Reference No: Reference No: Subdivision: Consultant: Checked by: Date:

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ITEM	DESCRIPTION	COMMENTS
Α.	PLANNING PERMIT REQUIREMENTS	EDCM (Section 3)
	Has Planning Permit been issued?	,
	Have any elements of the Precinct Structure Plan and/or the	# EDCM (Clause 3.1)
	Development Plan been modified?	
	Does the permit require any further plans to be submitted prior	EDCM (Clause 4.1)
	to construction plan approval? Such as:- Development/Staging Plan;	
	Development/Staging Plan;Functional Layout Plan;	
	Building Envelope Plan;	
	Landscape Plan, etc.	
	Have all prescriptive planning permit conditions, which affect	# EDCM (Clause 4.1)
	engineering designs, been addressed? Such as:-	
	Provision of WSUD in accordance with 'Clause 56' Main road access upgrade (staging)	
	Main road access upgrade/staging;External outfall drain;	
	Major public utility alteration/upgrade, etc.	
	Have all procedural planning permit conditions for engineering	EDCM (Clause 4.1)
	plan approval been met? Such as:-	,
	Development/Staging Plan endorsed;	
	Functional Layout Plan approved;	
	 Plan of Subdivision lodged; etc. Do any proposed Section 173 Agreements impact upon this 	#
	application or require specific engineering content (e.g. Access	"
	to rainwater tanks, criteria for traffic signals)?	
	Do pre-existing agreements, bonds or permits impact upon this	#
	application (e.g. Works prior to this stage, results of a "trial" of	
	non-standard work, etc.)? Do proposals for other authorities' infrastructure have any	#
	impact upon Council's interests? Such as:-	"
	Open waterway cross section;	
	WSUD elements and/or major wetland area;	
	Trunk service location/alignment;	
	Above ground control cabinets/poles, etc.	
	Are typical cross sections consistent with objectives of the PSP and standard elements required of this submission?	# EDCM (Clause 4.7.1)
В	PLAN OF SUBDIVISION REQUIREMENTS	EDCM (Clause 4.2)
	Has subdivision been marked with enough pegs to enable	#
	meaningful site inspection for this application? Such as:-	
	Clearances from River Red Gums;Location of dams and wells;	
	Pole relocations on main roads, etc.	
	Are road widths adequate to contain all elements? Check:-	# EDCM (Clause 4.7)
	Cut/fill clear of possible building footprints;	,
	Main drains and trunk services;	
	Traffic management devices; Parimental On American delegation and flavors and devices.	
	Designated Q ₁₀₀ / gap overland drainage flows; and WSLID his retention avales and rain gardens.	
	WSUD bio-retention swales and rain gardens. Are splayed corners and/or radii adequate? Check:-	# EDCM (Clause 4.7.2)
	Intersections (3m x 3m min.) & lanes (2m x 2m min.)	" LDOW (Glause 4.1.2)
	Turning lanes and/or future pavement widening	
	Naturestrip width maintained at Roundabouts	
4.	Are linear reserves adequate for intended use? Check:-	# EDCM (Clause 4.8)
	Minimum width connecting to courts as per guidelines; Designated On a granted flow paths:	
	 Designated Q₁₀₀ overland flow paths; Maintenance vehicle access; 	
	Maintenance vehicle access;Paths clear of embankments, obstructions, etc.	
5.	Are lots with direct access onto Council reserves provided with	# EDCM (Clause 7.5.5)
J.	a Paper Road? Check:-	(2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.2.
	Minimum width 4m;	
	Connectivity with street network.	

ITEM	DESCRIPTION	COMMENTS
6.	Drainage easement shall be provided as necessary: For Council access to cut off drains;	# EDCM (Clause 12.10.5) EDCM (Clause 5.5.5)
	For outfall drains, and beClear of all TPZ's and other obstructions.	EDCM (Clause 5.3.1)
7.	Restrictions on the Plan of Subdivision shall be consistent with	#
	engineering requirements. Such as:-Access restrictions to main roads,	
	Minimum floor levels, and	
	Building envelopes.	
C.	NEIGHBOURHOOD DESIGN STRATEGY At design submission ensure elements approved during the	EDCM (Section 5)
	FLP stage have been correctly applied.	EDOW (Occilon 9)
	Drainage Strategy	# EDCM (Clause 12.3)
	WSUD elements and their location.Major storm flow paths.	
	Melbourne Water requirements.	
	Other authority requirements. (e.g. Parks Victoria)Allowance for future upstream catchment.	
	 Downstream property owners' approval to enter. 	
	Easements for Council maintenance access	
	 Environmental Protection Requirements Flora and fauna impacts. 	#
	Soil erosion prevention (Geotechnical Report).	
