

Councillor Request Inquiry

44-2018

2018

October 16, 2018 Council Meeting:

Please provide information on any policy relating to secondary approaches and any costs related to building and maintaining them.

Regarding the policy relating to secondary approaches, please find attached Policy SER-009-016 - Access to Roads Under the County's Jurisdiction most recently approved by Council on July 4, 2017. Procedures for this policy are also attached.

Guidelines of the application process can be found on the Strathcona County website along with the attached application form.

All properties are permitted one access. Special provisions for a second access are set forth in the conditions, namely:

- Parcels of 80 acres and larger are permitted two accesses (one residential and one agricultural) at no cost and may apply for a second agricultural access at the standard fee.
- Parcels which are divided by natural waterbodies or creeks or railways are permitted two accesses at no cost.
- All other parcels are subject to a \$3,000 fee which covers the long-term on-going maintenance costs of the sub-structure and culvert which is covered by the County once an access is in place.

Access to Roads Under the County's Jurisdiction

References: Strathcona County "Design & Construction Standards"
Transportation Association of Canada's "Geometric Design Guide for Canadian Roads"
Alberta Transportation's "Highway Geometric Design Guide"

Cross-reference: Bylaw 8-2007 "Unauthorized Use of County Property" Section 3.12.A.
Bylaw 2-2017 "Transportation System Bylaw"

Policy Statement

This policy is intended to guide the provision of access to roads under the County's jurisdiction in order to strike a balance between access requirements and the safe, efficient operation of the road system. All new and modified accesses are subject to the approval of the County.

Definitions

"Approach", "Access", or "Access approach": Any material or structure located within the road right-of-way used for the purpose of entering or exiting any road under County's jurisdiction

Manager: The Manager of the Right-of-Way Management branch, Transportation & Agriculture Services department

Director: The Director of the Transportation & Agriculture Services department

Road: Any public road under the County's jurisdiction

Variance: A formal written request for exceptions to the policy where the requested access does not meet the standards or guidelines

Guidelines

Placement of Accesses within County-owned Roads is governed by Bylaw 8-2007 "Unauthorized Use of County Property" Section 3.12.A.

Following principles of accepted risk management, planning and engineering practices will guide the requirements for the Access review process.

- The safety of Road users is the primary factor in the Access review process.
- Access management will consider the Road classification per the Transportation System Bylaw 2-2017 including the current and future Road function and traffic volumes.
- Placement of all Accesses will be governed by current engineering standards and guidelines and other municipal bylaws.

Review and approval of all Accesses will be guided by the current edition of the County's "Design & Construction Standards", Transportation Association of Canada's "Geometric Design Guide for Canadian Roads", and Alberta Transportation's "Highway Geometric Design Guide".

Current and future uses of County Roads and Access are to be considered for effective planning and management of the transportation network.

All accesses are subject to the approval of the Manager, Right-of Way Management or a designate.

Policy Record

Date of Approval by Council: Aug 19, 1986; June 14, 2005; July 6, 2010; June 24, 2014

Resolution No: 657/86; 429/2005; 447/2010; 229/2014

Next Review Date: July 2020

Policy No: SER-009-016

Last Review Date: July 4, 2017

Replaces: 60-62-017

Lead Role: *Chief Commissioner*

Administrative Review: Transportation and Agriculture Services

Procedures

The procedures document provides all parties clear Access management, planning and engineering practices to guide the requirements for the access review process in both the urban and rural context. The procedures document will govern all existing, proposed, modified, temporary and non-approved Accesses placed within Roads under the County's jurisdiction.

Responsibilities

Transportation & Agriculture Services is responsible to:

- Approve and manage all secondary Accesses and modifications of any Access to Roads under the County's jurisdiction which fall outside a Development Permit.
- Approve primary Access to lots in new rural subdivisions and any undeveloped lots without prior Access.
- Inspect new and modified Accesses to ensure they are in compliance with the required standards.
- Govern non-approved and non-compliant Accesses to ensure safety of Road users and efficient operation of the Road system and recommend to the Planning & Development Services department's Land Management Services branch to enforce non-compliant Access.
- Maintain and update the required standards and application process, as required.
- Inventory all Accesses in the database.
- Accept all applications and funds related to Access requests.
- Aid all applicants in the completion of Access requests.
- Upon final approval, maintain culverts and drainage within the Road right-of-way.

Planning & Development Services is responsible to:

- Review Development Permits and applications and approve primary, secondary Accesses and Access modification in accordance with the required standards through the development agreement and Land Use Bylaw.
- Administer the Unauthorized Use of County Property Bylaw 8-2007, as amended or replaced from time to time, for Accesses to Roads under the County's jurisdiction.
- Inspect new and modified Accesses constructed under the Development Permit approval.

