BYLAW 2399/D&P/10

BEING A BYLAW OF THE TOWN OF STONY PLAIN IN THE PROVINCE OF ALBERTA FOR THE PURPOSE OF AMENDING THE SOUTHEAST AREA STRUCTURE PLAN

The Council of the Town of Stony Plain in the Province of Alberta, enacts that the Home Acres Amendment to the Southeast Area Structure Plan be adopted as follows:

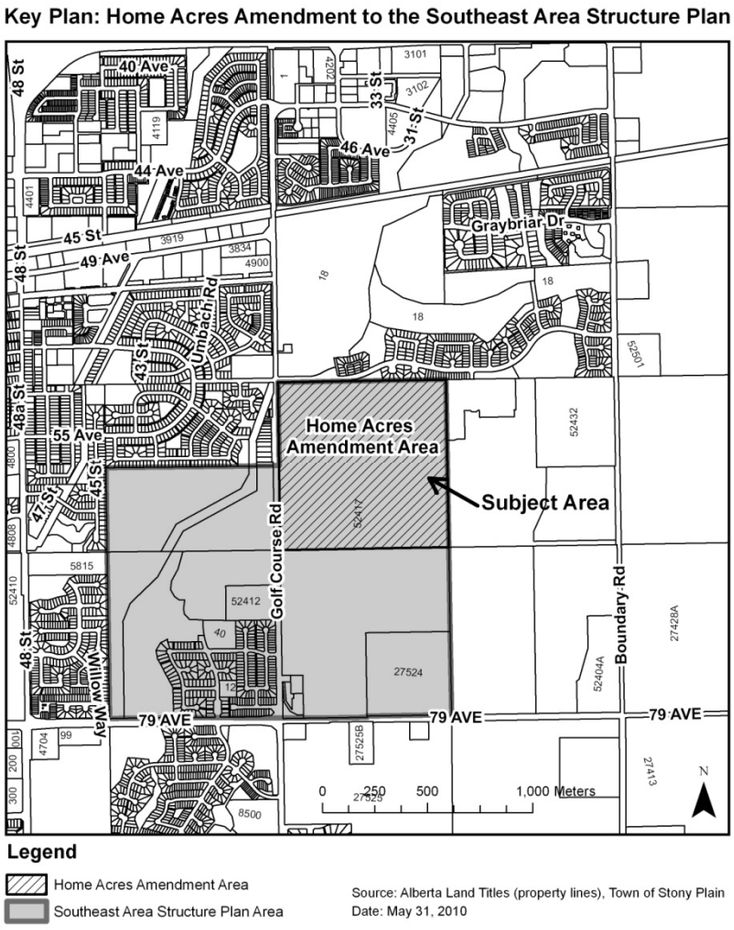
1. That this Bylaw 2399/D&P/10 is to be cited as the "Home Acres Amendment to the Southeast Area Structure Plan".

2. That Schedule "A" attached hereto is hereby adopted as part of this bylaw.

3. That the Southeast Area Structure Plan be amended by replacing the development plan for NW¼ Sec 30-52-27-W4M within the Southeast Area Structure Plan with the development plan described within Schedule "A"

3. That this bylaw shall apply to NW¼ Sec 30-52-27-W4M; which is 64.5 hectares, more or less, and which is shown on the figure below:

Figure: Home Acres Amendment to the Southeast Area Structure Plan Area of Application



4. If any portion of this bylaw is declared invalid by a court of competent jurisdiction, then the invalid portion must be severed and the remainder of the bylaw is deemed valid.

5. That this bylaw shall come into force and take effect upon the date of third reading and signing in accordance with Section 213, Municipal Government Act, Revised Statutes of Alberta 2000.

Read a first time this 14th day of June, A.D. 2010.

Original Signed

Mayor Ken Lemke

Original Signed

Louise Frostad, CMA, CLGM
Director, Finance and Administration

Public Hearing held on the 12th day of July, A.D. 2010.

Read a second time this 12th day of July, A.D. 2010.

Read a third time this 12th day of July, A.D. 2010.

Original Signed

Mayor Ken Lemke

Original Signed

Louise Frostad, CMA, CLGM
Director, Finance and Administration

Schedule A:

Home Acres
Amendment to the
Southeast Area Structure Plan

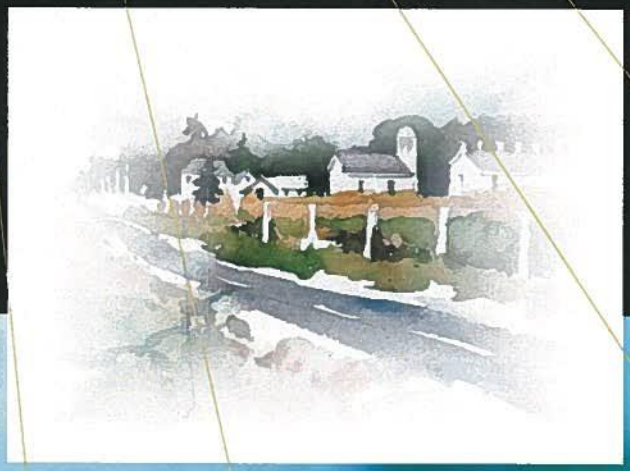
AREA STRUCTURE PLAN

for

Home Acres

R& B Hennig

NW-30-52-27-W4
Town of Stony Plain



NORCAN CONSULTING GROUP

Acknowledgements

This Area Structure Plan has been prepared on behalf of
The R & B Hennig Family
and
St. Mathew Lutheran Church School Committee

by The Norcan Consulting Group

Norcan Consulting Group Inc.
Principal Contributor - Frank Florkewich
- Project Manager and Functional Planning
- Technical Design & Construction Management

North Star Planning Inc.
Principal Contributor - Richard Neufeld, B. Sc.
- Land Use Planning & Municipal Practices

Altime Engineering Ltd.
Principal Contributor - Ron Andriuk, P. Eng.
- Civil Engineering (Road drainage & utility)

Western Topographic Surveys
Principal Contributor - Dave Coulston
- Topographical, Construction and Control Surveys

-

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- Communications Consultants