	Aboriginal and/or historic sites.Special construction (e.g. boring for tree protection).	# EDCM (Clause 5.3.1)
	Road Network	# EDCM (Clause 7.5.13)
	 Main road access requires FLP of both interim and 	# EDOW (Clause 7.5.13)
	ultimate intersections (at scale 1:200) to be provided	
	 concurrently with internal street designs. Road and path network and hierarchy to be in accordance with approved PSP or Development Plan. 	
	• Traffic generation figures for designs to be supported by	EDCM (Clause 4.4)
	 Sidra Analysis or Traffic Impact Assessment Report. Traffic management installations as per approved FLP. 	EDCM (Clause 4.4) EDCM (Clause 5.2.1 / 5.5.4)
	Urban Design Features	#
	 Non Standard public lighting must remain consistent across designated neighbourhood. 	
	Threshold treatments not allowed unless approved in	EDCM (Clause 10.15)
	advance and all Council Guidelines are satisfied.Provision shall be made for proposed uses on abutting	
	land (e.g. School, Town Centre, Wetland, etc.).	
	Vehicle and Pedestrian Movement Modified T and Y intersections are not allowed.	# EDCM (Clause 10.6.1)
	Typical street cross-sections contain all standard elements and	EDCM (Clause 10.1.3)
	clearances, including:-Main drains, flow paths and treatment-train elements	, , , , , , , , , , , , , , , , , , ,
	 Standard service space allocations for W, G, E & T. 	EDCM Standard (Fig. 003)
	Electrical & FTTP cabinet locations. Functional levelte to conform with AustReads Region Cuide. The property of the conform with AustReads Region Cuide. The property of the conform with AustReads Region Cuide.	, • ,
	Functional layouts to conform with AustRoads Design Guide for turning lane and taper lengths; clear zones and protection for fixed objects.	EDCM (Clause 10.2.2)
	Vehicle movements at intersections and other locations to be clear of nominated on-street residential parking spaces using the following turning templates:	EDCM (Clause 10.2.2)
	• Arterial Roads - Semi trailer and 12.5m radius when	
	 required to stop or 15.0m radius where no stopping. Connector to Connector - 8.8m service vehicle and a 15.0m.radius. 	
	 Bus routes - 12.5m ULF bus and a 15.0m.radius. 	
	 Connector into Access Street - 8.8m service vehicle and a 15.0m radius. 	

ITEM	DESCRIPTION	COMMENTS
	Access Street into Connector - 8.8m service vehicle and a	
	12.5m radius.Access Street to Access Street - 8.8m service vehicle and	
	12.5m radius.	
	 <u>Court heads and temporary 'dead ends'</u> - Three-point turn using an 8.8m service vehicle and a 10.5m radius. 	
	 Mid-block traffic management - Access and turning for 	
	applicable vehicles from list above.	EDCM (Clause 7.5.15)
	 <u>Splitter Islands</u> - Connector to Connector intersections shall comply without crossing the pavement centreline. 	
	Splitter Islands shall not be used to modify or change	
	priority at T-intersections between access streets.B2 Barrier K&C is mandatory except when other types	EDCM (Clause 7.6.6)
	required for medians and traffic management devices.	
	Footpaths and kerb ramps shall be DDA compliant.Vehicle crossings to be at least 7m apart.	EDCM (Clause 7.6.3)
	Provision for on-street car parking in residential zones	EDCM (Clause 7.5.1)
	shall be one space per lot.The extent of paving in T-headed courts must allow safe	
	pedestrian access and landscape amenity.	EDCM (Clause 4.4)
_	Confirm AADT (vpd) for Access and Connector streets.	LDOW (Clause 4.4)
D.	DOCUMENTATION [For design submission] The following supporting information is required to accompany	
	engineering construction plans.	
