

Municipal District of Wainwright No. 61

Multi-lot Subdivision

Procedures and Standards Manual

May 2008



(Revised January 2017)

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1. Purpose for implementing this Manual:

The procedures and standards manual is designed to ensure that all multi-lot country residential development requests are assessed equally and fairly. The purpose is to enable the Municipal District of Wainwright No. 61 to apply a standard that meets the goals outlined in their Municipal Development Plan and also to meet the requirements prescribed in Section 17 of the Municipal Government Act, R.S.A. 2000.

2. Implementation of the Procedures and Standards Guidelines:

The procedures and standards may be applied in all subdivision applications. Such decisions shall be at the sole discretion of the Municipal Planning Commission or the Council for the Municipal District of Wainwright No. 61.

The procedures and standards shall be applied in all applications where the subdivision will result in six (6) or more parcels being created on a ¼ section of land. This consideration brings the Procedures and Standards Manual into harmony with the requirements of Sections 21, 22 and 23 of the Water Act and Section 9(1) of the Water Regulations.

3. Environmental Assessment:

The developer shall provide a Phase 1 Environmental Assessment of the proposed development site, prepared by a qualified third party, which will identify all contamination and hazardous material found within the boundaries of the proposed development site. The report is to include the location of any existing or prior petrochemical, industrial or commercial facilities. Based on the outcome of the Phase 1 Environmental Assessment, the Municipal Planning Commission or the Council of the Municipal District of Wainwright No. 61 may require that a further assessment be conducted along with the development of a remediation plan.

4. Ecological, Historical and Archaeological Assessment:

The developer shall provide an Ecological, Historical and Archaeological Assessment of the proposed development site, prepared by a qualified third party. The report will identify any "species at risk" as defined by Alberta Sustainable Resource Development, all historically significant features, either natural or man-made, and all archaeological features or sites which are found to be present within the boundaries of the proposed development site.

5. Subdivision Groundwater Supply Report:

The developer shall select and hire a qualified Groundwater Consultant to prepare and certify a Subdivision Groundwater Supply Report. In accordance with Section 23(3) (a) of the Water Act, the consultant must be a professional engineer, professional geologist or professional geophysicist whose competence lies within the groundwater field. The report shall be consistent with any approved Water Management Plan and shall include:

- a) the quantity and quality of groundwater available for household use within the proposed subdivision,
- b) potential interference with existing groundwater users and
- c) a Quality Assurance Statement from the consultant.

6. Residential Subdivision Soils Report:

The Developer shall select and hire a qualified Soils Consultant to prepare and certify a Residential Subdivision Soils Report. The consultant must be a professional engineer or a professional geologist whose competence lies in the field of soils analysis and private household sewage systems. The report shall include:

- a) test results and an evaluation of the site's water table,
- b) test results and an evaluation of percolation rates,
- c) an analysis of the site water well logs,
- d) the potential for long term, satisfactory on-site sewage disposal that gives consideration to the cumulative effect of all existing sewage disposal systems (including those on adjacent land) and all new sewage disposal systems.
- e) the type of private sewage disposal system that should be used on the proposed lots and
- f) a Quality Assurance Statement from the consultant.

7. Impact Assessment on Adjoining Property:

The developer shall provide an assessment of the impact that the development will have on the adjoining properties and the municipal infrastructure. The assessment shall include:

- a) the existing storm water and seasonal run-off patterns and the steps being taken to ensure that the development does not adversely affect the flow of water either into or out of the proposed development site,
- b) the effect that the increased traffic generated by the development will have on adjoining properties and on the municipal roads that provide access to the development site and
- c) recommendations regarding any upgrades to the municipal roads that are needed to accommodate the increased traffic.

8. Outline of Utility Services:

The developer shall provide an outline of the utilities services to be installed, which will include water and sewer, power, street lighting, natural gas, telephone, cable services and Canada Post mailboxes.

9. Internal Roads within a Subdivision:

The developer shall construct all internal roads and approaches to the standards as described in the attached Schedule A. Where the Municipal District's road that provides access to the subdivision has a paved surface, the internal road in the subdivision shall also be paved; where the Municipal District's road that provides access to the subdivision is any other surface than pavement the internal road shall be a cement stabilization surface. The developer shall consult with the Director of Road Construction throughout the construction stage to ensure that all standards are being met. All road allowances within a country residential subdivision are required to be 100 ft. wide and the developer is required to construct an approach for each lot.

