

TOWN OF AJAX

DESIGN CRITERIA

SECTION J

**MULTIPLE FAMILY DWELLING, COMMERCIAL,
INDUSTRIAL OR INSTITUTIONAL LANDS**

J 1.00 SITE PLAN AGREEMENT

The Developer of all multiple family, commercial or institutional lands shall be required to enter into a "Site Plan Agreement" with the Town of Ajax prior to the commencement of construction of any building or service within the parcel of land.

A separate "Site Plan Agreement" with the Region of Durham may also be a requirement for development. The Developer shall contact the Region of Durham for information with regard to this. This document is to be executed prior to the commencement of construction work.

J 2.00 REGIONAL MUNICIPALITY OF DURHAM RESPONSIBILITY

The Region of Durham is responsible for all sanitary sewers and watermains that are constructed or proposed for construction on all road allowances and registered easements within the Town of Ajax. The Region of Durham is also responsible for road work within the regional road allowances.

Drawings showing the location, size, grade invert elevations, material and bedding requirements for all sanitary and watermain service connections shall be prepared and submitted to the Region of Durham for approval. Engineering drawings shall also be prepared for all sanitary sewers and watermains that are required to be constructed within road allowances or registered easements to service the subject property. These drawings shall be prepared to meet the Region of Durham's requirements.

The Region of Durham is responsible for the collection of revenue for water consumption, and therefore, the supply and "metering" arrangement for the subject property shall also be approved by the Region of Durham.

J 3.00 CONSULTING PROFESSIONAL

The Developer shall retain a qualified consulting professional to prepare all engineering drawings and to supervise the construction of all engineering services. The person shall act as the Developer's representative in all matters pertaining to the design and construction of the services in the development.

J 4.00 ENGINEERING DRAWINGS

J 4.01 REQUIREMENTS

A minimum of 10 sets of engineering drawings shall be required for each development. The drawings included in each set shall be titled as follows:

- (a) Site Plan
- (b) Site Grading Plan
- (c) Site Servicing Plan
- (d) Landscaping Plan

- (e) Parking Layout for Underground Garage (if applicable)
- (f) Sedimentation and Erosion Control Plan as per Section M

Additional engineering drawings shall be prepared where required, or when requested, by the Engineering Section of the Planning and Development Department.

All engineering drawings shall be prepared from one base plan, at a minimum scale of 1:250 and shall contain the following information:

- (a) survey plan
- (b) a key plan showing the site location
- (c) a north arrow
- (d) the street names, lot and Registered Plan numbers, and property dimensions
- (e) the outline of all buildings indicating the building numbers and unit numbers
- (f) the roadway and driveways
- (g) adjacent land features
- (h) existing land features (trees, sewers, watermains, hydrants, etc.)
- (i) the reference bench mark (geodetic) used to establish vertical control on the site

J 4.02 SITE GRADING PLAN

The site grading plan shall show the following information:

- (a) centre line of road grades at 15 m intervals along all existing streets bounding the property, and existing grades
- (b) a legend indicating which are existing and which are proposed elevations
- (c) contours at maximum 0.5 m intervals to indicate the existing elevations of the site. These contours shall extend to a minimum distance of 15 m beyond the property limits to indicate the grading and drainage patterns of the adjacent lands. As an alternate to contours, spot elevations may be noted on the drawings to illustrate existing grade conditions provided these elevations were obtained from field survey on a regular grid pattern with the interval not to exceed 15 m.
- (d) cross sections and sketches, as required, to clarify the proposed grading, particularly in relation to adjacent lands, proposed elevations on paved areas, around proposed buildings, along swales, along roadways, parking areas, driveways, catchbasin rim elevations, and any other elevations necessary to establish the grading and drainage patterns for the development. Arrows shall be used to indicate direction of the surface drainage.
- (e) all manholes, catchbasins, hydrants and valves shall be shown by a symbol with a legend provided
- (f) all sidewalks and walkways
- (g) all building elevations shall be established and referenced to a "Finished First Floor" or a "Finished Entrance Floor" elevation and a "Finished Basement Floor" elevation
- (h) pavement structure design shall be provided
- (i) roadway/driveway dimensions and curb radii including location and details of all existing adjoining curbs and pavement

- (j) the location of embankments, retaining walls, stairs
- (k) all trees, shrubs adjacent to roadways.
- (l) fencing
- (m) traffic control signage and pavement markings

J 4.03 SITE SERVICING PLAN

The Site Servicing Plan shall show the following information:

- (a) all existing underground services on the streets, and easements adjacent to and/or within the limits of the property
- (b) the location, size, grade, invert elevations of all existing storm and sanitary service connections to the property
- (c) the location and size of all existing watermain connections to the property
- (d) the basement floor elevations of all buildings to be constructed
- (e) calculations and plans showing the location, size, length, grade, for all sanitary sewer, appurtenances and services to be constructed within the development
- (f) calculations and plans showing the location, size, length, grade, for all storm sewer, appurtenances and services to be constructed within the development
- (g) calculations and plans showing the location, size for all watermain, appurtenances and services to be constructed within the development
- (h) the location of all roof water leaders that are to be connected to the storm sewer
- (i) all construction notes required to describe the construction details or requirements.
- (j) traffic control signage and pavement markings

J 4.04 LANDSCAPING PLAN

The Landscaping Plan shall be prepared by a qualified Landscape Architect. The Landscaping Plan shall show all landscaping details as required by the Site Plan Agreement.

The Landscape plan shall show the details of all landscape proposals as required by the Town's Landscape Architect.

The Landscape plans shall illustrate the following:

- (a) Details of tree and shrub plantings (Numbers, Sizes, Species, etc.)
- (b) Detail of ground treatments (Pavings, Granulars, Mulches, etc.)
- (c) Details of site furniture
- (d) Details of site features (Gates, Walls, Steps, Fences, Fountains, Sculptures, Outbuildings, Trellises, Arbours, etc.)
- (e) Existing site features to be preserved(vegetation, Architecture, etc)
- (f) All grading details including contours describing landforms and spot elevations.
- (g) Critical dimensions pertinent to the Landscape Design
- (h) All manholes, catchbasins, hydrants, valves, street lights and other servicing features that appear above grade.

J 4.05 ELECTRICAL SERVICES PLAN

The Electrical Services Plan shall be prepared by a qualified Electrical Consultant. The Electrical Services Plan shall show all details of the electrical distribution system and the site morality lighting (on buildings).

The Electrical Services Plan shall be submitted to the Ajax Hydro for approval.

J 5.00 DESIGN REQUIREMENTS

J 5.01 SITE GRADING DESIGN

- (a) The drainage of the site shall be self-contained.
- (b) The grading of the site shall be compatible with the elevation of the surrounding lands.
- (c) All grassed embankments shall have a maximum slope of 3:1 but 4:1 preferred.
- (d) The grade of grassed or other landscaped areas shall have a maximum slope of 10% and a minimum slope of 2%.
- (e) Swales on grassed areas shall have a minimum slope of 2% and a maximum slope whereby the velocity for the flow contained does not exceed 5m/sec.
- (f) The maximum length for any drainage swale shall be 75 m.
- (g) The minimum depth for any drainage swale shall be 150 mm.
- (h) The maximum depth for any drainage swale shall be 0.5 m.
- (i) The maximum slope shall be 3:1 but 4:1 preferred.
- (j) All driveways shall have positive drainage towards the roadway, minimum grade 2%, maximum 8%.

J 5.02 ROADWAY DESIGN

- (a) All roadways shall be designed in accordance with the most recent engineering requirements of the Town of Ajax.
- (b) The minimum pavement design for all multiple family roadways shall be:
 - subgrade compacted to 95% proctor density
 - 300 mm compacted depth of Granular "B" (100% Compaction)
 - 150 mm compacted depth of Granular "A" (100% Compaction)
 - 50 mm compacted depth of HL8 Asphalt base course
 - 40 mm compacted depth of HL3 Asphalt surface courseThe minimum compacted depth of Granular "B" (100% compaction) is to be 450 mm for Commercial, Industrial and Institutional heavy duty pavement.
- (c) All driveways in multiple family projects shall be paved with asphalt from the edge of the roadway to the garage. The minimum pavement design for all driveways shall be:
 - subgrade compacted to 95% proctor density
 - 200 mm compacted depth of Granular "A" or crushed limestone
 - 50 mm compacted depth of HL3A Asphalt (driveway mix)
- (d) All roadways serving multiple family projects shall be designed to facilitate passage of emergency and service vehicles with minimum 12 m centre line radius. On dead end streets,

provisions shall be made for turning movements of garbage, snow removal and emergency vehicles.

- (e) The minimum grade for any multiple family roadway shall be 1% and the maximum grade shall be 6%.
- (f) The minimum grade for any driveway in a multiple family project shall be 2% and the maximum grade shall be 8%. This maximum grade creates an undesirable condition and should be used only when necessary due to site conditions.

J 5.03 SITE SERVICING DESIGN

- (a) All sanitary and watermains including backflow prevention devices shall be designed in accordance with the requirements of the Region of Durham Standards and the Ontario Building Code.
- (b) Storm sewer and Storm Water Management Facilities shall be designed as per the Storm Water Management Practices Planning and Design Manual published by the MOEE and Town of Ajax Design Criteria.
- (c) All storm sewers in residential developments shall be located within the limits of the roadway. Roof leaders shall discharge to the ground surface, subject to no adverse impact to the safety of pedestrians and traffic. The building design shall be completed with due care to avoid roof leaders discharge directly on walkway/driveway. Foundation drains shall be connected to the storm sewer.
- (d) Sewers shall be located a minimum distance of 3.0 m from the face of the building.