- Traffic Impact Assessment

TABLE OF CONTENTS
HENNIG LANDS AREA STRUCTURE PLAN

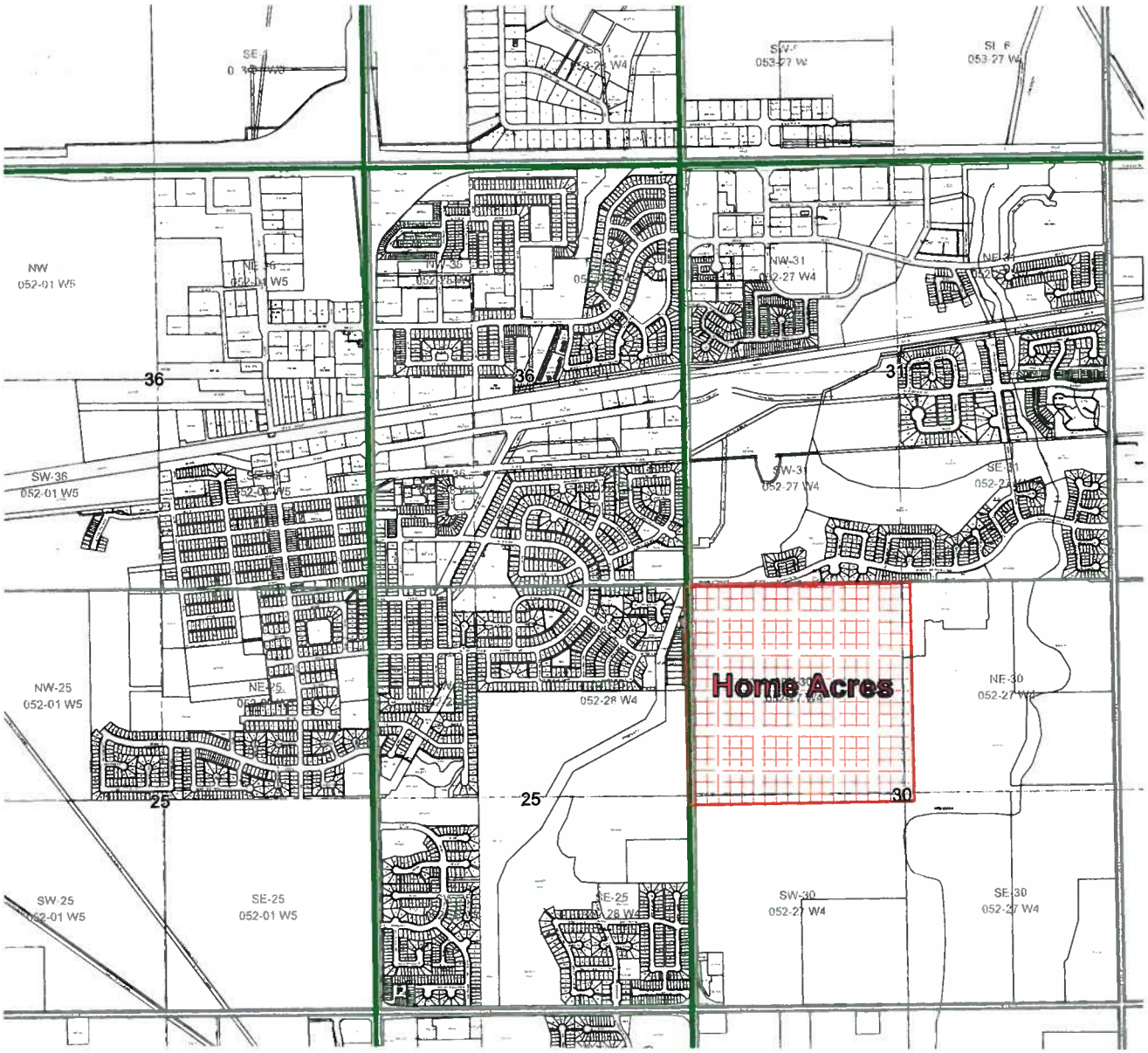
Appendices

1. Applicants Authorization
2. Right of Entry Authorization
3. Current title copy
4. Application to Amend MDP
5. Proposed Development Servicing - Altime Engineering
6. Geotechnical Report (school site only) - AD Williams Engineering Inc.

Location Map

Area Structure Plan

for



Home Acres

R & B Hennig

NW-30-52-27-W4

Town of Stony Plain

NORCAN CONSULTING GROUP

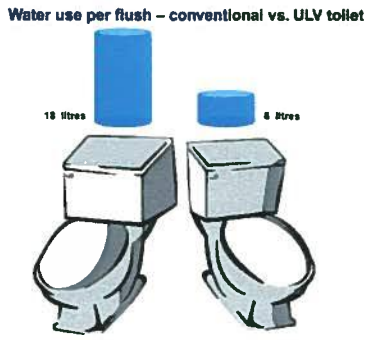
PART ONE: INTRODUCTION

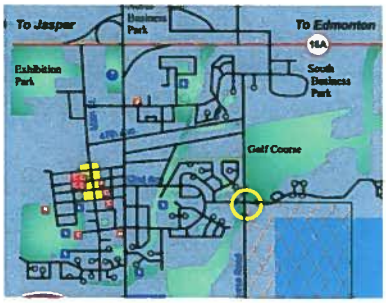
1.1) Preamble	The Home Acres - Hennig Lands Area Structure Plan ("ASP" or "Hennig Lands") has been prepared to assist with the further development of the parcel of land legally known as the northwest quarter-section of Section 30, Township 52, Range 27, West of the Fourth Meridian. This plan provides a land use framework for a multi-use urban development with a focus on residential development south of the Fairways community within the Town of Stony Plain.
1.2) Purpose & Scope An Area Structure Plan is a planning document that identifies what areas can be developed, the infrastructure required to service it, the land use that will be developed, and the population it will generate. This plan is developed in consultation with the RM and submitted for review to the affected departments. Once the review is completed it is submitted to Council for consideration in a bylaw, at which time public input is solicited.	The purpose of the Hennig Lands Area Structure Plan is to establish a land use planning framework that will form the basis for the future development of the planning area. This Plan includes clear policy directions to guide on-going development within the subject lands and to minimize potential impacts on surrounding lands. Part I of this Plan will introduce the Hennig Area Structure Plan and describe the current land use framework that exists within the subject area, including, but not exclusive to a review of the Town of Stony Plain Municipal Development Plan, Land Use Bylaw, urban design toolkit and area structure plan sustainability guidelines.
(Part II)	Part II of this Plan provides an inventory of the physical characteristics of the subject property and includes a description of the property and adjoining land use, land ownership, subdivision and development history, topography and vegetation characteristics, geotechnical review and a summary of environmental issues that are present at the site, and the current status of the transportation network in the surrounding area.

(PART III)

Part III of this Plan, describes the concept and vision for the Hennig Lands and provides a detailed overview of:

- The design principles to be applied within the Hennig Lands,
- A description of how the Hennig Lands are to be developed,
- Initiatives towards sustainability that are to be implemented including:
    - adoption of built green technology for construction,
    - inclusion of water use reduction technologies,
    - efforts to maintain a variety of age groups within the community, and
    - promotion of community spirit and cooperation.
- Open space and recreational opportunities including connectivity to the municipal linear park system,
- A description of improvement initiatives that will be undertaken to the local transportation network,
- A utility servicing scheme for services provided within the park, and
- A storm water management plan.



1.3) Access 	The subject lands are accessible by Golf Course Road (west) and Fairway Drive (North). As described in Part III of this Plan, a new road linkage is planned on the south boundary that connects to Golf Course Road and two roads are planned for connectivity to the quarter-section to the east. Currently, the subject property accesses the local road network through a private farmstead driveway onto golf Course Road.
1.4) Development Proposal TOWN OF STONY PLAIN	It is proposed that the Hennig lands be developed with residential use as the dominant land use. Supporting land uses include parks, linear pathway systems, neighbourhood commercial and institutional land uses such as schools and places of worship. All development within the Hennig Lands shall conform to the policies, guidelines and regulations of the Town of Stony Plain in order to achieve land use and development that is in keeping with the vision of the residents of the community. As described further in Part III of this Plan, an approximate total of 1070 homes are planned for the Hennig Lands which will realize a potential additional population of 3,265 persons.
1.5) Legislative Compliance	This Plan has been prepared in accordance with the provisions and requirements of the following provincial legislation, municipal bylaws and regulations. It is anticipated that any amendments that will be required to the overall Town of Stony Plain planning framework will be minor in scope. Proposed amendments are discussed in the following passages.

This Plan has been prepared in accordance with the policies of the Town of Stony Plain Municipal Development Plan, as amended. In particular, due regard has been given to the policy areas of residential densities, linear park design and the future extensions of infrastructure including roads, water and sewer lines and new school sites.

It is noted that the predominant future land use for the Hennig Lands is residential in nature. A variety of housing types as described in Part III of this Plan are planned to provide a good mix of housing options for new residents to the Town of Stony Plain.

It is noted that consideration may have to be given to the following proposed amendments to the MDP in order to implement this ASP. It is noted that some of the following amendments may be considered minor or technical at the discretion of the Town of Stony Plain.

- Future Land Use Map (Map #2): That a new school site be added to the northwest corner of the Hennig Lands. It is noted that a proposed school site is also recommended for the adjoining lands to the south. It is outside the scope of this ASP to determine if both school sites are necessary.

- Sanitary Sewer Map (Map #6): The proposed future trunk line will likely have to be shifted westward in order to accommodate the proposed internal road network within the ASP.

