

# HYBRID CADASTRE FOR ALBERTA

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**A mélange of coordinates & monuments**

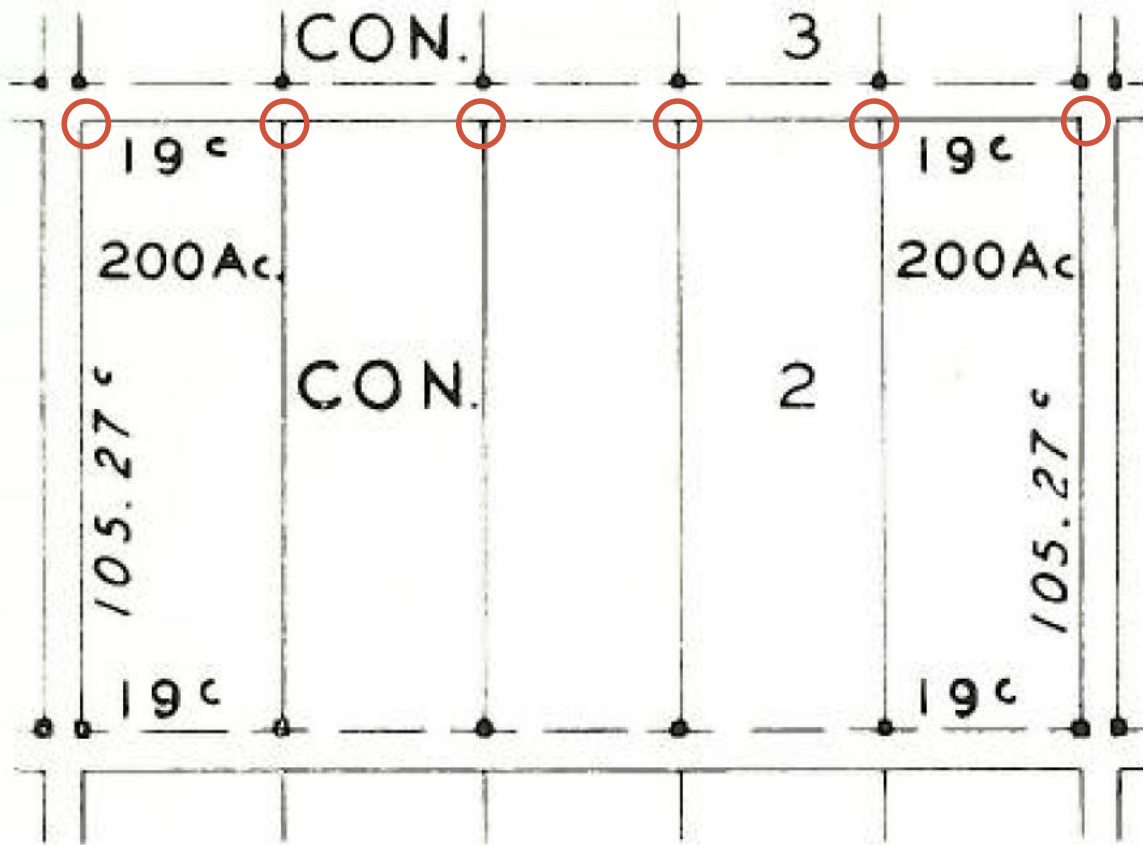
Geo-Alberta, September 2013

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# Mélange: It has ever been thus