Residents requesting a new or modified Access to County-owned Roads shall:

- Submit a completed application form with all applicable fees to Transportation and Agriculture Services.
- Provide rationale for the Access or Access modification in accordance with all standards and guidelines.
- Provide landownership or a letter from the landowner giving the applicant permission to act on their behalf.
- Should a requested Access not meet the standards or guidelines, the applicant is required to prepare a formal written request for Variance to the policy from the Director, Transportation & Agriculture Services, additional fees may apply as per the application and fee schedule.
- Per the Highways Development and Protection Act, S.A. 2004, c. H-8.5, Any proposed Accesses located within 300 metres of a provincial highway right-of-way, or within 800 metres of the centre point of an intersection of a provincial highway with another public Road, must include a Roadside Development Permit from Alberta Transportation prior to the County Access application.
- Residents who own land bordering a neighbouring municipality seeking access to Roads under the County's jurisdiction are required to include a development permit from that municipality with the County Access application.
- Upon final approval, residents are responsible for all Access surface maintenance including snow clearing and driving surface condition.

Procedure Record

Date of Approval: August 19, 1986; June 14, 2005; July 6, 2010; June 24, 2014

Policy No: SER-009-016

Next Review Date: 2020

Last Review Date: July 4, 2017

Administrative Review: Transportation and Agriculture Services

Access to Roads Under the County's Jurisdiction

Council Policy No.: SER-009-016

Date of Approval by Director: 2017

Next Review Date: 2020

Administrative Responsibility: Transportation & Agriculture Services

Purpose

This Procedure has been prepared in support of Council Policy SER-009-016, Access to Roads Under the County's Jurisdiction, to guide the provision of access to roads under the County's jurisdiction in order to strike a balance between access requirements and the safe, efficient operation of the road system. All new and modified accesses are subject to the approval of the County.

Definitions

Grid Road: Any Township Road or Range Road that comprises the County road network outside of the developed Urban Service Area per Schedule A-Rural of the Transportation System Bylaw 2-2017.

Country Residential Subdivision Road: Any public road other than a Grid Road that provides access to a multi-lot residential development within the Rural Service Area.

Urban Road: Refers to any public road within the Urban Service Area per Schedule A-Urban of the Transportation System Bylaw 2-2017.

Hamlet Road: Refers to any public road within a Hamlet boundary within the Rural Service Area.

Director: The Director of the Transportation & Agriculture Services department.

Manager: The Manager of the Right-of-Way Management branch, Transportation & Agriculture Services department.

General

1. Accesses for development that may generate more than 100 peak hour trips, redevelopment of sites and building changes or because its nature or unique circumstances may have a significant impact on the area which will require that a Transportation Impact Analysis (TIA) be undertaken and signed by a Professional Engineer. Please refer to Section 3.2.4 of the Land Use Bylaw for reference.
2. Where a property abuts two roads, existing or proposed, access to the property will be taken from the road of lower classification per the Transportation

Strathcona County Transportation and Agriculture Services

System Bylaw 2-2017 and/or traffic volume. A TIA by a Professional Engineer may be required to support requests for exceptions to this requirement.

3. Where a development permit application is received for redevelopment of a particular property, modification of an existing access or relocation will have to be applied and approved through the Transportation & Agriculture Services department or other departments that may be appropriate.
4. Where changes to land access are proposed, or where the Administration has been made aware through preliminary discussions with landowners that an access variance is required, administration will present the options within the County's development application process.
5. Where a new development permit application or proposal is received, access approval will fall under the development permit. However, Transportation & Agriculture Services will be involved in the location, size and safety concerns of the access approaches.
6. When there is more than one access in either Urban or Rural Service Areas, the access will come into question, if it falls under the Grandfather clause. These accesses will be reviewed on an individual basis, subject to the current Strathcona County Design & Construction Standards.
7. Where a property approach access application is made for agricultural purposes, the width of the access will be discussed with the landowners. These accesses will be reviewed on an individual basis, subject to the current Design and Construction Standards.

Rural Grid Roads

Landowners will be allowed one access to the County's Grid Road system per parcel. Additional accesses may be considered where special circumstances such as when natural geographical barriers exist, or where warranted by the scale and magnitude of the proposed development and/or land use. Applications for additional accesses will be reviewed on an individual basis, subject to the current Design & Construction Standards with respect to the access location criteria and a one-time, non-refundable maintenance fee payable to the County.

Rural Country Residential Subdivision Roads

Landowners will be allowed one access to the local subdivision road per parcel. One additional access may be considered for approval where special circumstances such as natural geographical barriers exist, or where warranted by the scale and magnitude of the proposed development and/or land use. The second access shall be applied for through the Transportation & Agriculture Services department; and if a second access is approved, it will be subject to a one-time, non-refundable fee payable to the County.

Urban and Hamlet Roads

Residential lots will be granted **one permanent** access to a local road only or collector road only. Single lot access approaches in urban areas are governed by the Land Use Bylaw 6-2015.

Applications

1. Outside the Urban Service Area, landowner applications may be made for accesses, additional accesses or modification to accesses under the provisions of this policy. The completion of an Application for Access Approach, with the accompanying fees, is required. Construction of accesses must meet County specifications as stated in the Design & Construction Standards.
2. New development access approaches will be reviewed on an individual basis and included in the Development Permit through the Planning & Development Services department. Where phased land development is proposed, the Development Permit may include temporary access arrangements that are to be applied for and approved through the Transportation & Agriculture Services department and will be revised subsequently as specified in the Development Agreement.
3. Applications for temporary accesses will include a deposit for removal of the access per the County's current Fees, Rates and Charges Bylaw, as amended or replaced from time to time. Once the applicant removes the access and reclaims the right-of-way to the County's satisfaction, the deposit on record will be returned to the applicant within 30 days of the inspection.
4. Applications for second accesses to Rural Country Residential Subdivision Roads and additional accesses to County Grid Roads will include a one-time, non-refundable fee for future culvert maintenance by the County as per the Fees, Rates and Charges Bylaw, as amended or replaced from time to time.

