



APPENDIX 4

Checklists

**Township of King
Design Criteria and Standard Detail Drawings**

APPENDIX 4 – CHECKLISTS

Engineering Submissions :

The following materials are to be submitted to ensure a complete (initial) submission is made.

Drawings:

Cover Sheet

Index Sheet

General Notes Sheet

General Aboveground Services Plan(s)

General Underground Services Plan(s)

Sanitary Drainage Plan(s)

Storm Drainage Plan(s)

Water Distribution System Plan(s)

Grading Control Plan(s)

Plan and Profile Drawing(s)

Stormwater Management Plan(s)

Miscellaneous Detail Plan(s)

Standard Detail Plan(s)

Utility Coordination Plan(s) (typically at 2nd submission)

Traffic Management Plan(s)

Erosion and Sediment Control Plan(s)

Tree Removal and Preservation Plan(s)

Landscape and Streetscape Plan(s) (typically at 2nd submission)

Street Lighting and Photometric Plan(s) (typically at 2nd submission)

(preferably in the above sequence)

Reports and Reference Materials*:

Draft Plan (as approved by Council)

Draft M-Plan

Draft (Easement) R-Plans (typically at 2nd submission)

Sanitary and Storm Sewer Design Sheets (hard copy and Excel)

Stormwater Management Report

SWM Pond Operations and Maintenance Manual

Water Distribution System Analysis Report

Transportation and Traffic Impact Study

APPENDIX 4 – CHECKLISTS

Geotechnical Soils Report (final)

Hydrogeological Impact Report (where applicable)

Environmental Impact Study

Noise and Vibration Study

Archaeological Assessment Report (including clearance letters)

*Where copies of reports have been circulated during the Draft Plan Approval process, they will still be required to be submitted for a complete engineering submission. In any case, where details have changed, these are to be deemed "final" copies of the previous (possibly preliminary) documents.

MUNICIPAL ENGINEERING "PRE-SCREENING" CHECKLIST

10/4/2016

Project Name :
 Draft Plan (T) No. :
 Consultant :
 Submission No. :

DATE :

	Yes	No	N/A	Comments
Drawing Format:				
standard Arch D sheets - 24" x 36"				
title sheet c/w Draft Plan No., key plan, Developer, Engineer				
Engineers stamp signed by a Professional Engineer				
standard signing block on all sheets for Township Engineer				
key plan on all sheets (Scale 1:10,000)				
north arrow reference on all sheets				
all elevations to be geodetic (reference to existing benchmark)				
General Plan of Services (Scale 1:1000) c/w geodetic benchmark				
Plan & Profile Drawings (Scale H 1:500, V 1:50)				
Grading Plans (Scale 1:500)				
Detail Plans				
Storm Drainage Plans (Scale 1:1000)				
Sanitary Drainage Plans (Scale 1:1000)				
Street Lighting Plans				
Composite Utility Plan				
Traffic Control, Pavement Marking Plan				
Landscaping Plans				
Standard Notes & Detail Plans:				
Township Standard Drawings and Notes used where applicable				
Ontario Provincial Standard Drawings where no other Stds				
Detail Plans & Specs required for all special features not covered				
minimum pavement design or specified alternative(s)				
General Plan of Services (1:1000 scale):				
identify all lots, blocks/use (ie. number, park, school, comm, ind)				
drawing index (c/w plan & profile drawing identification No.)				
road allowances, lots, blocks, easements & reserves				
proposed services (solid), existing services, utilities, etc (dashed)				
manholes, catchbasins, valves, hydrants				
all sewers c/w size, type and direction of flow				
watermains c/w size				
curb & sidewalk including connections to paths, external etc.				
all infrastructure to have asset ID's labelled				
existing floodplain, approved fill line & applicable flood line as req'd				
Grading Plans (Scale 1:500):				
show & label existing contours (at 0.5m intervals pending terrain)				
drainage - self contained (if not, justification req'd)				
accommodate external drainage areas				
identify tree preservation area and protection fencing				
show all fences, including labels (type, height)				
encroachment into EPA / Open Space Blocks (justification req'd)				
0.6m wide strip along sloped edges of lots abutting other lands				
match existing grade at property boundary (or provide agreement)				
identify transition slopes along boundary and on lots				
minimize retaining walls				
retaining walls to be located on private property, provide details				
indication of drainage swales & direction				
existing & proposed elevations at lot corners				
elevations along swales, grade change points, top/bott of ret.walls				
specified grades at house				
road centreline/grades, street furniture (ie.MH, CB,Hyd, Trans,etc)				
specified catchbasin grate elevation				
driveway and sidewalk curb depressions (review width)				