	Geotechnical Report	FDCM (Clause 44.2)
	Is Consultant pre-qualified on VicRoads Register?Is sampling interval & scope of testing adequate?	EDCM (Clause 11.3) EDCM (Clause 11.5.1)
	 Extent of existing filling to be investigated and shown? 	EDCM (Clause 10.2.1)
	Any remediation works or special engineering fill?	EDCM (Clause 10.2.3)
	Pavement DesignConsultant is pre-qualified on VicRoads Register.	EDCM (Clause 11.3)
	Subgrade CBR and soil type details supported.	EDCM(Clause 11.5)
	Minimum requirements for pavement materials met.	EDCM (Clause 11.6) EDCM (Clause 11.7)
	 Calculated ESA's to be consistent with street type. Pavement design satisfies minimum for street type. 	EDCM (Clause 11.7)
	Capping layer material is correctly specified.	EDCM (Clause 11.5.5)
	Drainage Strategy & Computations Consultant to provide bard convide of:	#
	Consultant to provide hard copy details of:- • Drainage strategy plan and quality modelling	EDCM (Clause 4.9)
	Computations complying with Council's Drainage Design	EDCM (Clause 12.3)
	Guidelines (incorporating EDCM Section 13);Catchment plan with sub-catchment areas and inlet points	EDCM (Clause 12.13)
	which can be readily identified, by inspection, with the	(
	content of computation outputs provided;External catchment boundaries shown to scale on a	EDCM (Clause 12.7.1)
	topographic plan;	, ,
	 Q₁₀₀ catchment plan, HGL for Gap Flows where applicable and flood level details; and 	EDCM (Clause 12.10.2)
	 WSUD analysis of inflow and downstream treatment. 	
	Engineering Construction Plans Provide and A1 two A2 and and electronic (PDE format) acts	EDCM (Clause 6.2)
	Provide one A1, two A3 and one electronic (PDF format) sets containing the following, as applicable:-	EDCM (Clause 6.2)
	Detail Engineering Plans, including works external to the	
	subdivision required by the planning permit.Reproduction of the applicable Plan of Subdivision.	
	 Typical Details, including pavement details. 	
	Signage and Line marking Plan.	
	 Road Longitudinal and Cross Sections. Intersection Details. 	
	 Intersection Details. Drainage Longitudinal Sections and Pit Schedule. 	
	 Plan of existing vegetation to be protected or removed. 	
	Details of "space allocations" for the provision of other	

ITEM	DESCRIPTION	COMMENTS
	 authorities' assets, including telecommunications. Siteworks Plan, showing cutting, filling, fencing and any permanent environmental, archaeological and heritage 	
	protection measures. Construction Specifications The full specification is not required but project specific	EDCM (Clauses 21 & 22)
	clauses, which either amend the VicRoads Specification or limit the nature of contract works, must be provided . Before the Pre-commencement Meeting the following	
	documentation shall be submitted: Priced Schedule of Quantities or consultant's estimate, Traffic Management Plan,	EDCM (Clause 18.3) EDCM (Clause 18.2)
	 A "Memorandum of Authorisation" from VicRoads, Construction Environmental Management Plan with:- 	EDCM (Clause 18.2) EDCM (Clause 18.1)
	Tree preservation and flora protection;Topsoil retention and re-use;	
	 Specific truck routes required by Council; and Measures preventing mud/debris on public roads, according to permit conditions and local laws. Evidence of contractor's IMS / OH&S systems in place. 	EDCM (Clauses. 19.1-2)
	Road Safety Design Audits Provide a certified audit, as appropriate and when required by Council,	# EDCM (Clause 6.2)
	Provide Access Auditor's report, of potential safety hazards for persons with a disability, when applicable. Other Authorities' Works	
	Provide plans and, where applicable, approvals for: Water mains – Engineering plans / design verification for Council approval of fire hydrant and hydrant mains.	EDCM (Clause 6.2)
	 Sewers – Engineering plans for Council approval of:- clearances from drains, including future extensions; Pit covers clear of footpaths where possible. 	EDCM (Clause 6.2)
	 Main Drain (Pipes) – Engineering plans and design verification for network <60 Ha. to Council standards. Main Drain (Waterway) - Engineering plans, design 	EDCM (Clause 6.2) EDCM (Clause 6.2)
	 waterway) - Engineering plans, design verification, wetlands vegetation design and detailed requirements of Council maintenance program. Gas mains –Whittlesea Township development zones. 	EDCM (Clause 16.6)
	 Telecommunications – Approval status from NBNCo. Public Lighting – Reticulation designs and application for non-standard fixtures received, if appropriate. 	EDCM (Clause 16.8) EDCM (Clause 16.9)
	Plan Checking Fee Consultant's estimate of construction cost accepted. Council invoice (0.75% of estimate) issued?	EDCM (Clause 6.5)
	Fee received by Council prior to approval.	
E1	LAYOUT PLAN Coordinates and Levels	EDCM (Clause 6.4)
	 Coordinates shall be geo-referenced to MGA55; 	((
	 TBM's to AHD required for each plan of subdivision; Details of BM used for level datum to be shown; 	
	Natural surface levels on every corner of every lot.	
	 Topography of larger areas to be shown by contours. Provide new PSM's throughout at 400m (max) spacing 	
	Set-out Information	
	Where plans show set-out by coordinates, dimensions adequate for Council checking shall also be included for:-	
	 Pipeline offsets and curved alignments, Drainage pits, end walls and other structures, Kerb alignment & parking bay dimensions, and 	
	Roundabouts, Islands and other traffic control devices.	