Non-Approved Accesses or Existing Accesses Not In Compliance to the County Standards

For accesses or approaches that, for whatever reason, have been constructed without County approval, Transportation & Agriculture Services will notify the landowner of the required remedial measures which, at the discretion of the Director of Transportation & Agriculture Services, may include immediate correction as per the Unauthorized Use of County Property Bylaw 8-2007, as amended or replaced from time to time.

Non-approved accesses, for which approval would otherwise be forthcoming, may be permitted to remain subject to submission of the application with all required fees as outlined in the Applications Section of this document and correction of any noted deficiencies.

Strathcona County Transportation and Agriculture Services

The landowner shall be contacted via registered mail and required to contact Transportation & Agriculture Services within thirty (30) days of the day on which the notice was received. If within the 30 days no contact is made, the County may take immediate corrective action as per the Unauthorized Use of County Property Bylaw 81-2007, as amended or replaced from time to time.

Costs

1. The cost for the access application is the sole responsibility of the landowner, applicant, or developer. The cost of constructing the access is the responsibility of the landowner except where existing agreements are already in place.
2. The maintenance of all accesses to private property is the responsibility of the landowner. The County will, however, maintain culverts to ensure consistent drainage through road rights-of-way.
3. The cost of a Transportation Impact Analysis, (TIA) as specified in this policy, will be the responsibility of the landowner, applicant or developer.
4. As per Bylaw 8-2007 "Unauthorized Use of County Property" costs associated with any violation or subsequent removal of an unapproved access shall be borne by the landowner.

Transportation and Agriculture Services

Office: 370 Streambank Avenue, Sherwood Park, Alberta T8H 1N1

Mail: 2001 Sherwood Drive, Sherwood Park, Alberta T8A 3W7

Phone 780-417-7100 Fax 780-417-7109

www.strathcona.ca

Property Access Approach Application for:

- first access approach on legal land parcel
 new access approach other than the first access approach on legal land parcel
 temporary access approach
 widening or improving an existing access approach on legal land parcel
 existing approach

Registered owner _____ Phone number _____

Land Agent _____

Preferred method for correspondence phone e-mail ► _____

Property address _____ Subdivision _____

Legal description Lot _____ Block _____ Plan _____

Quarter _____ Section _____ Township _____ Range _____ Meridian 4Mailing Address _____
Street and number _____ City/town _____ Province _____ Postal code _____Has the site access been staked yes noAre the stakes within the property lines yes**Please Note:**

A **\$75.00** site inspection fee is required at the time of application. An inspection will occur within 5 business days from the receipt of complete application and payment.

All new access approaches, other than the first access approach on legal land parcels, are subject to an **additional fee of \$3,000+GST**.

Approved variance fees of **\$250+GST** per metre on accesses exceeding the 6 metre standard up to maximum of 10 metres.

Temporary access approaches (including all energy referrals/well site access approaches) require a **\$3,500+GST deposit** to be returned once the applicant removes the access approach and are **not** subject to the \$3,000 fee.

Signature of registered owner _____ Date _____

Collection and use of personal information

Personal information is collected under the authority of section 33(c) of the *Freedom of Information and Protection of Privacy Act* and will be used to manage and administer Strathcona County's Property Access Approach Program. If you have any questions regarding the collection, use or disclosure of this information, contact the Supervisor, Traffic Management, Transportation and Agriculture Services, Strathcona County at 780-417-7100.

Fees (For office use only)

Site inspection fee \$75.00	Date received _____
Temporary access approach deposit \$3,500.00 + GST	Date received _____
New access approach other than the first access approach on legal land parcel fee \$3,000.00 + GST	Date received _____
Variance fee \$250.00 + GST per metre charge: \$250.00 x _____ metres = _____	Date received _____

For staff use onlyApplication accepted Application not accepted Reason _____

Strathcona County Approach Guidelines

Property access approaches to County grid roads:

Normally, **one** access approach is allowed per legal land parcel. (Municipal Policy SER-009-016: Access to Roads Under the County's Jurisdiction). Additional access approaches will be considered where warranted by natural geographical barriers, land use, scale and magnitude of the development, etc.

Additional access approaches for operational, emergency, water or railway separations:

Must be submitted to Transportation and Agriculture Services and be reviewed on an individual basis, subject to the current Design & Construction Standards with respect to the access approach requirements. Phone 780-417-7100 for additional information.

Property access approaches to country residential subdivision roads:

Up to two access approaches are allowed to local subdivision road per legal land parcel, subject to lot frontage and the current Design & Construction Standards with respect to the access approach location criteria and any applicable fees.

Property access approaches to hamlet road:

One access approach only is allowed per legal land parcel.

Property access approaches to parcels 80 acres and greater:

Up to two access approaches will be allowed to parcels over 80 acres: one residential and one agricultural. Another may be granted, subject to lot frontage and the current Design & Construction Standards with respect to the access approach location criteria and any applicable fees.