- Storm Water Map (Map#7): The proposed storm water pond network for the ASP differs from the Town MDP. The MDP recommends a single storm water pond near the northwest corner of the property. The ASP recommends four separate smaller ponds in individual drainage basins.

- Transportation Map (Map #4): The proposed

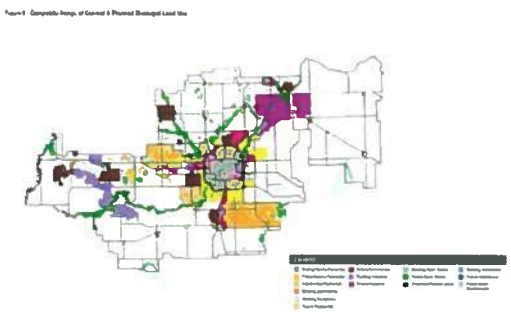
Transportation Map describes a new future arterial road that parallels the south quarter-section boundary for approximately 400 metres (1/4 mile) and then angles north-easterly. The proposed road network within this ASP describes the same road following the quarter-section boundary for the full frontage of the property.

Similarly, the MDP Transportation Map describes a collector road on a north-south alignment. Under the Hennig Lands ASP, this road is moved slightly to the west.

- Water Distribution (Map 5): Proposed water mains that are aligned to the future road network will have to be relocated to the road network proposed within this Plan.

- Future Trail (Map #3): Two trail systems are proposed for the Hennig Lands under the MDP. One trail extends parallel to Golf Course Road. The other trail forms a crescent shape and extends with both connections to the east adjoining quarter-section. This alignment has been maintained with additional trails planned to link various neighbourhoods within the Hennig Lands.

(LUB)	The land is currently zoned (districted) to the urban reserve (UR) Land Use District. As the Hennig Lands are developed on a phase by phase

	basis, the subject phases will be zoned to the appropriate land use district. None of the proposed land uses within the Hennig Lands require non traditional *(Direct Control)* land use districting.
(MGA & LUB)	This ASP has been prepared in accordance with the provisions of the Municipal Government Act ("the Act"). The Act enables municipalities to adopt area structure plans to provide a framework for future subdivision and development. Section 633, 636, 638 and 692 of the Act relate specifically to area structure plans. This plan has been prepared in accordance with the Province of Alberta Minister's Land Use Policy. Finally, it is noted that certain planning provisions within Part 17 of the Act are currently under review at the provincial level as this Plan is being prepared. This Plan has been prepared in accordance with the direction shown in those amendments as of the fall 2009 sitting of the legislature.
(Capital Region Growth Plan) 	This ASP has been prepared in accordance with the policies and principles of the Capital Region Growth Plan[1], of which the Town of Stony Plain is a member. In particular and as discussed further in this Plan, the following land use principles are very important to the success of this ASP: - Create inclusive communities, - Ensure efficient provision of services, and - Strengthen Communities. The Hennig Lands ASP has been prepared to facilitate the land use amendment implementation

[1] Capital Region Growth Plan, 2009 http://capitalregionboard.ab.ca

	process as described on page 57 of the Capital Region Growth Plan. A compliance analysis is provided in Sect. 4.5 REF Review (page 41) of this Plan.
(Capital Region Land Use Plan) 	The Hennig Lands ASP has been prepared to comply with the applicable principles and policies regarding regional land use as put forward by the Capital Region Board[2]. Of significance are policies related to: • Support innovative housing designs, • Include future transit accessibility in future designs, and • Support affordable housing options. Through the Town of Stony Plain, the Developer looks forward to working with the Capital Region Board through its planning process to achieve the realization of this project.
(Land Stewardship Act) 	The Land Stewardship Act was recently adopted by the Alberta Legislature. At this point in time, it is not confirmed whether or not a regional plan will be prepared that will impose additional requirements and/or restrictions on the subject lands. However, this issue will have to be monitored on an on-going basis to ensure that this ASP remains current and effective.
1.6) Interpretation	It is not intended that the policies of this Plan be "fixed in stone" or inflexible. As changing conditions dictate, this Plan will be reviewed and amended as required by the Town of Stony Plain. Minor variances to criteria including "lot area, lot width and depth, setback criteria, floor area, etc." may be considered where determined reasonable in the opinion of the approving authority and in conformance to the current regulations described in the Land Use Bylaw.

[2] Capital Region Board: Regional Land Use Plan Principles and Policies http://capitalregionboard.ab.ca

1.7) Consultation Process 	The following describes the consultation process that has been undertaken to date on this project: *2009: Norcan Consulting Group attended several meetings with the St. Matthew's Lutheran Church organization and with Planning Staff at the Town of Stony Plain. *2010: Public meetings and a public hearing as part of the statutory consultation process will be held. It has been determined that the distance of the property from the provincial highway network is outside of the mandatory consultation distance with Alberta Transportation. Inquiries were not made in advance under the Historical Resources Act. The Developer is aware of the responsibilities under the legislation and as the agricultural operator on the lands, has not seen anything that would indicate an historical resource present on the site.

PART TWO: PHYSICAL INVENTORY

2.1) Location & Context	As indicated earlier in this ASP, the Hennig Lands property are located south of the Fairways community and east of Golf Course Road. The land currently features a farmstead which includes a residence and outbuildings characteristic of an agricultural operation.
2.2) Current Land Ownership	The subject land is currently owned by Mr. Roland C. Hennig and Bernice L Hennig as described under Certificate of Title No. 002-206-008. Both are residents of the Town of Stony Plain. There are a number of physical encumbrances on the land, including:

	• ATCO Gas and Pipelines Utility Right of Way, • Deferred Reserve Caveat, and • AGT Utility Right of Way. Main utility lines are indicated on applicable maps within this Plan. The Deferred Reserve Caveat is dated from 1975 and in the amount of 6.35 ha. (15.7 ac.).
2.3) Planning History *(Subdivision)* *(Planning)*	The following is a review of the planning and development history of the subject lands. The property is currently unsubdivided, however, a deferred reserve caveat is on the certificate of title which is an indicator of subdivision dating to 1975. An in-depth review by the Town of Stony Plain has verified that the requirements of this caveat were satisfied on another property and that reserves owing on the Hennig Lands are limited to 10% of developable land. It is proposed that this caveat be discharged as part of the first subdivision that takes place on the Hennig Lands. The subject lands were part of an area structure plan that included the south adjoining quarter-section and the land to the southwest of the Hennig Lands. The land use plan is known as the "*Southeast Stony Area Structure Plan*" and was adopted by Town Council in 1983. Since then amendments to the ASP were adopted in 1990,1991,1994,1997 and in 2009.
2.4) Topography & Vegetation[3]	Except for the existing farmstead and shelterbelts, most of the entire property is arable land and is under agricultural production. Shelterbelts consist primarily of aspen and evergreen trees.

[3] Taken from the Southeast Stony Area Structure Plan and visual observations.

The land is bisected from the southwest corner to the northeast by a ridge that creates three distinct drainage basins. Most of the land in the southeast drains to the south adjoining quarter-section. The northwest half of the quarter-section drains to the northwest into the entrance of the Fairways development. The final area is located in the northeast and is a self contained low area that catches run off from the immediate area and a portion of the land from the adjoining properties to the north and east.

The above mentioned ridge has a relief of 9 metres (29.5 ft). The lowest elevation is 705 m. (2,313 ft.), located in each of the southeast, northwest and northeast areas of the study area. The highest point on the land is located along the ridge approximately 300 metres (984 ft.) from the southwest corner of the property.

2.5) Geotechnical Evaluation

A conclusion of the engineering analysis from the former ASP stated:

No geotechnical analysis has been conducted on the NW ¼ of Section 30. However, an extrapolation of data on the SW ¼ of Section 30, air photo information and the extent of existing cultivation suggests that approximately 75% of the quarter-section is fair to good for development category. The remainder, below the 705 metre contour, may be fair to poor owing to the proximity of the stream course no. 3 lowlands in this area.