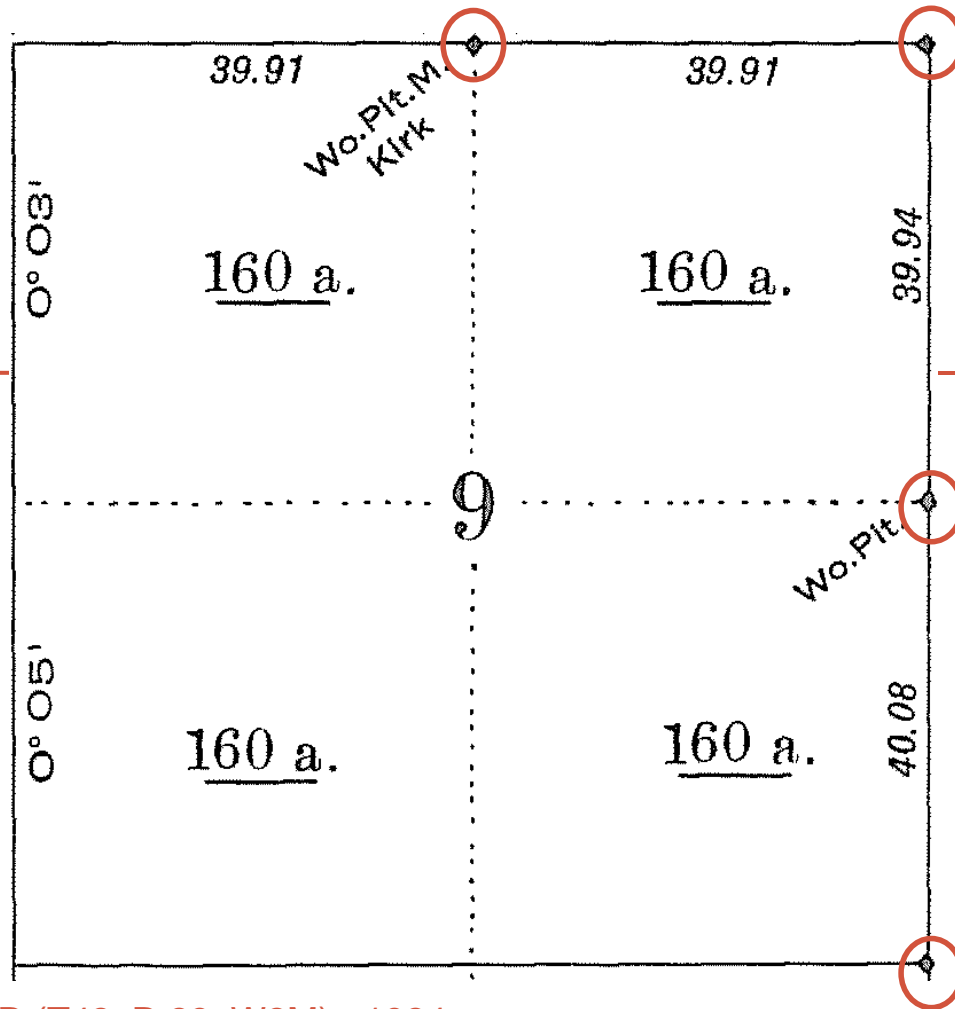
- Sporadic monuments in Ontario township systems
  - Sporadic monuments in DLS systems
  - Sporadic monuments for Alberta blocks; 1912-1987
  - Sporadic monuments along Alberta-BC boundary
- 
- Witness monuments for land liable to flooding
  - Witness monuments in lakebeds
  - Deferred monuments for s.47 plans