10. Development Agreements and Security/Collateral:

The developer shall enter into an agreement which outlines the requirements that are to be met by the developer in the design and construction of the proposed multi-lot residential subdivision. The developer shall provide collateral in a form acceptable to both the Municipal Planning Commission and Council for the Municipal District of Wainwright No.61, which can be relied on by the municipality should deficiencies occur that the developer does not rectify.

11. Supporting Documents:

- Full Color Aerial Photograph, that is at least 12" x 12" in size, of the proposed development site
- Topographical Map, that is at least 24" x 24" in size, of the proposed site. The map is to show elevations throughout the development site as well as all water courses, sloughs and oxbows. The map is to also include any easements or right-of-ways that are registered on the title to the development site.
- Site Plan, that is at least 24" x 24" in size, that is drawn to scale and provides the measurements for each lot within the subdivision, the location and dimensions of all roads and approaches, the location and dimensions of all Municipal Reserves, Environmental Reserves, Public Utilities Lots, storm water management corridors and all access and egress points.
- Utilities and Signage Plan, that is at least 24" x 24" in size, which will show the location of all utility services, which will include power, street lighting, telephone, water and sewer services and natural gas supply. The plan is to also show the location of all traffic control signs and all street identification signs. The Plan will also show the location, if applicable, for the Canada Post mail boxes.
- Discretionary requirements to include all Engineering studies, well water assessments, geotechnical assessments and any other assessments or studies that are deemed necessary by the Municipal Planning Commission or the Council of the Municipal District of Wainwright No. 61

12. Staging of the Development:

The developer shall provide a schedule which will outline the time-lines that will be followed in constructing the subdivision.

13. Reporting:

- The aforementioned reports and supporting data shall be submitted to the Municipal Planning Commission for review and comment prior to an application being made to the Subdivision Authority.
- The developer is expected to report to the Municipal District of Wainwright No. 61 any situation that arises that may adversely affect the completion the subdivision development.
- The time-line for a decision on the Application for Subdivision will not begin until all of the information required has been submitted in a form that is acceptable to the Subdivision Authority and the Municipal District of Wainwright No. 61.

Schedule A

ROADWAYS within Country Residential Multi-Lot Subdivisions

Roads shall be designed in accordance with the geometric design standards outlined in the latest edition of the Alberta Infrastructure and Transportation's (A.I.T.) "Standard Specifications for Highway Construction" and "Specifications Amendments and Supplemental Specifications for Highway and Bridge Construction".

In addition to the above, the design of the residential roadways shall be according to the attached cross-section plan, "Residential Subdivision Roadway" with an 8.5 meter (m) finished top and a 30 meter right of way. The design speed of the residential road is to be 60 km/h with a posted speed of 50 km/h.

Road Intersections

1. The grades at intersections for all roadway classification shall not exceed 2% for a minimum distance of 30 meters, measured from the shoulder edge of the receiving road.
2. Flares at intersecting roadways shall have the following minimum radius from shoulder to shoulder:

- | | |
|------------------------------------|-------------|
| a. Residential access | 10.0 meters |
| b. Residential collector and local | 15.0 meters |

Culvert Sizes

Culvert size requirements shall be determined through the storm water drainage analysis; the minimum sizes of culverts are as follows:

- | | |
|---------------------------------|--------------------|
| a. Roadway cross culvert | 500 mm (20 inches) |
| b. Residential approach culvert | 400 mm (16 inches) |

Culverts shall be new galvanized C.S.P. (corrugated steel pipe) with a minimum wall thickness of 1.6 mm, or as required by the loading criteria, and have beveled ends.

ROAD CONSTRUCTION

The road grade shall be constructed as per the latest edition of A.I.T. specifications.

Top soil/organic material

All top soil and organic matter on the roadway shall be removed and preserved for use in finishing ditches and back slopes.

Subgrade Preparation

Prior to placing granular base course, the completed subgrade shall be scarified to a minimum depth of 150 mm (6 inches). The loosened material shall be windrowed to the side and the exposed surface shall be thoroughly compacted, the windrowed material shall then be uniformly mixed and compacted to obtain 100% SPD at optimum moisture content. The subgrade is also to be proof-rolled with a representative of the MD-Public Works Dept. to ensure no deflections.

Granular Base Course

All granular base course material shall be placed in lifts not exceeding 150 mm (6 inches) and compacted to 100% SPD. The Base course is also to be proof-rolled with a representative of the MD-Public Works Dept. to ensure no deflections.