ITEM	DESCRIPTION	COMMENTS
	Site Inspection	#
	Confirm, on site, that the following are shown correctly:-	
	Dams, wells, depressions, watercourses requiring fill. Available avidence of existing filled areas.	
	 Available evidence of existing filled areas. Abnormal structures identified. 	
	 Instructions for preparation, backfilling and recording base 	
	levels prior to filling dams and watercourses etc.	
	Main road entrance, or temporary access, surveyed on	
	both sides for obstructions and other safety issues.	
	 Existing service locations, power poles, etc. Is there agreement by authorities to relocate problem services? 	
	 Existing trees (to be protected and to be removed). 	
	Council open space in or adjacent to subdivision that	
	requires, or would benefit from, filling?	
	Boundaries, adjacent to undeveloped land, requiring	
	permanent protection from overland run-off. Footpaths	
	 Footpaths Footpaths in streets to provide 'reasonable' continuous 	EDCM (Clause 10.9.3)
	accessible path of travel.	(,
	Access Places, not providing any link to another street and	#
	having no more than 6 lots:	
	 May have a 4m wide shared driveway zone. Access Streets/Places providing a link to another street or 	#
	with more than 6 lots:	"
	Shall have paths both sides.	
	Connector Streets:	#
	Shall have paths both sides (may include a shared path)	EDCM (Clause 10.6)
	one side). • Footpath Widths:	EDOW (Gladse 10.0)
	1.5m in residential areas;	
	1.8m in industrial/commercial subdivisions;	EDOM (OL 40 0 4)
	• Full width to kerb at shop/commercial/school precincts;	EDCM (Clause 10.9.1) EDCM (Clause 10.9.3)
	2.5m minimum for shared paths.	EDOW (Glade 10.3.3)
	 Shared paths are to be signed and line marked in accordance with AustRoads guidelines. 	
	 Kerb ramps shall be provided with TGSI's. 	EDCM (Clause 10.9.3)
	Bicycle paths in Open Space shall be of sufficient strength	
	for designated maintenance vehicle loading.	EDCM (Clause 10.11.4)
	Spoon drains are not permitted in new streets. Changes in particular string apparent. The street is treet and a string apparent. The street is a string apparent. The street is treet and a string apparent. The street is a string apparent. The string apparent is a string apparent. The street is a string apparent. The string apparent is a string apparent. The string apparent is a string apparent in the s	,
	 Changes in nature strip crossfall shall be introduced gradually or at intersections. 	
	 Provide drains under paths at low points in reserves. 	#
	Paths shall link up with existing Council footpaths.	#
	Kerb ramps shall align with paths proposed within open	
	space (as shown on Landscape Plans).	EDCM (Classes 40.42)
	Vehicle CrossingsResidential lots permitted only one single crossing.	EDCM (Clause 10.12) #
	 Aligned parallel to and 0.75m clear of side boundary. 	"
	Minimum width 3.5m (Where appropriate, 4m width at	
	1.5m offset preferred to suit future double garages).	EDCM (Figs. 040.9.044)
	Minimum clear space between adjacent crossings 7m.	EDCM (Figs. 010 & 011)
	1.0m clear of infrastructure (pits, poles, etc.) For corpor lots frontage location is preferred. All must be in	
	 For corner lots frontage location is preferred. All must be in accordance with AS/NZS 2890.1 (Cl. 3.2.3). 	#
	Provide Heavy Duty Vehicle Crossing, SD422B, for lane	
	access and truck turning at temporary dead-ends.	
	Do locations suit restrictive building envelopes on the Plan Out division on Page 1 Plan 2	#
	of Subdivision or Permit Plan?Provide grading and erosion protection detail for drives on	
	steep lots, especially those with high retaining walls.	EDCM (Clause 10.10.2)
	Generally, provision of vehicular crossings on industrial	#
	and commercial subdivisions is not required.	#

ITEM	DESCRIPTION	COMMENTS
	Kerbs and /Kerb & Channel	EDCM (Clause 10.8)
	B2 Barrier K&C is mandatory in the City of Whittlesea.	EDCM (Figure 008)
	All streets shall have standard Barrier Kerbs, except when	
	other types are recommended for safe design.	
	The transition from other existing kerb types to B2 shall be	
	achieved within the shortest possible distance. Sub Surface Drainage	FDCM (Clause 12 24)
		EDCM (Clause 13.24)
	Non-typical locations are to be shown on the plans. Provide temperary A C's at "and string".	
