

APPENDIX "A"

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ACCEPTABLE STANDARDS FOR DRAWING SUBMISSIONS

This Appendix outlines the minimum standards for design and record drawings which will be acceptable to the Municipality. This Appendix is included for information only and does not form part of the Town of Smithers Subdivision Servicing Bylaw.

A.1 INTRODUCTION

All design drawings and record drawings, except record drawing transparencies, shall be signed and sealed by a Professional Engineer registered in British Columbia.

All drawings shall be sized A-1 (594 mm x 841 mm). Record drawing transparencies shall be 3 mil double matte mylar. Plan-profile drawings shall be 2 mm x 20 mm grid with the top half plan and the bottom half profile. The title block shall be located in the lower right hand corner of the sheet, with the consultant's name shown only in a 200 mm x 50 mm space beside the title block. A sample of a prepared plan-profile sheet may be obtained from the Municipality.

A.2 SYMBOLS AND LETTERING

Standard symbols for the various facilities shall be used on all drawings. Standard details for items such as manholes, catchbasins, hydrant assemblies, etc. need not be shown in detail, unless deviation from details shown on the applicable Standard Drawings is proposed or has occurred.

Lettering shall be an open style vertical gothic style applied using a mechanical template, computer graphics system or equivalent, using generally upper case lettering and black india ink. Lettering shall be a minimum of 2.0 mm high and shall be fully legible.

North arrows shall point either toward the top of the sheet or toward the left hand edge of the sheet and shall be placed on the right hand side near the top of the sheet.

A.3 SCALES AND DIMENSIONING

All scales shall be standard metric scales and shall conform to the following.

General Plan: not less than 1:1000
Key Plan: not less than 1:5000

Plan-Profile Drawings
Plan: 1:500
Profile: Horizontal 1:500
Vertical 1:50

Intersection Details

Plan:	1:200
Profile:	Horizontal 1:200
	Vertical 1:20

Miscellaneous Details: Appropriate metric scale

Pipe sizes shall be shown in millimetres using 1" - 25 mm (ASTM designation). Distance and location dimensions shall be shown in metres and, where existing dimensions are in imperial scale, shall be soft converted using the factor one foot = 0.3048 m.

All elevations shown on drawings shall be based on Integrated Survey (Geodetic) datum.

A.4 INFORMATION TO BE INCLUDED ON DRAWINGS

A complete set of drawings shall consist of a general plan, key plan, plan and profile of roads and services and additional plans showing special details. For urban subdivisions, two separate sets of plan-profile drawings are required to show:

- o roads, streets, lanes, walkways and related facilities, storm and sanitary sewers, watermains and related facilities
- o underground wiring and ornamental street lighting

All known existing underground services, watercourses and structures on or adjacent to the site shall be shown, along with a notation as to whether they are to be retained, removed, relocated or redirected.

The following information shall be included with design drawings submitted for approval, with design information and notes added so as to be easily removable at the record drawing stage.

A.4.1 General Plan

- o all mains, including gas mains
- o all existing and proposed property lines for subdivision
- o all existing and proposed buildings for development
- o location and monument number of integrated survey monuments and any other monuments and/or bench marks used in preparing the design drawings

A.4.2 Key Plan

- o the key plan may be drawn on one corner of the General Plan
- o location of subdivision or development with respect to major roadways and trunk water and sewer lines
- o drainage pattern and tributary drainage area

A.4.3 Roads
Plan/Profile

Plan	:	Property lines
	:	offsets to ditch lines, edge of pavement curbface
	:	grading limits, appropriate horizontal curve information
	:	BC and EC for all horizontal curves
	:	road and right of way widths
	:	sidewalk and walkway locations and widths
	:	culvert locations, sizes and invert elevations
	:	catch basin locations and rim elevations
	:	curb return radii
	:	driveways
	:	manhole cover elevations
	:	street name
	:	poles, fences and other surface features
Profile	:	centreline and gutter profiles
	:	vertical curve information
	:	BC and EC for all vertical curves
	:	vertical points of intersection and grades between points
	:	centrelines of intersecting roads
	:	original ground profile at centreline (and on both sides of right-of-way as applicable)
	:	ditch invert profiles as applicable
	:	culvert inverts
	:	walkway profiles
Intersection Plan/Profile		
Plan	:	gutter elevations at maximum 7.5 m intervals
	:	curb return data
	:	finished road elevations at maximum 7.5 m grid
Profile	:	profile of gutter along curb returns showing minimum of five (5) elevations along the curb return and extending 7.5 m in each direction from the ends of the curb return.
Details	:	typical road construction details
		typical pavement structure(s)
		curb, gutter, sidewalk details
		walkway details
		sidewalk crossing details