J 5.04 LANDSCAPING DESIGN

Proposals for design and materials contained within the Landscape Plans shall meet the approval of the Town. The Landscape Consultant shall contact the Town Landscape Architect to resolve and agreed upon design reflecting the requirements of the Town.

J 5.05 ELECTRICAL DESIGN REQUIREMENTS

The requirements for the design of the electrical distribution system and the morality lighting shall be agreed upon with the Ajax Hydro prior to the commencement of the design.

J 6.00 INSPECTION DURING CONSTRUCTION

Inspection of site servicing works will be performed by the Engineering section

All watermains are to be pressure tested to in accordance with the requirements of NFPA 24 (Standard for the Installation of Fire Service Mains and Their Appurtenances), the Town of Ajax Criteria and the Ontario Building Code.

Firelines from the property line to the backflow preventer and all domestic watermains are to be disinfected to meet the requirements of the Region of Durham and the satisfaction of the Town of Ajax.

J 7.00 AS CONSTRUCTED DRAWINGS

After all construction is complete, the design drawings shall be amended to incorporate the changes and alterations made during construction and submitted to the Town. The "as constructed" drawings should be submitted to the Town of Ajax and the Region of Durham for their records.

J 8.00 FINAL INSPECTION

Upon completion of all construction, the Town of Ajax shall conduct a final inspection of the works. All deficiencies found during this final inspection shall be immediately corrected by the Developer. This final inspection is carried out for the benefit of the Town of Ajax and shall in no way relieve the Developer of his obligations under the Condominium Act and the Site Plan Agreement.

J 9:00 CERTIFICATION

Upon completion of construction the Consulting Engineers shall provide the proper certification to the Town of Ajax that all works have been constructed in accordance with the approved plans and specifications, and in accordance with good engineering practices.

Foundation Certificate is required as per AS 502
Preliminary Grading Certificate is required as per AS 503
Copy of all watermain tests and their results

Title:

Submission

A. GENERAL

- Check drawing requirements as per Town Standard Section 'J'
- Fencing requirements
- Buffer screening and tree planting
- Traffic management report and recommendations (if applicable)
- Stormwater management report (if applicable)
- Functional servicing report (if applicable)
- Noise report (if applicable)
- Easement width adequate for maintenance
- Tree removals to be approved
- Garbage enclosure location and details
- Engineering drawings to be approved by subdivision
design consultant for overall compatibility
(for sites located in approved subdivision)
- Cost estimates for engineering features
(eg. retaining wall, noise and privacy fences, etc.)

B. TRAFFIC/PARKING

- Roadway, driveway & curb radii dimensions (entrance geometry)
- Refer to Planner for parking requirements
- Check pavement structure
- Traffic signage and pavement markings to be shown
- Sidewalk locations

C. STORM DRAINAGE SYSTEM

- Check downstream capacity
- Review servicing report
- Review external drainage areas
- Review storm sewer calculations and drainage area drawings (pipe sizes, slopes, pipe length, and pipe material)
- Check calculation sheets (sewer and MH hydraulics)
- Check manhole spacing and location - pipe location/alignment
- Alignment of CB and lot connections
- Pipe strength and bedding, special bedding requirements for pipe in fill areas, minimum pipe cover
- Check for conflicts of pipe crossings (crossing information is to be shown on drawings)
- Compare overland flow routes with lot grading
- Check as-built drawings for location and inverts of existing stubs (sewers and water services)

D. STORM WATER MANAGEMENT

- Reference to area storm water management report for appropriate requirements
- Review on-site and roof storage capability, type, of control etc.
- Design include any roof top, surface/underground storage; manhole type grit separators will require MOE approval. Outlet control device should operate under head (i.e. be lower than storage)

E. LOT GRADING

- Silt and erosion controls (or notes)
- Paved parking area grades
- Min. 1% Max. 8%
- Landscape areas
- sod grades 2% to 10%
- embankment (slopes) to be max. 3:1
- Driveway grade
- Min. 2% Max. 8%,
- Existing and proposed grades
- Direction of surface water runoff, slope in % indicated with arrows
- Ensure boundary elevations compatible with adjacent
properties - overland flow routes maintained
(e.g. watercourse/creeks) - ponding not created
- swales not discharging to adjacent properties
- Show existing elevations on adjacent properties
- Any terracing required must be shown on the plan
- Noise barriers and vibration mitigation as per noise report
- Show all easements
- Check all notes