Approvals for new property access approaches are valid one year from the issue date of the approval letter. If the work is not completed, an extension may be requested in writing or it may be necessary to re-apply. Applicable application fees will be charged.

Approach Installation

A "Property Access Approach - Application" form is to be completed and signed by the applicant for any type of alteration proposed to an approach. The application will then be reviewed and approved by County personnel **prior** to installing or altering the access approach. The non-refundable \$75.00 application fee and additional applicable fees and/or deposits are required at the time of application.

Any access approach constructed or altered by the applicant must meet the standards as detailed in Strathcona County Drawings 51003, 51005, 51110 and 51204 (see attached).

Any property access approach shall have a gradient between +/-0.6% to +/-2.0% for a distance of minimum 10.0 metres from the edge of the road. Final recommended driveway grade on private property is minimum +/-0.6% to maximum +/-8.0%.

A vertical curve of 10.0 metres in length is recommended as a transition from the above specified grade requirements to the remainder of the private access road.

The construction of rural access approaches is the responsibility of the landowner. Strathcona County will no longer install any new access approaches, with the exception of those identified within the Developer Approach Agreement. Long term, underground maintenance of approaches constructed to the County Standards will become the responsibility of Strathcona County. Surface maintenance of the approach will remain the responsibility of the land parcel owner.

Variances to the Design & Construction Standards

A request for variance to Strathcona County Design and Construction Standards is required, if the proposed approach or modified existing approach is to exceed 6 metres in width at the property line. A variance must be requested in writing and subject to approval through the Manager of Right-of-Way Management in the Transportation and Agriculture Services department. An approved variance is subject to an additional fee of \$250.00 per metre over the standard 6.0 metre width to a maximum approach width of not more than 10.0 metres based on individual cases.

Reminder to Applicants Installing Their Own Approaches

All existing underground gas and/or telephone lines (if any) must be located by the appropriate utility company prior to construction. Utility locates are the responsibility of the applicant unless the access approach is installed by Strathcona County. To contact Alberta One Call, telephone **1-800-242-3447**. Alberta One Call does not locate all utilities, only those of member companies. Other utilities may exist. Contact Strathcona County at 780-467-7785 to locate water, storm, and sanitary lines and 780-417-7100 to locate County owned street lighting, fibre optic lines and traffic signals.

Property Access Approach – Installation Specification Information

(Page 3 of 3)

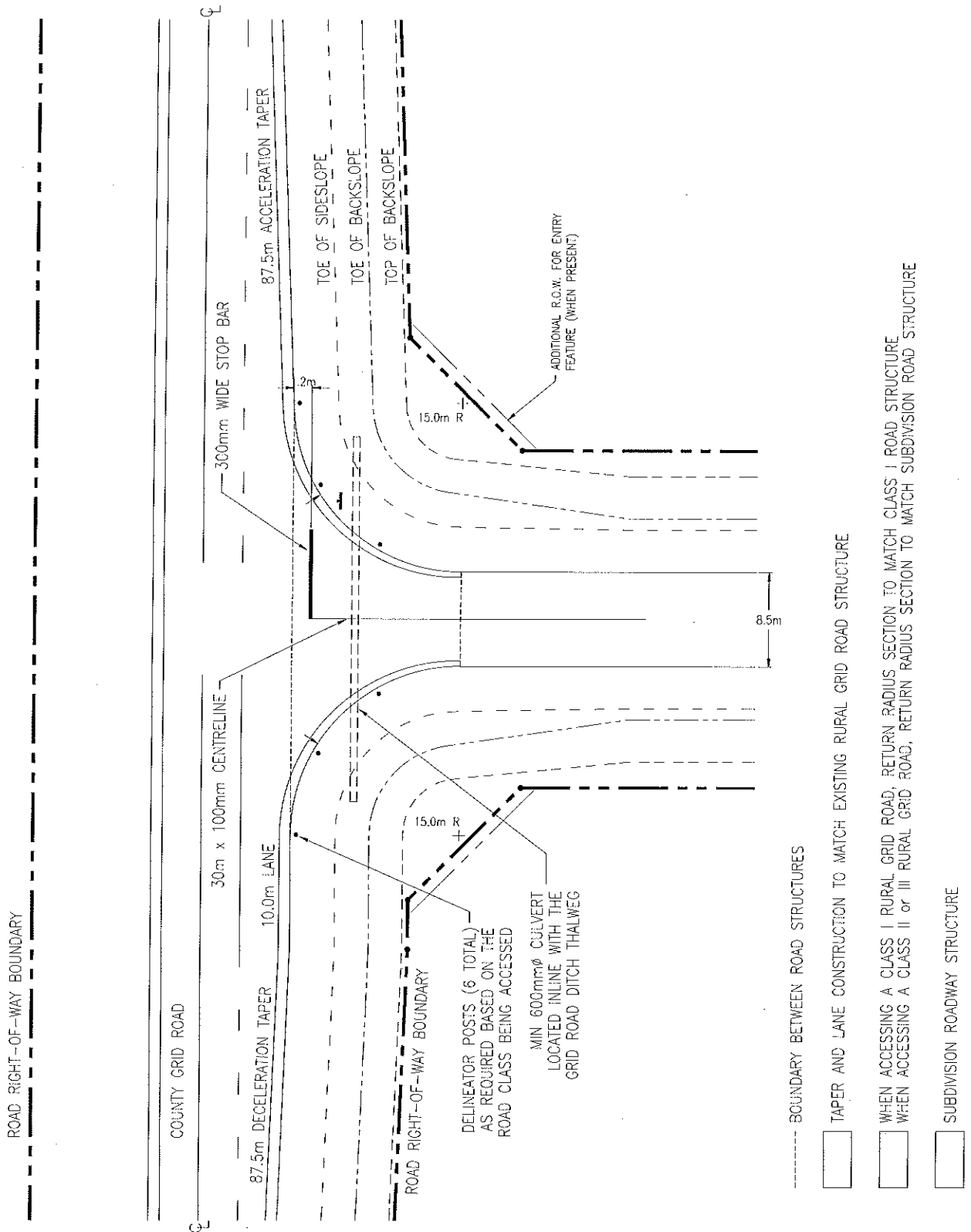
It is the responsibility of the applicant to correctly identify property lines to ensure that the proposed access approach does not encroach onto a property owned by another party.