Pavement Structure

A geotechnical report with recommended pavement designs shall be prepared by a recognized engineering agency, employed by the Developer and/or Developer's Engineer, submitted to the MD for review.

Cement Stabilization Application Rate

Standard mix design for quoting purposes will be 6% cement. Based on the project, quantity required will be 298 tonne/km. This calculation is based on the following formula with the assumption of a soil density of 1950kg/m³.

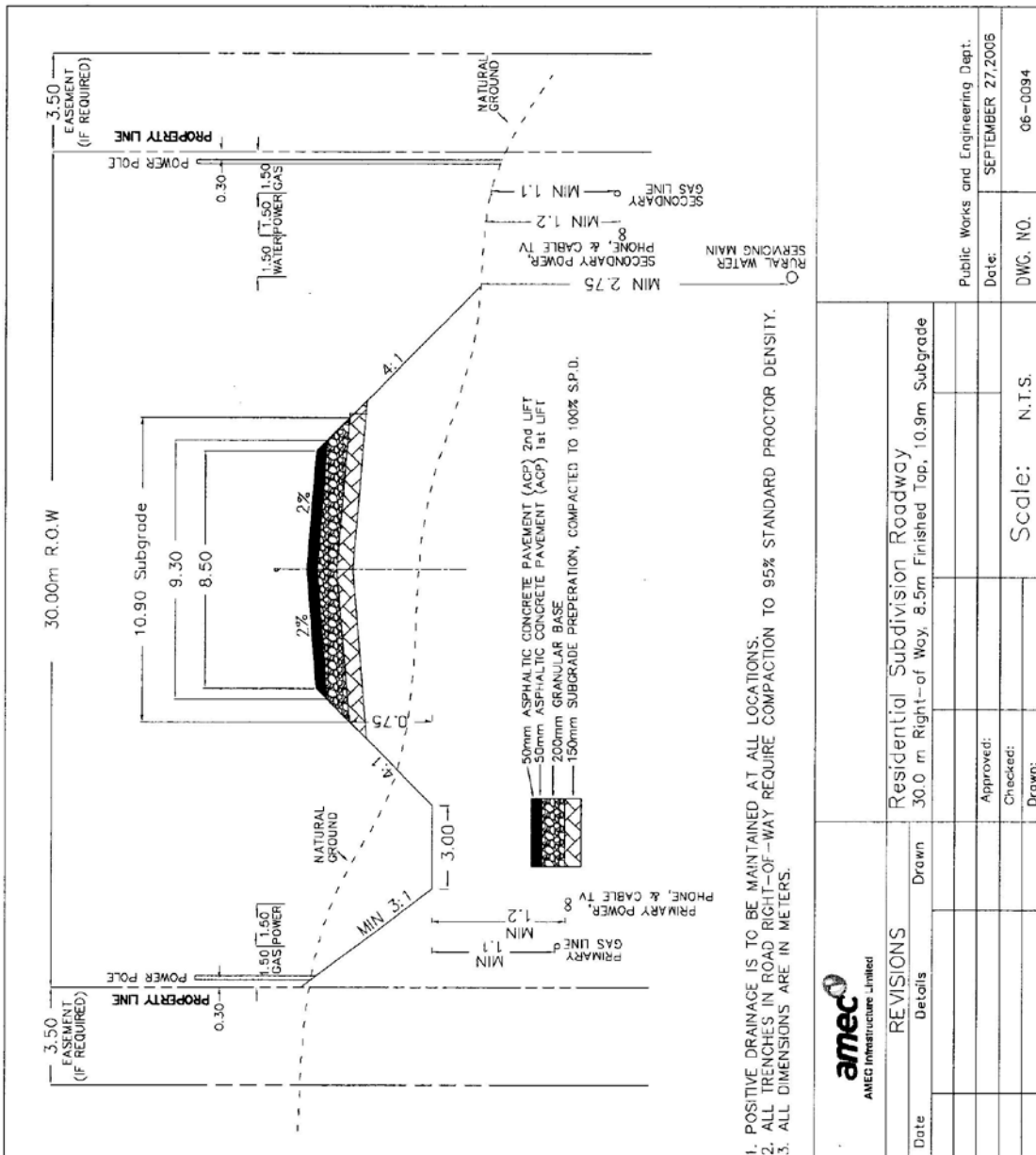
Assumption:

Soil density 1950kg/m³

Road dimension

- width 8.5 m
- depth 300 mm
- length 1 km

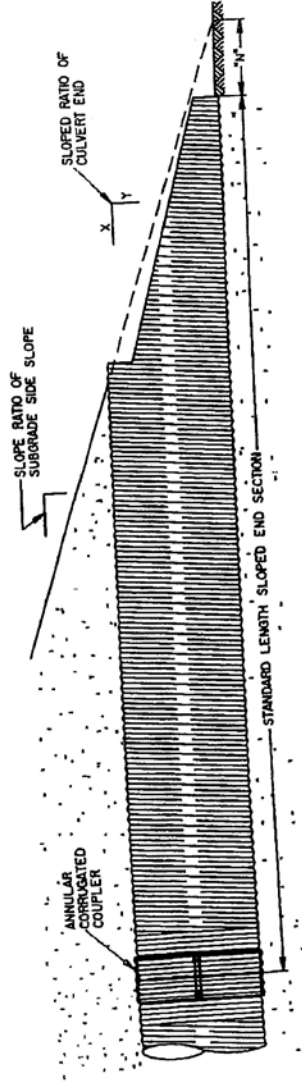
Based on an application rate at 6 % (typical range from 5 to 7%)
 1950kg/m³ x 8.5 m x 300 mm x 1 km x 6% = 298 tonne/km



1. POSITIVE DRAINAGE IS TO BE MAINTAINED AT ALL LOCATIONS.
2. ALL TRENCHES IN ROAD RIGHT-OF-WAY REQUIRE COMPACTION TO 95% STANDARD PROCTOR DENSITY.
3. ALL DIMENSIONS ARE IN METERS.

amec AMEC Infrastructure Limited		Public Works and Engineering Dept.	
REVISIONS		Date: SEPTEMBER 27, 2005	
Date	Drawn	Approved:	DWG. NO. 06-0094
	Details	Checked:	
	Residential Subdivision Roadway	Drawn:	Scale: N.T.S.
	30.0 m Right-of-Way, 8.5m Finished Top, 10.9m Subgrade		

FIGURE C-4.6b SLOPED END INSTALLATIONS FOR ROUND SECTION CORRUGATED METAL PIPE



SELECTION OF SLOPE RATIO FOR SLOPED END SECTION:

A 4:1 SLOPED END SECTION SHALL BE USED IN CONJUNCTION WITH ALL SUBGRADE SIDE SLOPES WITH THE EXCEPTION OF 1200mm DIA. AND LARGER WHERE APPLICABLE.

DETERMINING INSTALLATION LENGTH
 THE LENGTH OF PIPE CULVERT TO BE INSTALLED SHALL BE DETERMINED AS FOLLOWS:
 1) ESTABLISH THE THEORETICAL LENGTH BASED ON SLOPE STAKE REQUIREMENTS, WHERE NO SPECIAL TREATMENTS ARE TYPICALLY SET INVERT ELEVATIONS ARE TYPICALLY SET ABOUT 0.15 X DIAMETER BELOW THE DRAINAGE COURSE ELEVATION.
 2) ADJUST THE THEORETICAL LENGTH BY APPLYING THE END CORRECTION N AS DETERMINED FROM THE TABLE TO EACH END OF THE CULVERT.
 3) INSTALLATION LENGTH SHALL BE THE LENGTH DETERMINED IN "2" ABOVE, ROUNDED OFF TO THE NEAREST METRE.

C.S.P. DIAMETER - D mm	SLOPE RATIO OF CULVERT END X:Y	"N" - m				INVERT OF SLOPE END SEC. METRE
		WITH 3:1 SUBGRADE SLOPE RATIO	WITH 4:1 SUBGRADE SLOPE RATIO	WITH 5:1 SUBGRADE SLOPE RATIO	WITH 6:1 SUBGRADE SLOPE RATIO	
400	4:1	0.3	0.5	0.8	1.2	6.0
500	4:1	0.3	0.6	0.9	1.5	6.0
600	4:1	0.3	0.6	1.0	1.6	6.0
700	4:1	0.3	0.8	1.2	2.0	6.0
800	4:1	0.4	0.9	1.4	2.3	6.0
900	4:1	0.5	1.0	1.6	2.5	6.0
1000	4:1	0.5	1.2	1.8	2.8	6.0
1200	3:1	0.9	1.7	2.4	3.7	6.0
1200	4:1	0.5	1.4	2.2	3.5	6.0
1400	3:1	1.0	1.9	2.8	4.3	6.0
1400	4:1	0.6	1.6	2.5	3.9	6.0

CROSS-SECTION ELEMENTS

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