It is assumed that more detailed geotechnical analysis will be required prior to intensive development proposals within the lands. To accommodate the need for adjustments, the Hennig Lands ASP will be flexible to allow for slight shifting of land use areas, transportation and utility corridors.

Further to the above report, on behalf of the St.

Topographical Mapping over Aerial Photo

1 m interval

for

NW-30-52-27-W4

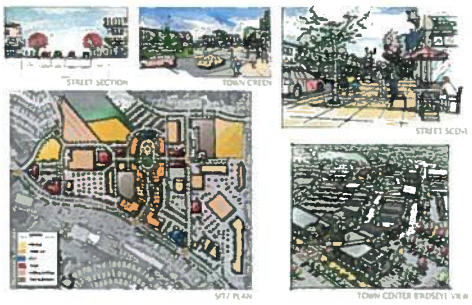
Town of Stony Plain

N

	Matthew Lutheran School A.D. Williams Engineering Inc. prepared a geotechnical analysis in 2008. The analysis is limited to the northwest corner of the Hennig Lands, but provides a general view of much of the land within the quarter-section. Topsoil on the lands vary from 0.6 to 0.8 metres (2.0 to 2.6 ft.) in depth. Soils are generally dry and a mixture of clay, silt and sand. Saturation depth (high water table) is approximately 8.4 metres (27.6 ft.) through most of the site with a deeper water table at the northwest corner of the site. No additional geotechnical engineering has been undertaken in support of this Plan.
2.6) Environmental Constraints 	There have been no major environmental restraints identified at this time in the preliminary assessments of the lands with in the ASP area, other than limited development potential on portions of the lands that are proposed to be conservation reserve.

PART THREE: DEVELOPMENT CONCEPT

3.1) Vision



The Hennig Lands are to be developed primarily as a residential community and will be a valued addition to the Town of Stony Plain, reflective of the land use design and community standards that are important to the Town and its residents.

A total of 15 land use classifications are planned for the Hennig Lands, a variety of land uses that will provide for a good mix of land uses including open space, commercial, institutional and residential.

The land use plan for the Hennig Lands will provide encouragement for the incorporation of energy efficient technologies and more environmentally friendly land use patterns within each neighbourhood.

The Hennig Lands Area Structure Plan is intended to be a guide for future development that may take place on the lands in the future. Within the framework provided in this document, individual developers will have the opportunity to express their individuality and innovative spirit.

The remainder of this Part of the Hennig Lands Area Structure Plan provides a policy overview for each land use class, servicing standards and other related land use issues.

3.2) Structural Overview

Once completed, the Hennig Lands will be a multi-use development, briefly described as follows:

- Residential:

A total of eight residential land uses are planned for the Hennig Lands, including:

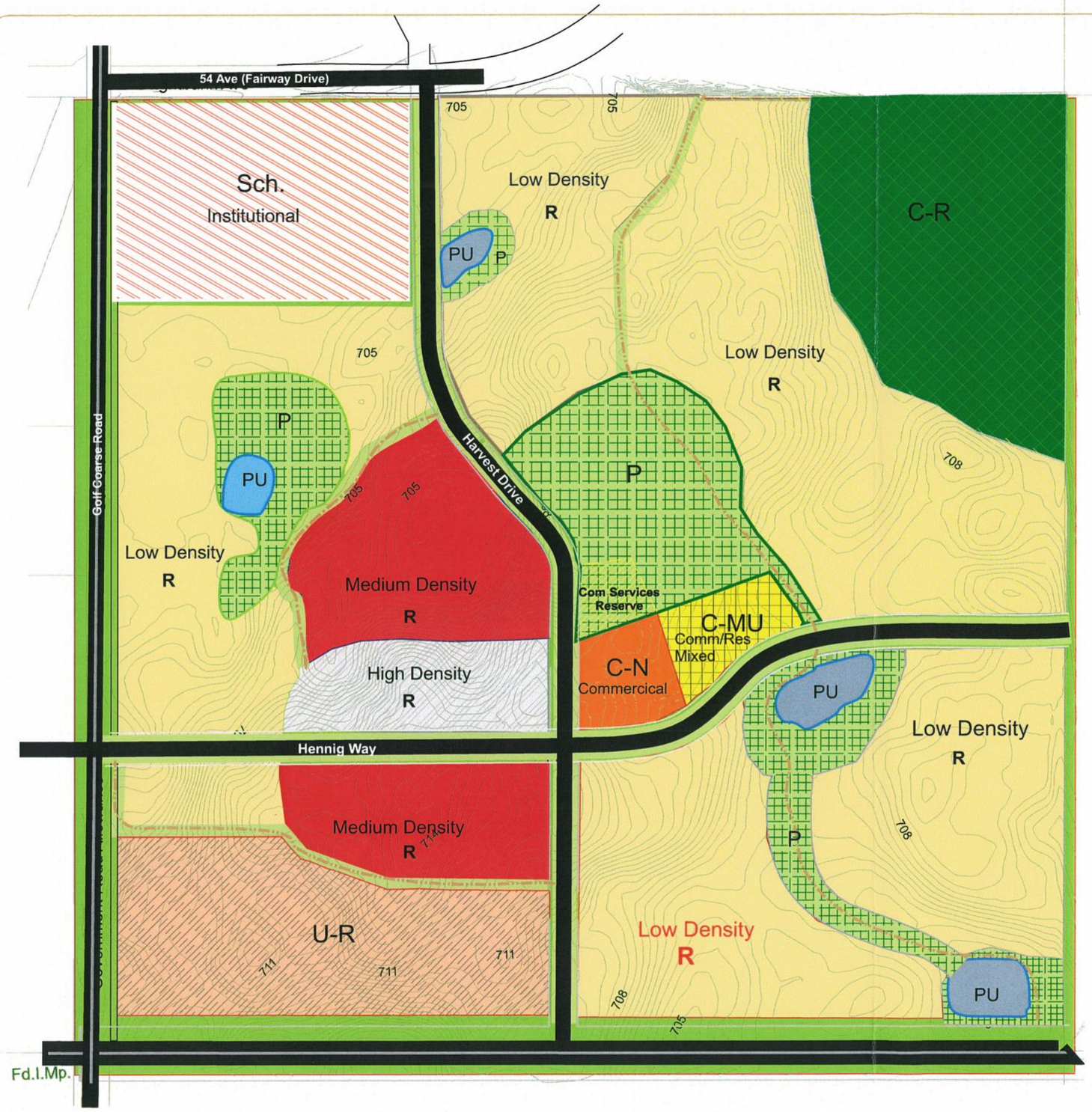
- A residential single detached area will form the predominant land use in the northeast portion of the Hennig Lands.
- A residential community located in the north central portion of the Hennig Lands will feature duplex dwellings and some multi-unit dwellings.
- A starter home residential community on small lots is planned as the major land use in the north west portion of the plan area.
- The north west portion of the plan area will also feature a bare land condominium community and a (2) to (4) storey cluster residential development.
- The southeast portion of the plan area will feature individual areas for single detached housing.
- The southwest portion of the Hennig Lands will feature a duplex development area as the predominant pre-planned area. The largest amount of land within this area contains the existing farmstead and will be planned for a suitable development at a later date once the farmstead is no longer in use.

Commercial:

- Two adjoining commercial areas are planned for the central portion of the Hennig Lands. In the corner fronted by two collector roads is a neighbourhood commercial area. Adjoining is a mixed use commercial and housing area for live/work opportunities.

- Parkland:
  - Within the Hennig Lands parkland is extensive and each park is linked to the overall municipal trail system.

- Institutional:
  - The primary institutional use for the Hennig Lands is a planned school site, located in the north west corner of the site.