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Plan & Profile Drawings (Scale H 1:500, V 1:50):				
Watermain:				
standard location in ROW (ie. 4.0m o/s for 20m ROW)				
dimensions for watermain depth & clearances				
minimum cover - (ie. standard 1.8 m or 2.0 m at road x-ing)				
minimum clearances - (ie. 0.3 or 0.5m vertical, 2.5m horizontal)				
looped system (ie. no dead end mains)				
temp. main dead ends with hydrant/valve or blow-off				
secondary feed for emergency				
50 mm loop for cul-de-sac, c/w valve & hydrant				
valve chambers (ie. 300mm & larger)				
sampling station(s) location & detail				
standard service location or o/s dimension to be specified				
larger service sizes indicated c/w valve location (control/check valve)				
aire release chambers at high points				
insertion meter(s), location & detail				
Storm Sewer:				
standard location (ie. 1.5m south or west of pavement centerline)				
location within easements or blocks				
accommodate external areas - adequate depth				
minimum depth of cover 1.5m (min. 2.7m for house connections)				
specify pipe size, material type & class				
show 25 year HGL - basements 0.3m above				
Storm Services:				
standard service connection location c/w test fitting				
minimum size (ie. 150mm dia to property line)				
risers required when sewer invert exceeds 4.5m depth				
identify lots with sump pumps (only where permitted)				
Storm Manholes & Catchbasin Manholes :				
maximum spacing based on pipe size (ie. 100m for 300mm, etc.)				
size, type & specification (ie. pipe size / OPSD No. or specified alt.)				
safety grate indicated when exceeding 5.0m depth				
benching details provided (ie. invert difference with large pipe size)				
specified frame & cover or grate elevation				
Catchbasins & Ditch Inlets:				
catchbasin location (ie. sidewalk crossing, driveway, rear lot)				
catch basin connection size (ie. min. 250mm for single)				
ditch inlet size, type, grate slope, erosion protection				
minimum grade on lead				
specified concrete encasement & location of rear yard lead				
Inlet / Outlet Headwalls & Structures:				
inlet & outlet grate design & details (specific designs as required)				
safety grates, handrail, erosion protection (ie. rip rap, gabion, etc.)				

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Submission No. :

DATE :

	Yes	No	N/A	Comments
Sanitary Sewer:				
standard location (ie. 1.5m north or east of pavement centerline)				
location within easements or blocks				
accommodate external areas - adequate depth				
minimum depth of cover (ie. 2.7m below road grade in Res. areas)				
horizontal separation & vertical clearances				
minimum & maximum velocity (ie. 0.60 m/s & 3.0 m/s)				
water proofing, lids, etc.				
specify pipe size, material type & class				
Sanitary Services:				
standard service location c/w test fitting (clean-out?)				
minimum size (ie. 125mm dia to property line).				
min/max grades (ie. 2-8% for 125mm)				
Sanitary Manholes:				
maximum spacing based on pipe size (ie. 100m for 200mm, etc.)				
size, type & specification (ie. pipe size / OPSD No. or specified alt.)				
maximum pipe connection 90 degree change (no acute angles)				
inspection manhole location (ie. 1.5m from P/L)				
Roads:				
conform to standard road sections c/w dimensions in plan view				
sufficient extension of roadway to confirm match existing				
intersection daylight triangles				
cul-de-sac and bulbs restrictions & criteria (ie.length, radius, etc)				
temporary turning circles criteria (ie.signs, radius, etc)				
horizontal & vertical geometric design elements				
horizontal curve data indicated in plan				
curb radii at all intersection (standard or specified as req'd)				
original & finished ground at centreline of road plotted in profile				
all vertical data for proposed/finished road (3 decimals)				
street name and traffic control signs				
erosion protection on steep grades (ie. 6% or greater)				
Sidewalks & Walkways:				
pre-confirmed location(s) with Township				
typical road cross section for local, collector, arterial location				
dimensions (ie. 1.5m wide for sidewalk)				
curb depressions indicated at intersections, AODA specs				
provide daylighting at sidewalk intersections				
Easements:				
minimum width for watermain & sewer (based on dia and number)				
for rear yard catchbasin 250-450mm dia leads, min 3.0 m width				
Stormwater Management, Report, Plans & Manual				
Stormwater Report				
incl. related report recommendations (FSR, MSP, Enviro, Geo,etc)				
conforms to design standards (ie. CA, MNR, MOE, MTO, Town)				
site location plan				
pre to post catchment & drainage area plans				
sewer flow calculation sheets				
overland flow calculations/consideration of critical sections				
landscaping / restoration plans				
Pond Drawing(s)				
Operations & Maintenance Manual				

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Channels:				
minimum width (top of channel plus 6m maintenance)				
Drainage Plans (Scale 1:1000) :				
Storm:				
show major system overland flow routes				
Blocks required for overland flow between lots				
manhole and area numbers indicated				
size & grade of sewers				
existing contours shown				
Sanitary:				
show tributary areas				
identify external, commercial, industrial & institutional areas				
manhole and area numbers indicated				
size & grade of sewers				
Erosion and Sediment Control Plan:				
identify stockpile location, height, volume, drainage and fencing				
sediment pond location, live & dead storage, drainage area/limits				
detail of temporary outfall structures				
site stabilization requirements				
construction access & protection detail (ie. mud mat)				
perimeter silt fencing and containment swales				
restoration of disturbed areas & schedule				
erosion protection at outfall locations				
schedule for sediment control, construction sequence & restoration				
Streetlighting Plan:				
standard poles/lights, type/location per consultation				
all LED fixtures, luminaire wattage				
photometric plans, indicate min/aver/max levels matrix				
details, supplier shop drawings				
Utility Coordination Plan:				
hydro, communications, gas, TV, streetlights to be standard location				
street trees/plantings				
below ground structures				
dimension reduced sideyard setbacks or easements				
signing blocks - all utility companies with M.A. agreements				
- Electrical Consultant				
- Town Engineer				
Landscape Plan:				
standard tree type/location (one each lot, sideyards, etc)				
standard setback (pipes, hydrants, poles, driveways, etc)				
streetscaping, fencing, entry features, etc				
pond plantings				

Reviewed/Checked:

(signature)

 Design Engineer/Project Manager/P.Eng.