	Provide temporary AG's at "end strips". Provide "flush out" ricers at greats.	
	Provide "flush out" risers at crests. Provide "I ACla base quitable (vincular arread) quitable.	
	Ensure all AG's have suitable (unsubmerged) outlets. Provide AG's below longituding provident injects.	
	 Provide AG's below longitudinal pavement joints. Allotment Filling 	EDCM (Clause 12.3)
	Where lot filling, or re-grading, is required show finished	EDOW (Clause 12.5)
	surface levels at all corners and top of bank.	
	 The minimum slope shall be 1 in 150 (0.67%). 	
	Plans shall differentiate between minor/uncontrolled	
	regulation (≤200mm) and filling to Level 1 standard.	
	Street Nameplates, Signs and Line Marking	
	Main Road line marking to be approved by VicRoads.	
	New numbers shall be affixed to existing nameplates.	
	Use light poles for street nameplates where possible. Treffic Management Povices	ш
	Traffic Management DevicesDetailed design shall be in accordance with the intent of	# EDCM (Clause 10.1)
	Detailed design shall be in accordance with the intent of the approved FLP and AustRoads - Guide to Road	EDCIVI (Clause 10.1)
	Design.	
	Preservation of Trees and Significant Vegetation	
	Has location and description been transferred from Flora	
	Reports to Construction Plans accurately?	
	 All works to be clear of TPZ's, except "no dig" footpath. 	
	 The boring of services beneath TPZ's is not permitted unless investigation indicates no rock or impediment. 	
	Temporary construction fencing must be shown on plan for	
	all conservation reserves and other areas of significant	
	vegetation.	
	Include reference to Council standard tree protection	
	fencing requirements.	
	 Can proposed protection methods achieve objectives? 	
	Fencing of Council Reserves	
	Shared lot boundary fencing and other vehicle exclusion	
	measures along boundaries of all Council reserves shall	
	be shown on Engineering Plans. Abutting Roads	#
	 Future road widening requirements to be incorporated. 	["
	 Existing street title lines shall be shown and matched. 	
	New cross sections shall match existing construction.	
	Existing Services	
	 Research and check for existing services. 	
	 Depth and location shall be shown on drawings. 	
	Clearance to new works shall satisfy "asset manager".	
	Old trenches crossing new pavements to be noted for	
	reinstatement with FCR to the full depth of trench.	
	General Notes - Engineering Plans	
	Provide only job specific notes on plans. Po not replicate elements from standard drawings or the	
	 Do not replicate elements from standard drawings or the Standard VicRoads Specification. 	
	 Bar Scales shall be provided on all plans. 	
E2.	STREET LONGITUDINAL AND CROSS SECTIONS	
EZ.	Information Required on Longitudinal Sections	
	Natural surface levels along both building lines.	
	 Design levels for lip or top of kerb (not centreline) 	
L	_ 10.g 10.0 . 1	

ITEM	DESCRIPTION	COMMENTS
	Details at low points and all Cross Section locations.	
	 Grades to be shown as a percentage. 	
	Vertical curve lengths and I. P. levels.	EDCM (Clause 6.2)
	Scales, generally, to be 1:500 horizontal, 1:50 vertical.	EDCM (Clause 6.3)
	 Levels and grades of existing work being matched. 	
	Longitudinal Grades	EDCM (Clause 10.5.1)
	 Minimum 0.5% (0.75% for kerb returns <10.0m radius) 	EDCM (Clause 10.8.3)
	 Desirable maximums in EDCM (Table 3) shall apply. 	
	The use of absolute maximum values requires specific	
	justification and shall satisfy CFA access requirements.	FDCM (Clause 40 F 2)
	Vertical CurvesLevels to be shown at not greater than10m intervals.	EDCM (Clause 10.5.2)
	 Minimum VC on a centreline grade change to be 15m. 	
	Provide satisfactory sight distance, particularly at	
	intersections, complying with AustRoads standards.	
	Vertical Alignment	
	Connector and Access streets shall be designed so that:-	
	Footpath on low side suits lot grading. Privous within lots match design floor level (or let ESL)	EDCM (Clause 10.10.3)
	 Driveways within lots match design floor level (or lot FSL) within 4.5m of boundary or 6m from front of footpath at 1 in 	220W (Sidd30 10.10.5)
	4 maximum slope.	
	Steep vehicle entrances suit "Standard Car" clearance.	EDCM (Clause 10.10.2)
	Lot control OK for property drains provided at the front.	
	Matching Existing Works	
	 For future works survey to establish existing conditions shall be shown for 100m beyond the limit of works. 	
	 For existing K&C, locate and level 'dummy joints' over 	
	20m and show how smooth transition/match achieved.	
