbox"/>	Do lighting warrants conform to TAC <u>Illumination of Isolated Rural Intersections</u> and STOE requirements?
<input type="checkbox"/>	Is luminaire circuit numbering correct on Site Plan and Elevations?	<input type="checkbox"/>	Do lighting levels and uniformity ratios conform to IES standards?
<input type="checkbox"/>	Are luminaire wattages correct?		

[C.]J.B. – [concrete] junction box
 MoT – Ministry of Transportation
 STOE – Senior Traffic Operations Engineer
 Construction

TAC – Transportation Association of Canada
 TEC – Traffic Engineering Checklist
 SSHC – Standard Specifications for Highway

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TRAFFIC SIGNALS

<input type="checkbox"/>	Is the Traffic Engineering Checklist signed-off by the STOE? Have the drawings and TEC been compared for conformity?	<input type="checkbox"/>	Does the Signal Sequence Display match the TEC? Are roadways named and north arrow shown? Is T-intersection / 4-way intersection shown?
<input type="checkbox"/>	Is pole numbering as per MoT standards and consistent on the site plan and elevations?	<input type="checkbox"/>	Is there a geometric conflict with opposing double left turns? Is this noted on the Signal Sequence Display?
<input type="checkbox"/>	Does the controller type match the TEC?	<input type="checkbox"/>	Is Bus priority shown in the Signal Sequence Display?
<input type="checkbox"/>	Has the cone of vision been checked for all approaches? Are signal heads aligned correctly?	<input type="checkbox"/>	Is Emergency vehicle pre-emption equipment correctly shown on the drawings? Is it correctly shown on the Signal Sequence Display per the TEC?
<input type="checkbox"/>	Has the stop bar to signal head distance (> 15 m & < 55 m) been checked and addressed?	<input type="checkbox"/>	Does the Signal Display have Railway pre-emption clearance and pre-emption phasing per the TEC?
<input type="checkbox"/>	Has the number of conductors for signal heads including service pole been checked?	<input type="checkbox"/>	Are LED No Left Turn Signs required and shown?
<input type="checkbox"/>	Has phasing of signal heads on site plan and signal display been checked to comply with the TEC?	<input type="checkbox"/>	Has the Conductor Colour Coding been checked for correct wiring (controller, flashers, lighting, pre-emption)?
<input type="checkbox"/>	Has the Phasing Designation of heads on elevations been checked for conformity?	<input type="checkbox"/>	Are Street Name Signs correctly shown on elevations?
<input type="checkbox"/>	Are tunnels, arrows, etc. shown on elevations and site plan where required?	<input type="checkbox"/>	Are Lane Use Signs and correctly shown on the approaches per the TEC?
<input type="checkbox"/>	Are pedestrian pushbuttons within 5 m of crossings and conveniently located?	<input type="checkbox"/>	Are Turn Control Signs correctly shown on the drawings per the TEC?
<input type="checkbox"/>	Are pedestrian pushbutton signs appropriately located and designated (R vs. L)?	<input type="checkbox"/>	Has accommodation been made for cyclists (pushbuttons, loops, stencils) per the TEC and STOE requirements?
<input type="checkbox"/>	Have the position, phase designation, dimension and numbering of detector loops been checked to comply with MoT standards?	<input type="checkbox"/>	Have Advance Warning Flashers warrants been reviewed, and signs installed as required? Are sign locations based on speed and grade and dimensions shown on drawings?
<input type="checkbox"/>	Has the detector loop table been verified to conform with the site plan and phasing?	<input type="checkbox"/>	Does the telephone / cellular / time clock synchronization requirements match the TEC?
<input type="checkbox"/>	Have all right turn lane loops been classified as counting unless directed otherwise by the STOE?	<input type="checkbox"/>	Do drawings conform with all other requirements in TEC?

DMS, CAMERAS AND SENSORS

<input type="checkbox"/>	Camera Warrant completed?	<input type="checkbox"/>	Antenna polarity, direction, and mounting height optimal for application?
<input type="checkbox"/>	IP Addresses, Usernames and Passwords do not appear in drawings?	<input type="checkbox"/>	Polarity and aiming of directional antennas indicated on drawings?
<input type="checkbox"/>	Network Diagram included?	<input type="checkbox"/>	Orientation and aiming of sensors indicated on drawings?
<input type="checkbox"/>	Communication and Control Block Diagram included?	<input type="checkbox"/>	Has ITS Engineering been contacted for DMS names?
<input type="checkbox"/>	DMS information block included in drawings?	<input type="checkbox"/>	Equipment List included?

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DESIGN FOLDER

<input type="checkbox"/>	Is the Design Folder complete in accordance with Sec. 202.6?
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I _____, Professional Engineer, declare that the submitted drawings have been checked for quality and compliance to Ministry standards. I understand that this checklist does not constitute a complete review and it is my responsibility to ensure that a quality control and assurance plan is in place and requirements and standards for the project are met. I understand that any errors or omissions in the design that cause delays or add costs to the project may be subject to claims under my Professional Errors and Omissions Insurance.

NOTE: Poor performance by the consultant will impact selection and assignments for future projects.

Professional Engineer Signature

Date