# Sporadic: Ontario townships



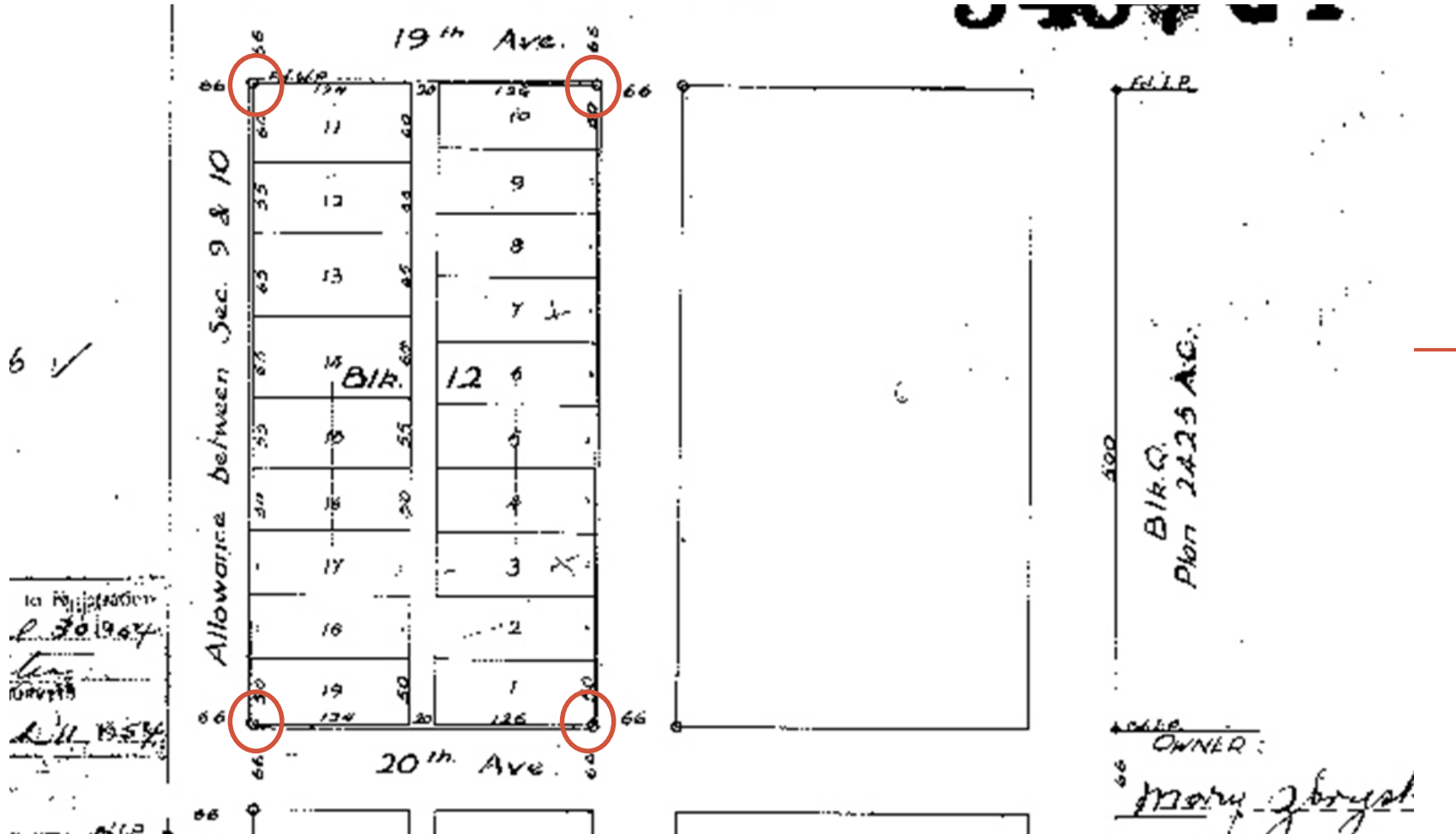
No monuments

# Sporadic: DLS townships



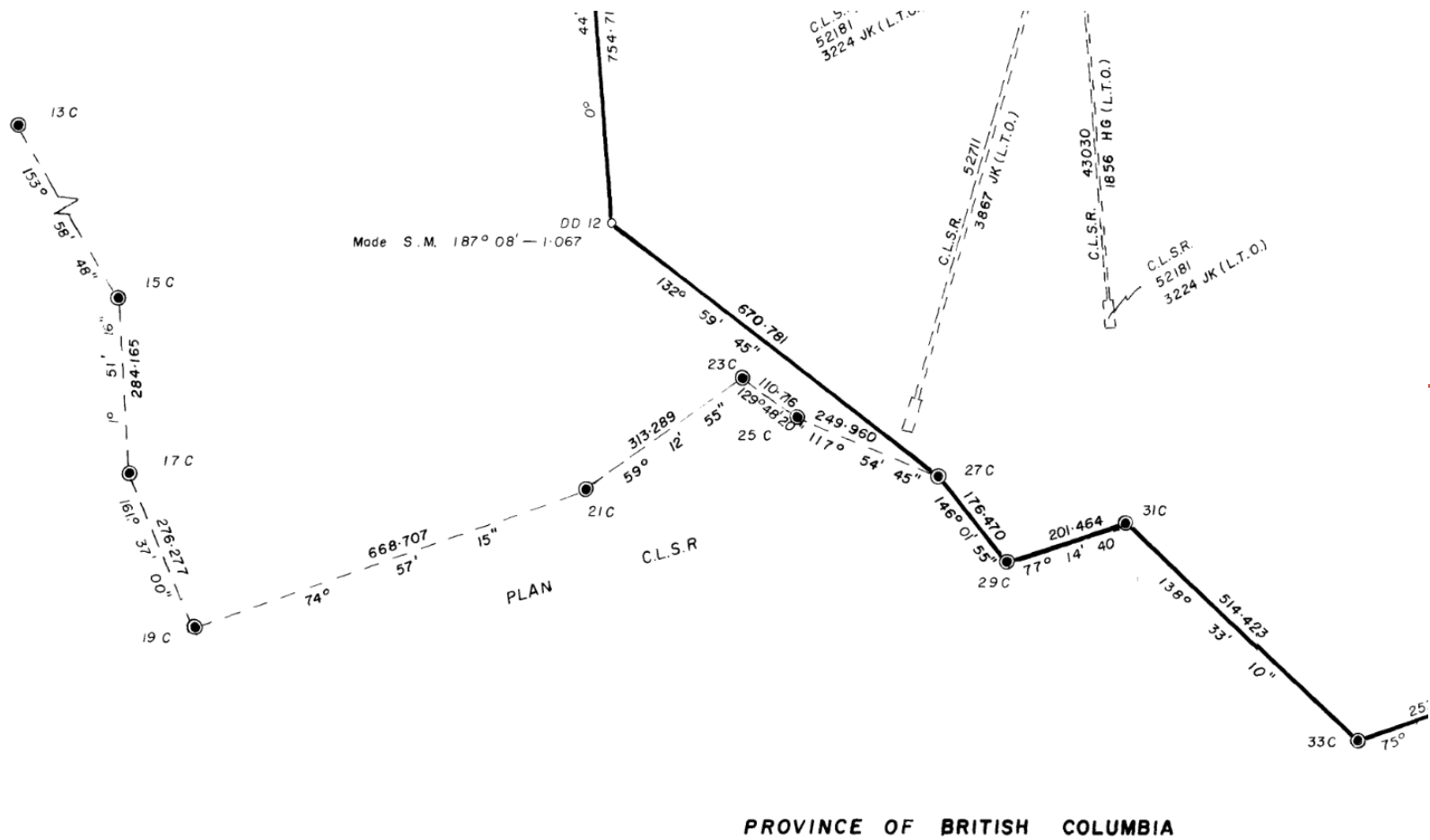
Plan 94621 CLSR (T42, R 28, W2M) - 1924