All access approaches shall meet the following requirements:

1. All access approach installations require **new galvanized corrugated steel** culvert material and accessories. At this time, Strathcona County will not accept equivalent culvert material types.
2. Single lot access approach in urban areas are governed by the Land Use Bylaw 6-2015 and may range in width from a minimum of 3 metres to a maximum of 9.0 metres to match the garage width. Access approaches in rural areas shall be a width of 6 metres to a maximum of 10 metres in width. (A variance request will be required for any widths greater than 6.0 metres to a maximum width of 10.0 metres, or less than 6.0 metres to a minimum width of 4.0 metres.)
 - 4:1 side slopes
 - 15 metres (49'2") long culvert
 - The above culvert length is based on a 1.0 metre deep ditch. Greater ditch depths will require increased culvert lengths in the amount of twice the side slope accordingly.
3. Dual lot access, 10.0 metres (32'8") wide
 - 4:1 side slopes
 - 18.0 metres (59'0") long culvert
 - The above culvert length is based on a 1.0 metre deep ditch. Greater ditch depths will require increased culvert lengths in the amount of twice the side slope.

Please note this will require a shared access agreement through Land Management Services.

4. All culverts shall have 3:1 sloped end treatments.
5. Minimum wall thickness - 1.6 mm gauge galvanized steel, unless otherwise specified.
6. Minimum diameter of an access approach culvert is 400 mm (16"). Upon inspection by County personnel, a culvert design may be recommended in some locations that may result in larger diameter culverts being required.
7. All access approaches must have a minimum of 50 mm (2") thick gravel surface between the property line and road surface, with the exception of access approaches to Class I or II rural grid roads. All access approaches to Class I or II rural grid roads shall be hard-surfaced along first 6.0 metres from the edge of road pavement and have minimum 50 mm gravel surface thereafter to property line.
8. Embankment material to be clay and/or granular and compacted to 97% minimum Standard Proctor Density (SPD).
9. Access approaches on 80 km/hr grid roads are to be spaced 90.0 metres centreline to centreline from or directly opposite to any other roadway or access approach.
10. Access approaches are to have no less than 170.0 metres sight distance in both directions on 80 km/hr grid roads.
11. Access approaches on 50 km/hr rural roads are to be spaced 75.0 metres centreline to centreline from the grid road and 60.0 metres centreline to centreline from or directly opposite to any internal roadway and 45.0 metres centreline to centreline from or directly opposite to any other access approach. Installation of delineator posts is recommended.
12. Access approaches in Country Residential Subdivisions must have 85.0 metres stopping sight distance.
13. Access approaches to provincial highways require approval from Alberta Transportation, as the governing road authority at 780-963-5711.
14. Access approaches to County roads which are located within 300 metres of the provincial highway right-of-way boundary, or within 800 metres of the centre point of an intersection of the provincial highway with another public road, require approval of Alberta Transportation.
15. The applicant is responsible for staking the approach location and the property lines on site. The applicant must contact Transportation and Agriculture Services at 780-417-7100 to request a location inspection **prior** to any construction activity of the approach.



REVISIONS

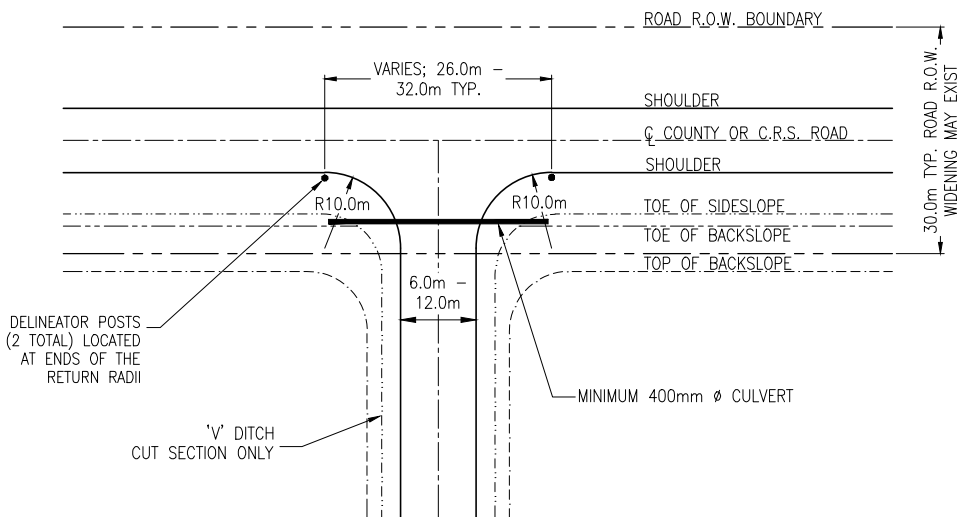
Date	Details	Drawn
11/05/02	REVISED DRAWING NUMBERS	J. ORR
11/02/10	Revised Drawing Numbers	D. Butt
2006/01/19	Final Revisions for Approval	R. Dekker