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Area Structure
Development Plan
for

Home Acres
NW-30-52-27-W4
Stony Plain
R & B Hennig

Proposed Land Use
March 2010

Legend	Code	Land Use	Area (ha)
		Res - low density	28.01
		Res - Med density	5.10
		Res - High density	1.65
		Commercial	0.67
		Res/Comm	0.69
		Institutional	4.09
		Urban Reserve	4.63
		MR	6.53
		ER - Cons Reserve	5.41
		PUL	0.92
		Roads, RofW,Trails Buffers	7.00

NC-155 3.30.10

NORCAN CONSULTING GROUP INC.

3.3) Residential Development Concept

The Hennig Lands will feature a variety of residential development opportunities for family living. A total of 1070 residences (estimate) are planned for the Hennig Lands.

Each area will be developed independently of other adjoining areas once the main internal roads and utility services are installed.

Each area is described in more detail below.

(Single detached)

Low Density

Four single detached areas are planned within the Hennig Lands that will comply with standard land use district standards:

R-1A: This area will feature single detached homes on lots with a minimum frontage of 15 metres, with laneways and rear attached/detached garages.

All development within this area will be in accordance with the Section 59: *R-1A Detached Residential District*.

This portion of the Hennig Lands Area Structure Plan will have an approximate area of 8.40 ha. (20.76 ac.).

R-1B: This area will also feature single detached residential housing, but will feature a higher density on a 12 metre minimum lot width laneless design with front attached garages.

All development within this area will be in accordance with the Section 60: *R-1B*

	*Detached Residential District*. This portion of the Hennig Lands Area Structure Plan will have an approximate area of 6.36 ha. (15.72 ac.).
	**R-1C:** This single detached residential district will be a lane subdivision with rear attached/detached garages. Lots will have a minimum 11 metre (36 ft.) frontage. All development within this area will be in accordance with the Section 61: *R-1C Detached Narrow Lot Residential District*. This portion of the Hennig Lands Area Structure Plan will have an approximate area of 4.46 ha. (11.02 ac.).
	**R-1D:** The R-1D area will be a single detached subdivision conformant to the design regulations contained within the *R-1D Detached Small Lot Residential District*. This area will feature a lane subdivision with rear attached/detached garages. This portion of the Hennig Lands Area Structure Plan will have an approximate area of 4.72 ha. (11.66 ac.).
(Multi-unit) Low & Medium Density	**R-2:** The R2 District as described in Section 65: *Two-Dwelling Residential district* will be primarily a neighbourhood for duplex dwellings. The area will be developed with lanes and will feature side by side and multi-story duplexes. Each duplex dwelling may have a shared or individual garage at the discretion

	of the approving authority, based upon the proposal brought forward by the developer. This portion of the Hennig Lands Area Structure Plan will have an approximate area of 4.07 ha. (10.06 ac.).
	**R-2S:** The *R-2S Street Oriented Medium Density Residential District* as described in Section 67 of the Land Use Bylaw will feature duplexes as the predominant land use with an option for row housing up to two units per building. The R-2S District will be a lane district with all garages, both attached and detached or shared in the rear yard. This portion of the Hennig Lands Area Structure Plan will have an approximate area of 2.07 ha. (5.11 ac.).
(condominium) 	**R-2C:** The R-2C housing development will feature a duplex, fourplex and row house community in accordance with Section 66: *R-2C Comprehensive Medium Density Residential District*. The R-2C District will be a gated community with an adult only population. The population for "adult" classification will be determined through consultation between the developer and the Town of Stony Plain. Application of Section 66(L) with respect to a communal amenity space is strongly encouraged within this area. Densities approved within this neighbourhood will likely make a common area for condominium recreation or assembly a necessary component of the development.

	This portion of the Hennig Lands Area Structure Plan will have an approximate area of 3.03 ha. (7.49ac.).
(cluster housing)  	**R-4:** The R-4 area will be developed as a cluster housing development with residential structures between 2 and 4 stories above grade. As described within Section 69: *R-4 High Density Medium Rise Residential District*, this neighbourhood will feature apartment buildings at a maximum density of 175 units per hectare (432 units per acre). This portion of the Hennig Lands Area Structure Plan will have an approximate area of 1.65 ha. (4.08 ac.).
3.4) Residential Design Standards (mobility impaired)	The following design standards will be encouraged in residential development where determined to be appropriate by the Town of Stony Plain in consultation with the public and the development plan of individual developers. Consideration may be given to having the sole vehicular access to the row house being from the lane and the front yards fronted on each side by row housing developed as a

common park area within a non-gated condominium setting. This option can only be exercised by clearly stating the intent at the pre-planning level for the respective neighbourhood.

In multi-housing developments that are not exclusive, developers are encouraged to have due regard to the growing elderly and mobility impaired population within the region. The Town of Stony Plain will encourage developers to consider the development of a portion of duplex and row-housing neighbourhoods with a minimum of 10% of the dwellings being accessible for the mobility impaired.

This will provide a unique opportunity for families to share a duplex between them, one side for the elderly or mobility impaired and the other for supportive family members with a shared garage.

The Town may consider the development of a condominium, society or community association in either single detached or multi-unit developments for the express purpose of providing residential opportunities for the "adult independent" population. Residents will typically be seasonal to full time residents that love independent living, but are not prepared or ready for assisted living, and are not well suited for the range of duties required in single detached housing.

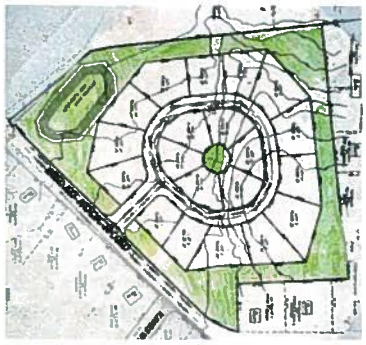
Though designed on a conventional fee-simple basis with public roads and services, the condominium will be established to assist with duties such as:

- Assistance with home security with the ability to "watch over" neighbouring houses that are not

occupied for an extended period of time,

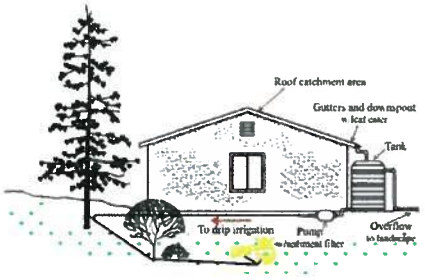
- Mowing of lawns and other yard care services, and

- Snow removal from the driveways, fronting sidewalks and other maintenance duties that are outside of the ability of residents to provide for themselves.



With the exception of neighbourhoods that are exclusively "entry level", all single detached, duplex and row house areas shall have a minimum 1 metre (3.3 ft.) separation distance between the curb and the fronting sidewalk.

In areas where this streetscape methodology is applied with lanes, at the pre-planning stage for new neighbourhoods the developer may reduce the front yard setback to 4 metres (13 feet). A discussion on the benefits of this design standard is provided in Section 3.13.

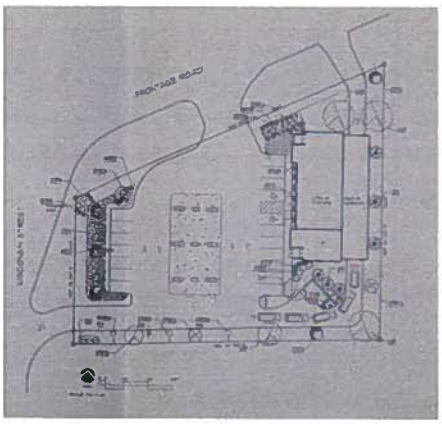


All residential development will be encouraged to maintain an appropriate amount of on-site storage for rain fall for use for plant and shrub watering. Developers shall establish building pockets for all lots and place limits on the amount of each lot that can be hard surfaced in order to reduce storm water run-off.

3.5) Commercial

Development Concept

(neighbourhood commercial)



Two areas are planned within the Hennig lands for commercial development.

Located in the northeast intersection of the north/south and east/west collector roads at the centre of the Hennig Lands, a neighbourhood commercial development is planned. Recommended land uses include: a convenience store, neighbourhood bakery, professional offices and other minor commercial stores that primarily service the Hennig Lands area.