# Sporadic: Alberta blocks, 1912-1987



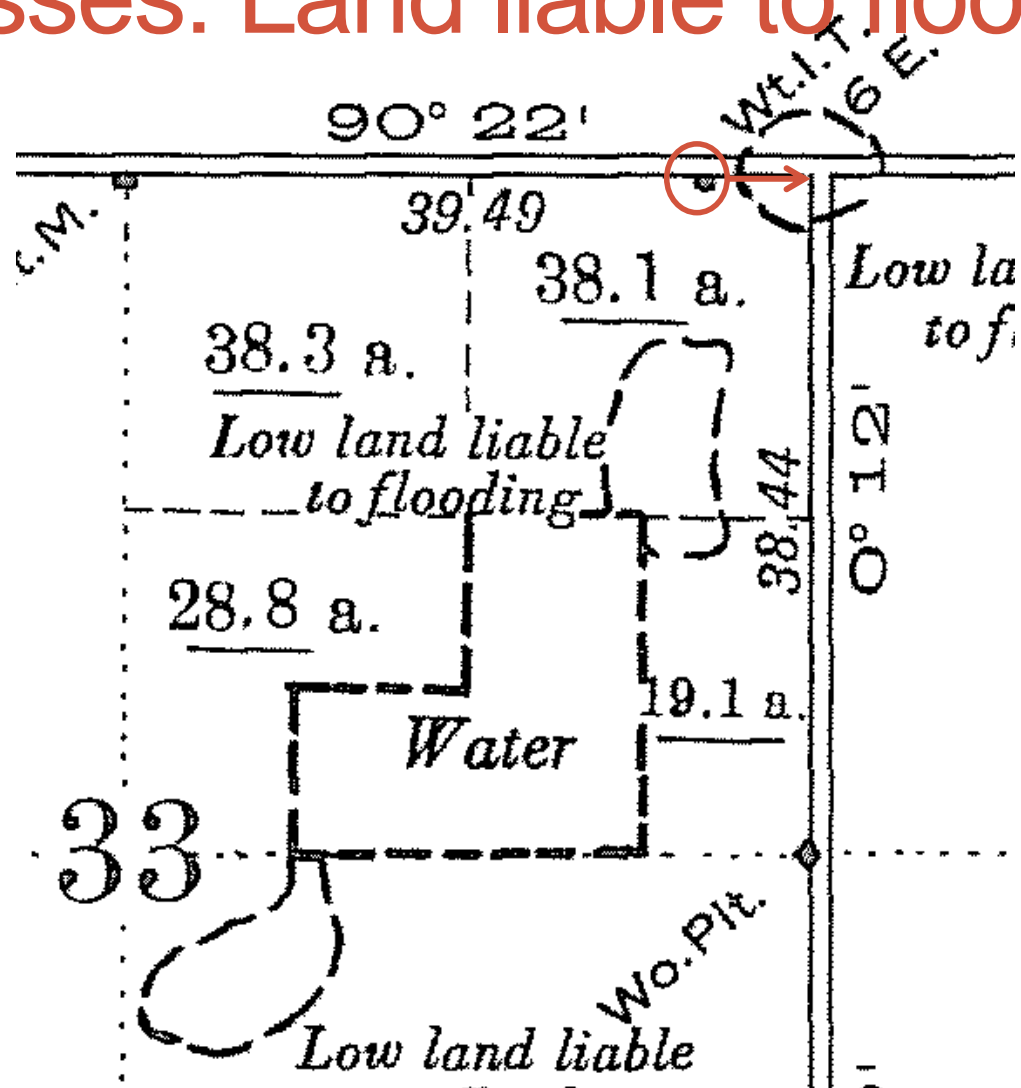
Plan 3457GT (City Calgary) 1954

# Sporadic: Along Alta-BC boundary

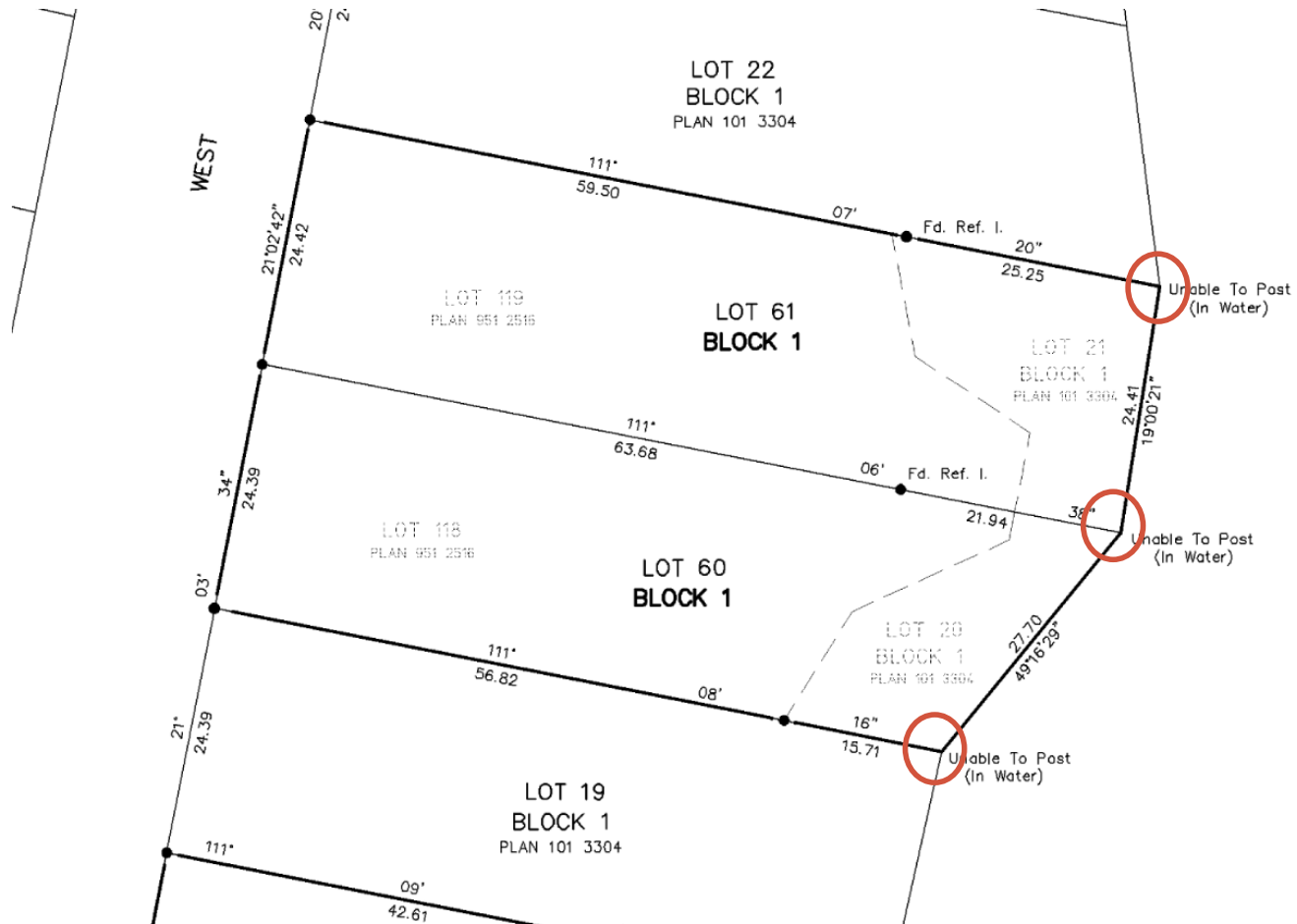


Plan 67271 CLSR (Banff) 1980