Strathcona County 2001 Sherwood Drive, Sherwood Park
 Alberta, T8A 3W7, CANADA © 2011

Country Residential Subdivision Access Detail
Structure, Line Painting, Culvert Location, and Ditch Layout

Approved: M. MacGarva, M.Eng, P.Eng.
 Checked: D.L. Schilbe, P.L. (Eng)
 Date: 1994/06/23 Scale: 1:50 Drawn: Richard Dekker, R.E.T.

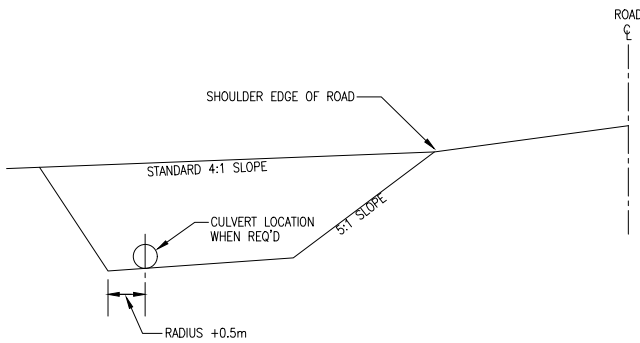
Drawing Number:
51003
Capital Planning & Construction Department



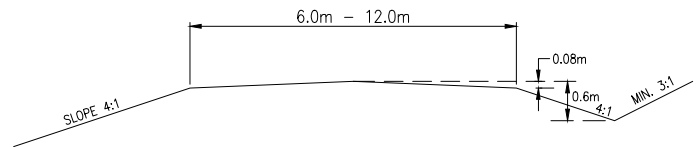
(FIG. 1)

MINIMUM LENGTH OF VERTICAL CURVE		
ALGEBRAIC DIFF. IN GRADIENT (%)	LENGTH (L) METRES	
	CREST	SAG
1	6 m	8 m
2	12 m	15 m
3	14 m	23 m
4	25 m	31 m
5	30 m	38 m
6	37 m	46 m
7		46 m
8		46 m
9		46 m

(FIG. 2)




(FIG. 3)
DETAIL OF DITCH AND CULVERT LOCATION



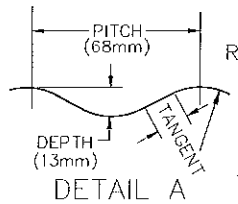
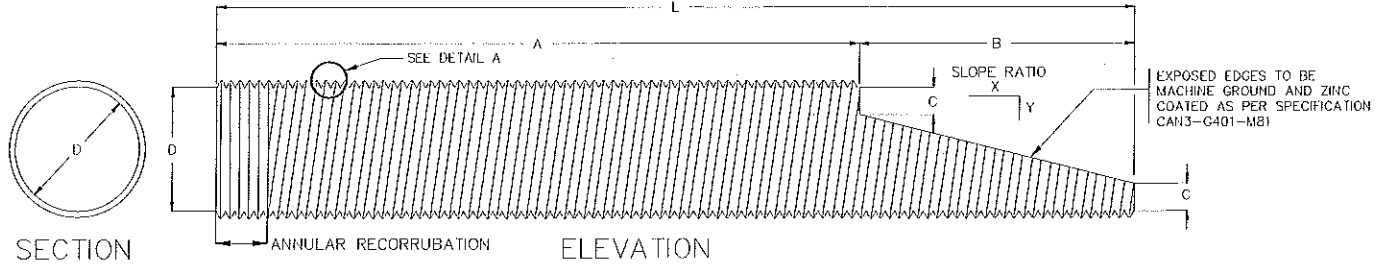
(FIG. 4)
MINIMUM PRIVATE APPROACH CROSS SECTION

NOTE:

1. EACH RESIDENTIAL LOT WILL ONLY BE GRANTED ONE ACCESS. PROVISION FOR A SECOND AGRICULTURAL ACCESS MAY BE GIVEN.
2. THE USE OF 10.0m WIDE DUAL-LOT vs. 6.0m WIDE SINGLE-LOT ACCESSSES IS ENCOURAGED.
3. IF RURAL WATER SERVICE IS UTILIZED, RETURN RADII MAY BE REDUCED FROM 10.0m TO 7.5m.
4. ENSURE THAT THE ROAD STRUCTURE FROM THE MAJOR ROAD CARRIES ONTO THE COUNTRY RESIDENTIAL SUBDIVISION (C.R.S.) ROAD THROUGHOUT THE CURB RETURN SECTION, OR TO THE ROW BOUNDARY, WHICHEVER IS GREATER. SEE DRAWING 51003 FOR MORE DETAILS.
5. ACCESS WITHIN A C.R.S. MUST BE ASPHALT FROM ROAD EDGE TO PROPERTY LINE. ACCESS APPROACHES TO CLASS I, II, OR III GRID ROADS SHALL BE HARD-SURFACED ALONG THE FIRST 6.0m FROM THE EDGE OF ROAD, AND SHALL HAVE A MINIMUM 50mm GRAVEL SURFACE THEREAFTER TO PROPERTY LINE.
6. LOTS ACCESSING OFF A COUNTY GRID ROAD ARE TO HAVE THEIR ACCESS SPACED:
 - 90.0m CENTRELINE TO CENTRELINE FROM OR DIRECTLY OPPOSITE TO ANY OTHER ROADWAY OR ACCESS.
7. LOTS WITHIN A C.R.S. SHALL HAVE THEIR ACCESS LOCATED ON THE INTERNAL SUBDIVISION ROADWAY.
8. LOTS WITHIN A C.R.S. SHALL HAVE THEIR ACCESS SPACED:
 - 75.0m CENTRELINE TO CENTRELINE FROM THE GRID ROAD.
 - 60.0m CENTRELINE TO CENTRELINE FROM OR DIRECTLY OPPOSITE TO ANY INTERNAL ROADWAY.
 - 45.0m CENTRELINE TO CENTRELINE FROM OR DIRECTLY OPPOSITE TO ANY OTHER LOT ACCESS.
9. ACCESS FOR CORNER LOTS SHALL BE TO THE ROAD OF LESSER DESIGNATION AND/OR TRAFFIC VOLUME.
10. TWO FLEXIBLE DELINEATOR POSTS ARE RECOMMENDED AT EACH RESIDENTIAL ACCESS. SEE DRAWING 51204.

REVISIONS			 2001 Sherwood Drive, Sherwood Park Alberta, T8A 3W7, CANADA	© 2017
Date	Details	Drawn		
17/05/23	NOTES RE C.R.S. ROAD/ACCESS STRUCTURE, DELINEATOR POSTS; APPROACH WIDTH; CULVERT LOCATION; DIMENSIONS	D. LeGrow	Private Approaches Approved: M. MacGarva, M.Eng, P.Eng. Checked: D.L. Schilbe, P.L.(Eng.) Date: 95/01/16 Scale: N.T.S. Drawn: R. Dekker, R.E.T.	
11/05/02	REVISED DRAWING NUMBERS	J. Orr		
11/02/10	REVISED DRAWING NUMBERS	O. Butt		
06/01/19	FINAL REVISIONS FOR APPROVAL	R. Dekker		
			Drawing Number: 51005	
			<small>Transportation Planning & Engineering Department</small>	

DETAILS OF STANDARD SLOPED END SECTIONS FOR C.S.P. ROUND CULVERTS



NOTES:
THE HELICALLY CORRUGATED PIPE IS TO HAVE THE PIPE ENDS RECORRUGATED TO PROVIDE ANNULAR CORRUGATIONS FOR COUPLING PURPOSES (AS SHOWN). THE MINIMUM LENGTH WITH ANNULAR CORRUGATIONS SHALL BE 300mm FOR DIAMETERS OF 900mm OR LESS AND 600mm FOR A DIAMETER OF GREATER THAN 900mm. THE COUPLER SHALL BE AN ANNULAR CORRUGATED BAND TYPE. THERE SHALL BE A MINIMUM OF 3 BOLTS PER COUPLER FOR DIAMETERS OF 800mm OR GREATER.

INSIDE DIAMETER "D" mm	SLOPE RATIO X:Y	"C" mm	"A" m	"B" m	INVERT LENGTH OF SLOPED END SECTION "L" m
400	3:1	100	5.40	0.60	6.0
500	3:1	125	5.25	0.75	6.0
600	3:1	125	4.95	1.05	6.0
700	3:1	150	4.80	1.20	6.0
800	3:1	175	4.65	1.35	6.0
900	3:1	200	4.50	1.50	6.0
1000	3:1	225	4.35	1.65	6.0
1200	3:1 4:1	225 275	3.75 3.40	2.25 2.60	6.0 6.0
1400	3:1 4:1	250 300	3.30 2.80	2.70 3.20	6.0 6.0