	Street Cross Section Design	#
	• Streets designed as overland flow paths shall contain the	EDCM (Clause 13.22.2)
	required "gap flows" with the following criteria:-	
	 TWL for Q₁₀₀ to be contained within street reservation in accordance with Melbourne Water LDM. 	
	 V/D_{av} ratio to satisfy Melbourne Water LDM. 	
	 D_{max} to satisfy Melbourne Water LDM. 	EDCM (Clause 13.22.3)
	Applicable freeboard may extend into lots up to 2m	
	• In "non-valley-floor" locations lots on the low side must be	
	protected by "permanent works" to freeboard level.	======================================
	Information Required on Cross Sections • Finished levels for	EDCM (Clause 10.7.1)
	 Finished levels for Limit of formation (top or toe of batters) 	
	Edge of footpath	
	Kerb and/or channel lip	
	Pavement crown	
	Natural surface levels at	
	Limit of formation (top or toe of batters	
	Title lines Changes in along	
	Changes in slope Offset from pegged deturn to items in a) 8 h) above	
	 Offset from pegged datum to items in a) & b) above. Datum to be shown at every cross section. 	
	 300 mm berm behind title line before batter slope. 	
	Paths above NS level shall be on FCR into firm natural	
	ground unless suitable fill to AS-3798 is approved.	
	Design TWL for WSUD swales and rain gardens.	
	Cross Fall Limits Street and feetpath cross falls shall be within these limits:	
	Street and footpath cross falls shall be within these limits:- Footpath – Min. 1:50; Max. 1:40;	EDCM (Clause 10.9.2)
	Nature Strips – Min. 1:40; Max. 1:10;	EDCM (Clause 10.9.2)
	Pavements – Min. 1:40; Max. 1:30;	EDCM (Clause 10.7.2)
	Court Bowls – Min. 1:40; Max. 1:15;	EDCM (Clause 10.7.3)
	WSUD swales – Max. 1: 6	

ITEM	DESCRIPTION	COMMENTS
	Embankments Slope and extent of batters shall satisfy the following: • Cut or fill shall be a maximum of 1 in 6 everywhere. • 1 in 4 is accepted on lots if slope ≥6 m horizontally. • In open space slopes may be steeper if "planted out". Retaining Walls	
	 Walls in subdivisions shall be grouted mass rock type:- For heights ≤1m use Council Standard Drawing. For heights of 1m to 2m use VicRoads Std. Drawing. For heights >2m a structural certificates are required. Show length & vertical limits on longitudinal sections. Profile of top to be smooth and generally match NS. Cut or fill not to exceed existing NS slope behind wall. 	
	 Rural Roads For rural and rural residential subdivisions special cross sections providing WSUD drainage and scour protection shall be determined at the FLP stage. 	#
E3	TYPICAL CROSS SECTIONS, SPECIAL DETAILS AND PAVEMENT DESIGN	
	 Typical cross sections shall be as submitted and approved on the Functional Layout Plan prior to design submission. Flexible Pavement Design For Industrial Streets and Arterial Roads use VicRoads Codes of Practice and/or AustRoads Guide to Pavement Technology. Subgrade assessment to include existing pavements. Flexible pavement composition to satisfy all guidelines. Roundabouts and signalised intersection designs to separately assess correct asphalt thickness and type. Check correct use of pavement materials. Flexible pavement for indented parking bays to satisfy minimum pavement composition. Weak Subgrade When unsuitable subgrade materials are identified (e.g. existing fill or saturated soils), proposed treatment shall be "approved in principal" prior to finalizing design solution. Rigid pavements Access Lanes/Places shall be in accordance with the 'Guide to Residential Streets and Paths, Cement and Concrete Association of Australia (C&CCA T51-2004). All other streets shall be in accordance with VicRoads RC 	# EDCM (Clause 10.6) EDCM (Section 11) EDCM (Clauses 11.8.1 - 3) EDCM (Clause 11.8.3) EDCM (Clauses 11.6.1-3) EDCM (Clause 10.5.4)
E4	 500.22 and AustRoads Publication AGPT02. Jointing as per C&CAA T51 to be shown on drawings. Pouring sequence to be prescribed on the drawings. INTERSECTION DETAILS, COURTS & PARKING	
	 Design Details Provide set out details and levels for radials and non-linear elements at not greater than 5m intervals, Provide pavement contours at not more than 250mm intervals, including existing pavement to be matched, All changes in pavement shape shall be "rounded" and "flat spots" <1:40 shall be avoided, Show all parking bay dimensions, 	
	 Kerb Ramps Ramps/pram crossings shall enable a continuous path of travel at right angles to the primary traffic direction. When (a) is not achieved provide directional TGSI's. 	# EDCM (Clause 11.9.3)
	 Threshold Treatments Alternative pavement finishes are not allowed unless, prior to a design submission, the proposed treatment is given "approval in principal". 	EDCM (Clause 10.1.5)

ITEM	DESCRIPTION	COMMENTS
	 Proposals shall be supported by a specification covering: Component materials; Surface finish and tolerances satisfying safety issues; Foundation preparation, jointing and edge restraint; Durability and / or product warranties, and Maintenance requirements. 	