# Witnesses: Land liable to flooding



# Witnesses: In lakebeds



Plan 1110553 (Lake Chestermere) - 2011



# Deferred: Section 47 plans

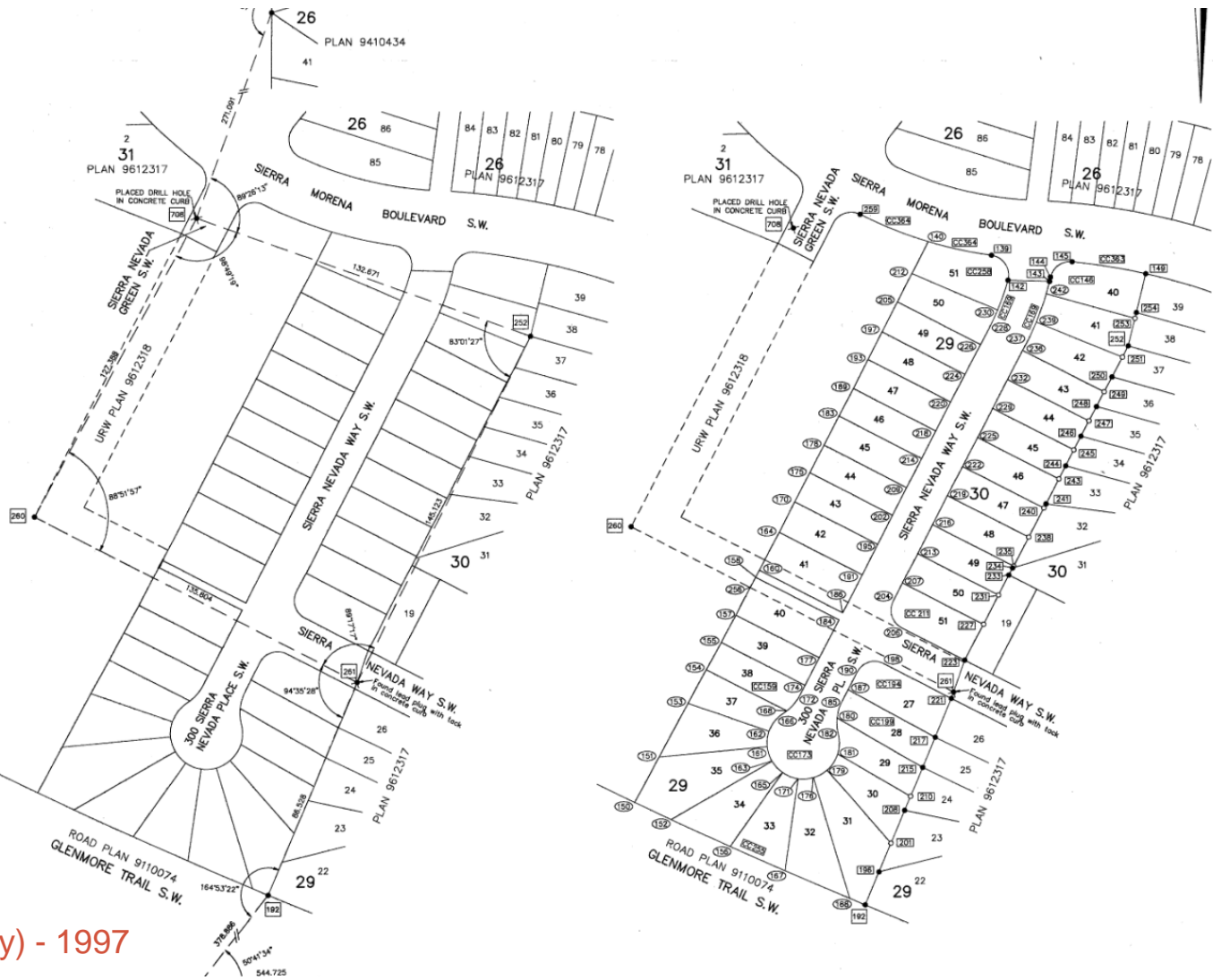
TABLE OF CO-ORDINATES

MAPPING PLANE CO-ORDINATES BASED ON NAD27, 3' TM, AND REFERENCE MERIDIAN 114° WEST.

ALBERTA SURVEY CONTROL MARKERS				REFERENCE CONTROL MONUMENTS			
NUMBER	NORTHING	EASTING	NUMBER	NORTHING	EASTING		
947507	5653114.298	-12710.034	192	5652977.073	-12871.243		
113266	5653488.672	-13093.240	252	5652796.770	-12773.253		
241959	5652292.499	-12558.630	250	5652718.999	-12708.723		
251389	5652277.479	-13103.019	261	5652636.925	-12837.978		
			708	5652831.087	-12898.265		