A.4.4 Storm and Sanitary Sewers, Watermains

Plan	:	centreline of sewers and watermains
	:	centreline of ditches
	:	property lines
	:	pipe size and material, including pressure class
	:	locations of manholes, catch basins, cleanouts, culverts, service connections, valves, fittings, hydrants and related appurtenances in relation to roadway, easement and/or lot property lines.
	:	invert elevations of all storm and sanitary service connections at the property line
	:	minimum basement elevations where applicable.
	:	varying backfill or surface restoration requirements,
Profile	:	existing and finished ground elevation on pipe centreline
	:	invert of water and sewer pipe(s) profile
	:	ditch profiles
	:	invert elevation of each pipe entering or leaving manholes and cleanouts and at all changes in gradient,
	:	slope (in percent) of the pipe(s)
	:	location and elevation of all other services, including service connections, which cross the pipe(s)
Details	:	manholes, catch basin and cleanouts, cover and frame and intersection details
	:	typical service connections
	:	pipe bedding, trench and anchor block details
	:	storm inlet/outlet details
	:	valves, thrust blocks, hydrants, standpipe, air-release valve details

A.4.5 Underground Wiring and Street Lighting

Plan	:	roadway, easement and lot property lines
	:	location of underground ducting, overhead wiring, street light poles, power poles, telephone poles, kiosks, service and control equipment and all related appurtenances
	:	all other existing and proposed underground and overhead utilities
	:	wiring diagrams for street lighting

A.4.6 On-Site Servicing Drawings

Off-site services in municipal utility rights-of-way shall be included in the set of drawings for off-site services. A separate and distinct set of plans shall be submitted for on-site services on private property and these services shall not be included on the same plans as off-site services located in municipal utility rights-of-way.

On-site services may be shown on a plan drawing which includes the following minimum information:

- o size and location of all water mains, valves, fittings, hydrants and appurtenances
- o size, slope, location and design capacity of all sewerlines, invert elevations of manholes, sumps and major pipe intersections
- o basement and/or floor slab elevations for all buildings
- o clearance where pipes cross
- o existing and proposed elevations around the site perimeter, at key points at pavement and building edges, catchbasin rims, etc.
- o if warranted by site topography, existing and proposed contours

A.4.7 Record Drawings

Record drawings shall clearly illustrate the work as it has been constructed, shall accurately locate all services and service connections and shall include all changes from the drawings as originally approved for construction. Road cross-section sheets, standard detail sheets, general plan, key plan, intersection detail plan-profiles, etc. need not be submitted as record drawings.

A.5 DRAWING SUBMISSIONS

Drawing submissions are required as follows:

- a) preliminary layout plan (2 paper prints).
- b) upon acceptance in principle of a), preliminary servicing plan (2 paper prints).
- c) upon acceptance in principle of b), detailed design drawings for review (2 sets, paper prints) one set may be returned for revisions, if necessary.
- d) revised detailed design drawings for review (2 sets paper prints), repeated as necessary.
- e) upon acceptance of c) or d), one additional complete set of paper prints, plus 2 sets of paper prints of waterworks drawings.
- f) upon receipt of any required Provincial Government approvals, and upon notification by the Municipality's Engineer, sufficient additional paper prints to allow five complete sets of the latest accepted drawings to be assembled. (Two sets, stamped and signed "Approved for Construction" will be returned to the Developer's Engineer when all applicable agreements have been signed and all required security deposits, cash deposits and insurance documentation has been received by the Municipality).

- g) after detail design drawings are accepted, the Owner shall engage a registered B.C. Land Surveyor to perform all legal surveys and prepare the subdivision plan and all utility easement plans for registration.
- h) upon completion of the work, record drawings consisting of 2 sets of paper prints of drawings which are signed and sealed, one set of full sized positive transparencies of drawings which are not signed or sealed and the "original" and one set of copies of service record sheets in a form acceptable to the Municipality, which shall be signed and sealed.