Businesses that would generate excess traffic flow would be discouraged.

Subject to proper pre-planning and at the discretion of the Town of Stony Plan, development of this commercial area is encouraged to include two story buildings that can accommodate professional offices and residential suites on a second floor.

Neighbourhood commercial will be in accordance with the standards provided within the Section 74: C-*N Neighbourhood Commercial District*. If a residential option is applied within this area, the *C-N Commercial District* may be applied.

This portion of the Hennig Lands Area Structure Plan will have an approximate area of 0.67 ha. (1.66 ac.).

Adjoining the neighbourhood commercial area will be a mixed use business/ residential area. Unlike the C-N District, the external design of buildings within this area will be entirely residential and the resident of the building must be associated with the commercial business that takes place on the premises.

The mixed use area should be developed with an internal road system separated from the collector road by a boulevard.

Employment within the area should be limited to residents only. During the pre-planning stage, on-street parking (not permitted on the collector street) shall be sufficient to accommodate all non-resident employees and customers.

Businesses that could be considered for this area may include professional services and other businesses that require very low numbers of employees and feature appointment based clientele.

This portion of the Hennig Lands Area Structure Plan will have an approximate area of 0.69 ha. (1.70 ac.).

3.6) Parks and Recreation

Parks and recreation is a significant component of the overall land use within the Hennig Lands. Within this area is included a large conservation (environmental) reserve, two large central parks, linear parks and an extensive trail system.

Located in the northeast portion of the Hennig Lands with an area of approximately 5.41 ha. (13.37ac.), the conservation reserve area serves as a general drainage basin and features vegetation and soils characteristic of a high water table. The land meets the criteria for environmental reserve and will be designated as an environmental reserve lot upon subdivision. Not to be a natural state reserve, low impact walking trails may be constructed within the conservation area. The primary use of the conservation area will be for wildlife habitat.

The central park is located north of the commercial area and bounded on the west by the north/south collector road and on the north and east by single detached and duplex residential neighbourhoods.

This park will feature a playground and a multi-use sports field. It will complement the sporting opportunities provided at the nearby proposed St. Matthew Lutheran School. Limited on-street parking and an off-street parking area may be provided subject to the long term use requirements of the park.

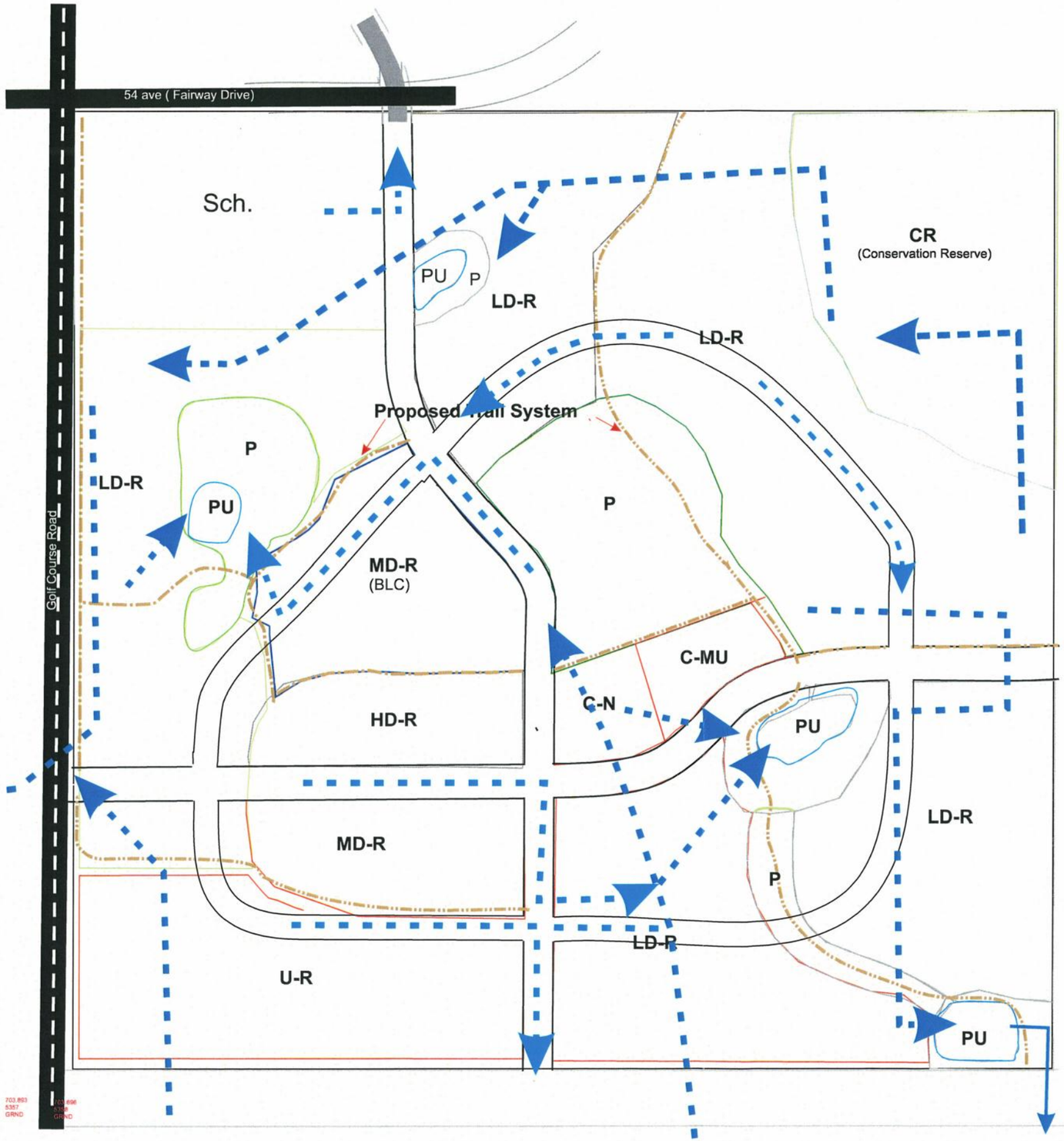
The park to be located in the southeast will be completely surrounded by residential land uses and will be developed as a neighbourhood park. The land within this park includes extensive recreational use such as walking trails and intensive uses such as a children's playground.

Adjoining the park will be a storm water detention pond. Discussion on mitigation measures regarding the storm pond adjoining the park settings follows in Section 3.8.

The west park will be designed to provide a wider range of activities than the southeast park. This park will be developed to provide recreational opportunities for younger children including playgrounds, smaller sports fields and sitting areas for adults.

Small parks serving only as open space surround the storm ponds. The parks will be connected to the trail system and may feature some minor recreation infrastructure such as a sitting area. The total municipal reserve/open space lands shown are 6.53 ha (16.14 ac.).

3.7) Community Services  	To date, the Town of Stony Plain has concentrated community services near the downtown core. Police Services, Fire Department, Libraries, Postal services and other similar services are provided through the downtown. One exception is the Hospital which is located northwest of the Hennig Lands. No lands are planned for community services at this time within the Hennig Lands. Notwithstanding, there are compatible community services that can be approved within the neighbourhood commercial area, if required. Alternatively, a portion of the central park area can be described as a "community services reserve" to accommodate a public library, police station, not for profit day care or senior's facility, municipal service or affordable housing. As part of this plan, a 0.3 hectare area (0.75 acre) site adjoining the neighbourhood commercial is planned for community services reserve. At the planning stage in advance of the subdivision process, the Town of Stony Plain may determine that this land be part of the municipal reserve comprising central park. As part of the pre-planning process where park land is to be created, the developer shall be required to prepare a landscape and development plan for each individual park planned for the Hennig Lands.
3.8) Servicing Concept	Servicing within the Hennig Lands will be provided as follows: All franchise utilities will be provided below ground in accordance with municipal and utility standards.