	 Waste Collection Points Paved bin collection pads shall be provided when waste collection vehicles cannot access a lot frontage. Provision for waste collection bins in Access Lanes to include space clear of fences for mechanical pick-up. 	#
	 Kerb Radii at Intersections The desirable minimum radius to back of kerb is: Access Lane / Place / Street - 8.0m Connector Street - 12.5m Arterial Road - 15m If vehicle turning movements are still met, a reduction in 	# EDCM (Clause 10.8.4)
	 (a), for improved pedestrian priority, is encouraged. Circular Court Heads Specific approval is required at the FLP stage. For design of approved circular court heads:- Minimum radius to face of kerb – 10.5m. No reduction in naturestrip width at any point. Provide "heavy-duty" vehicular crossings to enable a 	# EDCM (Std. Dwg. 005)
	 Standard Service Vehicle to complete a 3 point turn. Court heads in steep terrain must provide a turning area with a maximum crossfall in any direction of 1:15 	EDCM (Clause 10.7.3)
	 Vehicle Turning Movements At intersections, traffic devices, courts, lanes and "dead ends" the following shall apply: Computer generated templates shall use a min. 5kph. Service vehicle may cross centreline in access streets. Turning vehicles must be clear of all on-street parking. 	#
	 Temporary "No Through Roads" Turning movements for a service vehicle shall complete a 3 point turn using two "heavy-duty" vehicle crossings. 	#
E5	DRAINAGE PLANS & COMPUTATIONS	
	 Layout Plan All external (outfall) drainage lines require easement rights to have been established to Council satisfaction prior to plan approval. Minimum surface slope on lots to be 1:150. Lot control by drains not at the lowest corner require:- Minimum depth 0.45m & minimum gradient 1:80. 	#
	 No conflict with sewer. Provide temporary cut off drains to protect allotments from external runoff when stage boundary on high side. Permanent cut off drains to be designed for 1% AEP and connect to drainage system, all within easements. Provide connection for each lot as per Std. Drawings. HD connections beneath any paving shall use a pit. Use double entry pits where grade >7% and at confined low points. 	EDCM (Figs. 016/017/018)
	 Change in direction > 90° at pits is not acceptable. Drains to be located on the high side of streets. Minimum pipe size under road pavement 300mm dia. Pipes ≤750mm dia. to be RRJ. Pipes >750mm dia. to be FJ with sand bands. Maximum distance between pits shall be 90m. In circular court heads and at street bends minimise length of trench beneath pavement and K & C. 	

ITEM	DESCRIPTION	COMMENTS
	 Curved pipe alignments shall use RRJ's complying with manufacturer's specifications for minor deflections. Pipes ≥1050mm dia. shall use a curved alignment in place of pits for changes in direction exceeding 10°. Joints shall be complete RC bandages in accordance with Melbourne Water standard drawings. 	#
	 When no Melbourne Water Drainage Scheme, obtain approval to discharge into main drain or watercourse. Are outfall conditions satisfied as follows: Connected to watercourse or constructed drain? Erosion protection or drop structure as required? Existing invert level and HGL for outlet shown? Receiving bed gradient downstream shown? Are existing capacities downstream OK? 	#
	 Do large dia. drains and pits have adequate clearance from utility service mains and light poles? Flood levels and extent to be shown on plan. Are there any trapped low points on subdivision boundaries requiring an overland flow path? 	#
	 Do main drains and/or overland flow paths suit MWC Drainage Scheme and Development Plan objectives? Avoid interruption of local overland flow paths by sags at intersections. All drains to suit future road widening/duplication. 	#
	Longitudinal Sections • Show trench backfill type;	
	 Show treflet backfill type, Show Hydraulic grade lines, including outfall control; Maximum HGL height shall not exceed the lower of:- 2m above obvert, or 300mm below surface or K&C invert level; TWL at GPT outlet for normal operating condition; 	EDCM (Clause 13.9)
	Show spacing between anchor blocks. Pit Schedule	
	 Include the following information for each pit:- Pit type Internal dimensions and depth. Inlet(s) and outlet sizes and invert levels. Standard Drawing Number (where applicable). Cover detail (type, size, duty rating, product code, etc.) 	