PROPERTY CORNERS AND CURVE CENTRES

NUMBER	NORTHING	EASTING	NUMBER	NORTHING	EASTING
139	5652820.807	-12823.965	204	5652691.073	-12860.669
140	5652825.950	-12847.533	205	5652803.318	-12859.170
142	5652811.418	-12817.761	206	5652680.976	-12857.429
143	5652810.997	-12802.404	207	5652697.874	-12857.173
144	5652812.575	-12808.037	208	5652612.563	-12856.379
145	5652818.331	-12793.943	209	5652733.609	-12855.663
CC 146	5652810.875	-12794.734	210	5652617.854	-12854.163
149	5652813.886	-12765.639	CC 211	5652687.644	-12854.001
150	5652613.888	-12957.331	212	5652683.929	-12853.710
151	5652632.614	-12948.193	213	5652708.830	-12851.541
132	5652609.133	-12943.666	214	5652744.501	-12850.064
133	5652632.740	-12937.367	215	5652628.634	-12849.640
154	5652665.330	-12930.595	216	5652719.721	-12845.941
135	5652675.563	-12925.091	217	5652639.967	-12844.902
136	5652632.614	-12925.091	218	5652624.540	-12844.902
157	5652685.795	-12919.587	219	5652730.613	-12840.342
158	5652700.034	-12912.267	220	5652765.742	-12839.144
CC 159	5652664.254	-12911.532	221	5652654.537	-12838.800
160	5652702.702	-12910.896	222	5652741.505	-12834.743
161	5652636.498	-12907.912	223	5652668.863	-12833.868
162	5652642.235	-12907.222	224	5652776.091	-12833.824
163	5652630.999	-12906.139	225	5652786.396	-12829.143
164	5652716.941	-12903.576	226	5652787.320	-12828.051
165	5652626.745	-12902.229	227	5652682.333	-12826.943
166	5652649.134	-12901.795	228	5652794.814	-12824.198
167	5652929.972	-12901.339	229	5652763.288	-12823.544
168	5652649.936	-12900.651	230	5652800.213	-12821.658
CC 169	5652833.666	-12899.773	231	5652693.289	-12821.311
170	5652738.366	-12897.702	232	5652774.180	-12817.945
171	5652624.434	-12896.395	233	5652700.830	-12817.434
CC 172	5652636.027	-12895.548	234	5652703.472	-12816.076
CC 173	5652637.793	-12894.478	235	5652704.180	-12815.711
174	5652659.466	-12893.780	236	5652785.071	-12812.345
175	5652739.258	-12892.103	237	5652787.958	-12810.862
176	5652624.856	-12891.632	238	5652715.072	-12810.112
177	5652669.797	-12888.468	239	5652795.663	-12807.306
178	5652749.607	-12886.782	240	5652725.964	-12804.513
179	5652627.650	-12885.574	241	5652787.582	-12803.722
180	5652647.182	-12881.824	242	5652806.389	-12803.594
181	5652633.665	-12881.628	243	5652736.855	-12798.914
182	5652641.031	-12881.381	244	5652741.772	-12796.386
183	5652710.499	-12881.183	245	5652747.747	-12793.747
184	5652684.036	-12881.148	246	5652732.885	-12790.673
185	5652653.623	-12879.922	247	5652758.639	-12787.715
186	5652686.704	-12879.777	248	5652763.999	-12784.959
187	5652657.881	-12877.733	249	5652769.530	-12782.116
188	5652579.565	-12877.168	250	5652775.112	-12779.246
189	5652770.848	-12875.863	251	5652782.337	-12775.419
190	5652644.999	-12874.382	252	5652786.770	-12773.253
191	5652700.943	-12872.457	253	5652797.069	-12770.735
192	5652577.073	-12871.843	254	5652799.257	-12770.200
193	5652781.499	-12870.263	CC 255	5654288.635	-12112.624
CC 194	5652660.971	-12867.714	256	5652696.145	-12914.267
195	5652712.368	-12866.583	CC 258	5652813.381	-12824.997
196	5652589.455	-12866.057	259	5652836.202	-12823.239
197	5652792.089	-12864.943	260	5652718.999	-12928.723
198	5652667.639	-12864.285	261	5652636.925	-12837.978
CC 199	5652645.395	-12863.918	CC 363	5652980.733	-12819.176
200	5652650.261	-12863.931	CC 364	5652976.764	-12802.282
202	5652723.260	-12860.984			



Plan 9710123 (Calgary) - 1997

# Hybrid cadastre: A perfect storm

- Poor monument survival rates
- Burgeoning use of positioning technology
- Increasing activity on Alberta Crown lands
- Success of using coordinates for 500 forestry parcels
- Need to renew 8,000 Crown land dispositions

Monument survival rates = 65%



Is such a monument a public good?



# Burgeoning use of positioning technology

90% of surveyors use Precise Point Positioning; Active Control; Real time GNSS corrections

(SGB – NRCan; 2013)



# Increased activity: Alberta Crown lands

Coordinates used: 500 forestry parcels

Renewing: 8,000 Crown land parcels