N

Area Structure **Development Plan**

for

NW-30-52-27-W4

Stony Plain

Home Acres

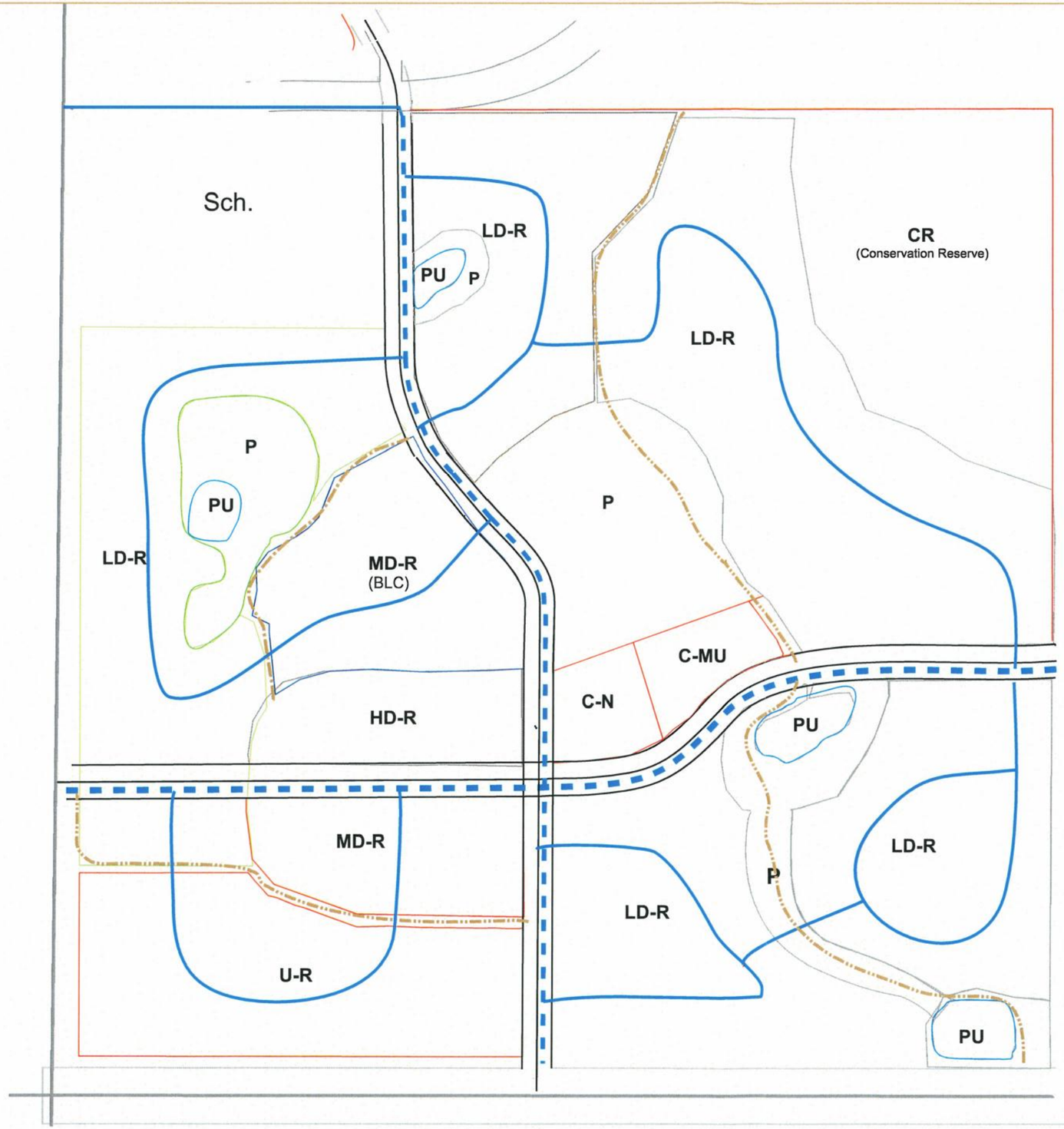
R & B Hennig

Storm Water Drainage Concept Plan

March 2010

NC-155 2.06.10

NORCAN CONSULTING GROUP INC.



N

Area Structure **Development Plan**

for

NW-30-52-27-W4
Stony Plain
Home Acres
R & B Hennig

Proposed **Water Network**

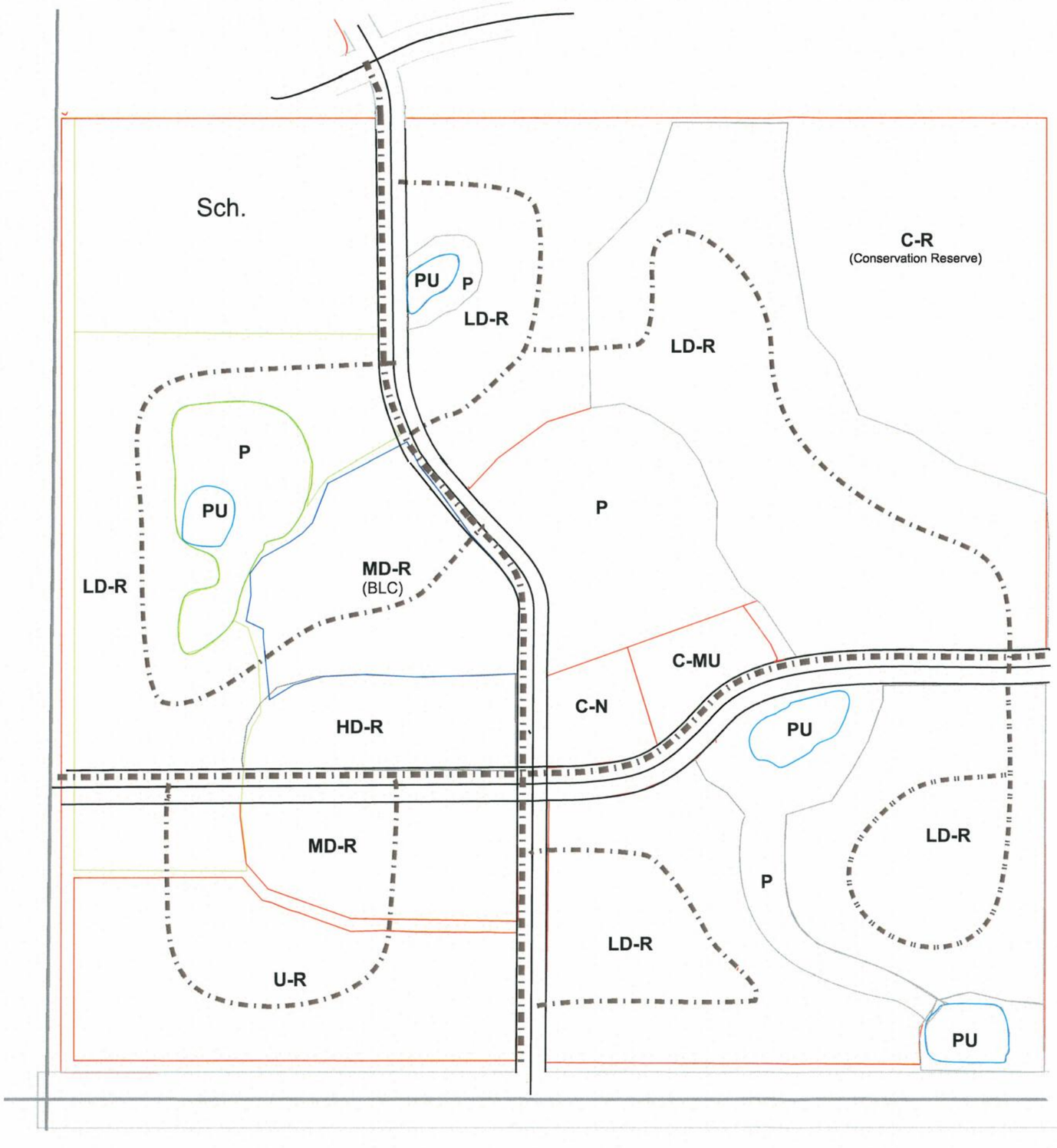
March 2010

250-300 mm water main

Primary Distribution

NC-155 2.06.10

NORCAN CONSULTING GROUP INC.