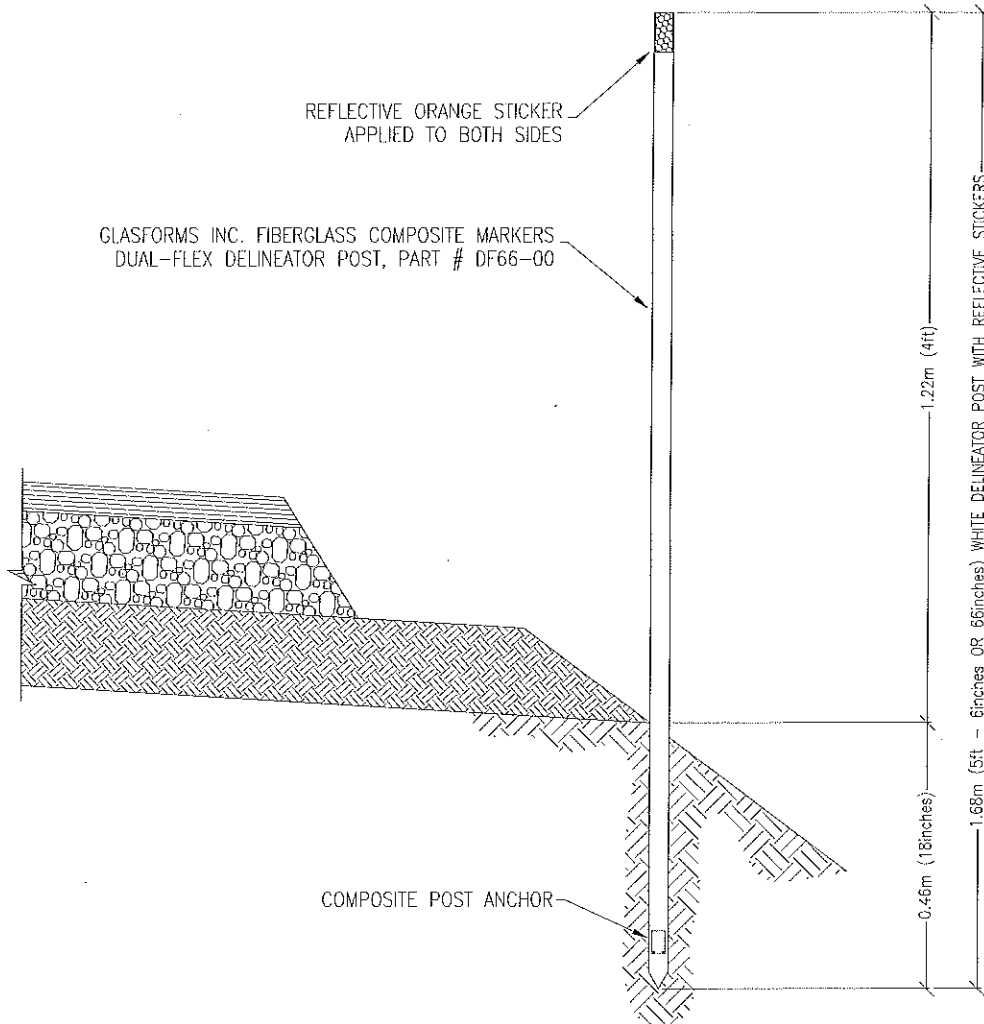
THICKNESS OF CORRUGATED STEEL PIPE—TABLE A

DIA. IN mm	AREA IN m ²	*HEIGHT OF COVER ABOVE TOP OF CULVERT IN m																													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
400	0.126	1.6															2.0					2.8									
500	0.196	1.6										2.0					2.8														
600	0.283	1.6					2.0										2.8					3.5									
700	0.385	2.0										2.8					3.5					4.2									
800	0.503	2.0					2.8					3.5					4.2														
900	0.636	2.0					2.8					3.5					4.2														
1000	0.786	2.8										3.5					4.2														
1200	1.131	2.8					3.5					4.2					FOR FILLS OVER 11m—USE TABLE B														
1400	1.540	3.5					4.2					FOR FILLS OVER 9m—USE TABLE B																			

METRIC 5% VERTICALLY ELONGATED C.S.P.—TABLE B

DIA. IN mm	AREA IN m ²	*HEIGHT OF COVER ABOVE TOP OF CULVERT IN m																													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
1200	1.131	2.8										3.5										4.2									
1400	1.540	3.5															4.2														

REVISIONS			Strathcona County	2001 Sherwood Drive, Sherwood Park Alberta, T8A 3W7, CANADA		© 2011	
Date	Details	Drawn					
			Culverts				
			Approved: M. MacGarva, M.Eng., P.Eng.			Drawing Number:	
11/05/02	REVISED DRAWING NUMBERS	J. ÖRR	Checked: D.L. Schilbe, P.L. (Eng)			51110	
2006/01/19	Final Revisions for Approval	R. Dekker	Date: 1994/11/29	Scale: N.T.S.	Drawn: Daniel Leckie, A.Sc.T.	Capital Planning & Construction Department	



NOTES:

1. POSTS TO BE INSTALLED AT EDGE OF SUBGRADE PREPARATION.
2. EACH POST TO INCLUDE ONE POST ANCHOR.
3. SIX POSTS REQUIRED PER SUBDIVISION ACCESS (EXCEPT ON CLASS I GRID ROADS).
4. TWO POSTS REQUIRED PER RESIDENTIAL ACCESS.

REVISIONS			Strathcona County	201 Sherwood Drive, Sherwood Park Alberta, T8A 3W7, CANADA	© 2011
Date	Details	Drawn			
			Flexible Delineator Posts		
11/05/02	REVISED DRAWING NUMBERS	J. ORR	Approved: M. MacGarva, M.Eng., P.Eng.		Drawing Number: 51204
11/02/10	Revised Drawing Numbers	O. Butt	Checked: D.L. Schilbe, P.L. (Eng)		
2006/01/19	Final Revisions for Approval	R. Dekker	Date: 2002/03/20	Scale: N.T.S. Drawn: Richard Dekker, R.E.T.	