	GPT Manufacturer, Model and Capacity. Drainage Computations	Use Council Guidelines
	 Council Guidelines, incorporating EDCM Section 13, shall apply. The main requirements are as follows:- Pit losses shall be determined using VicRoads RDG Part 7 – Drainage Design. 	OSC Courion Culdennes
	 ARI values to be used:- Residential development: 1 in 5 years Commercial/Industrial development: 1 in 10 years Individual Public Facilities: Varies nitial time of concentration (maximum): Varies Fraction Impervious (f):- Subdivisions: Use 'Typical Values' in Guidelines 	
	Individual sites: Calculated coefficient of Runoff (C _y):- Calculated • Design program inputs shall be provided in a format that	
	 enables efficient desktop review of outputs. External catchment area must agree with Council's topographical base maps. Water Sensitive Urban Design 	
	Provision of WSUD shall be discussed with Council at the FLP stage. Designs for agreed system shall include:-	#

ITEM	DESCRIPTION	COMMENTS
	 Requirements of "WSUD - Growth Area Council Guidelines" and the "Whittlesea Addendum"; Construction arrangements shall make provision for maintenance of planting to be as for landscaping AND resetting rain gardens at end of maintenance period. Adequate space for all street elements shall be provided to avoid loss of vehicle parking spaces, and Life cycle maintenance details shall be documented. 	
	 Water Features Wetlands, Lakes and Retarding Basins which are located on Council Reserves and contain elements maintained by Council shall be designed to satisfy a safety audit to Royal Lifesaving Society guidelines or Melbourne Water LDM standards as appropriate. Slopes requiring grass mowing shall not exceed 1 in 6 Pipelines discharging to wetlands, either directly or via grassed waterways, shall be fitted with a GPT. 	
E6	UTILITY SERVICES DETAILS	
	Where spatial requirements for services vary within a street, offsets vary or above ground facilities are proposed, details shall be drawn at 1:500 scale which show, in addition to Council assets, the following information: Service alignment at points of change and/or conflict. Above ground items (lighting, pillars, service cabinets). Under pavement conduits.	#
	 Provisions for maintenance access. Likely service connections (ends of conduits and/or tapping points) must be clear of any paving. 	
	 Details on road and drainage plans must agree with other authority design/installation drawings. 	
	 Gas and Water conduits:- Show conduits crossing road pavement, footpaths and parking bays and extending to the property boundary. Common points of entry (CPE) to be provided where possible in accordance with common trenching code. 	EDCM (Clause 14.1)
	 Location for corner lots – frontage preferable. At right angles to main where possible and centrally located (unless CPE dictates otherwise). Conduits to be referenced on kerb face both sides. Provide water conduits to reserves and roundabouts. Conduit type & size – Provide 150mm dia. for fire services into Industrial, Commercial & Multi Unit Sites. 	
	Fibre To The Premise (FTTP) Has NBNCo or another provider confirmed agreement to provide FTTP? If no contract with NBNCo, ensure that:- Optic fibre conduit network designs satisfy FTTP planning permit conditions as per guidelines; Plans show distribution network connection point;	EDCM (Clause 14.2)
	Multiple conduits installed in any abutting arterial road frontage as per guidelines. Sewer Reticulation	
	 Services offset table on sewer plans is consistent with the table on road and drainage plans. No unnecessary maintenance access covers within paths or pavements. All Council drains to be shown with correct clearances. 	
	 Water Reticulation Services offset table on watermain plans is consistent with the table on road and drainage plans. Council is responsible for checking that fire hydrants 	
	satisfy CFA requirements.	

ITEM	DESCRIPTION	COMMENTS
	 Electricity and Public Lighting Is lighting provided for all roads including arterial roads, paper roads and principle pedestrian links. Consistency of lantern and pole types with abutting developments/stages. Appropriate lighting standard (AS 1158) and category for each road. Non-standard lighting application attached. Spacing of poles is according to AS 1158. Conflict points are sufficiently lit (e.g. roundabouts, splitter islands, bends, footpath steps, etc.) Are pole locations in accordance with Section 8.5 of the City of Whittlesea - Guidelines for Urban Development. (CoW GUD) Is kiosk sub-station location in accordance to Section 8.5.1 of CoW GUD. 	EDCM (Clause 16.7)
NOTES:		
EDCM	Denotes the requirements of the Engineering Design and Construction Manual for Growth A	reas are included here.
#	This item usually addressed at FLP stage. If not, then check details for consistency with approximately addressed at FLP stage.	proved FLP.