N

Area Structure **Development Plan**

for

NW-30-52-27-W4
Stony Plain

R & B Hennig

Proposed Primary Sanitary Sewer Collection

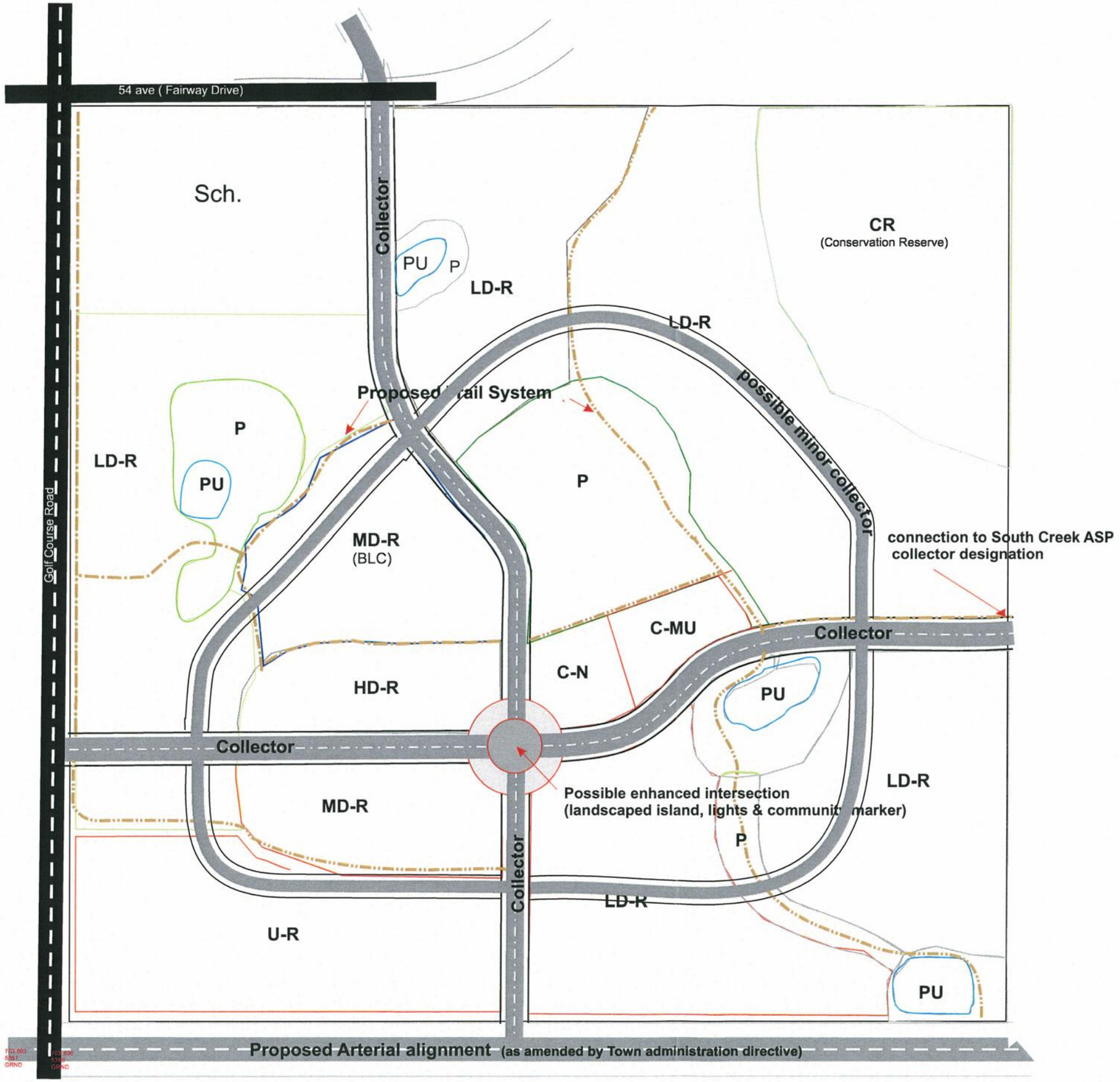
February 2010

S Sewer Trunkage

S Sewer Primary Collection

NC-155 2.06.10

NORCAN CONSULTING GROUP INC.



N

Area Structure **Development Plan**

for

NW-30-52-27-W4
Stony Plain
Home Acres
R & B Hennig

Proposed

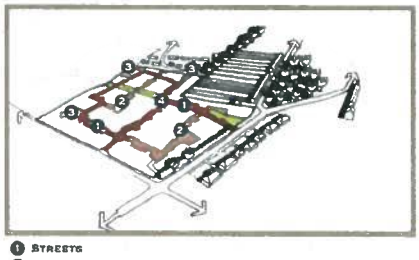
Transportation & Trail

March 2010

NC-155 2.06.10

NORCAN CONSULTING GROUP INC.

   	Potable water services will be provided through a 250-300 mm (9.8 to 12.24 in.) line that runs within the collector road right of way. Distribution lines will vary depending on the nature of the development proposed. (Refer to Proposed Water Network Map) Waste water collection services will be provided via trunkage connections to the north and west , with contained within the collector road right of ways. (Refer to Proposed Primary Sanitary Sewage Collection Map) Storm Water collection, storage and deferment will be in accordance to provincial licensing and Town standard requirements. Where possible on site retention for reuse and recycle (aquifer recharge) will be promoted in the landscape scheming and lot development architectural guidelines. (Refer to Storm Water Drainage Map in plan)
3.9) Traffic Circulation	All roads within the Hennig Lands shall be constructed to municipal standards, except where modifications are approved in advance by the Town of Stony Plain as part of an innovative design project. The Hennig Lands will be serviced primarily to the west as no immediate plans are underway to develop the quarter-section to the east or south. The Hennig Lands will be serviced on the south through an east/west arterial roadway. This roadway will connect Golf Course Road to the west. It will feature the standard 30.0 metre (98 feet) right of way width.



Two 25 metre (82 ft.) right of way width collector roads are planned for the Hennig Lands. The north/south collector will connect the south arterial to the north connecting Fairway Drive. The other collector road will connect Gold Course Road to the east adjoining quarter-section.

Until the quarter-section to the east is developed, all traffic will be directed towards Golf Course Road through Fairway Drive, the east/west collector road and the south arterial road. However, the presence of a school zone and a large playground area will have the impact of reducing traffic north of the central commercial area towards Fairway Drive.

3.10) Future Transit

As part of the overall planning process, after approval in principle has been given to the design for the Hennig Lands, this Plan shall be referred to the regional transit authority for their input regarding the future placement of transit stops.

3.11) Postal Service

CANADA POST / POSTES CANADA
From anywhere... to anyone / De partout... jusqu'à vous

As part of the overall planning process, after approval in principle has been given to the design for the Hennig Lands, this Plan shall be referred to Canada Post for their pre-planning efforts in determining postal codes and location of postal service boxes.

3.12) Urban Design Guidelines

Development within the Hennig Lands shall apply, where appropriate, the "*Town of Stony Plain Urban Design Toolkit*". In particular, the following components will be part of any development within the lands:

- A focal point will be constructed at the intersection of the two collector roads. The focal point will illustrate the

   	character of the neighbourhood and provide a bridge that connects the Hennig Lands to the greater Town of Stony Plain. • Commercial buildings within the Hennig Lands will also emphasize the overall theme of the Hennig Lands through building facades and landscaping standards on commercial properties. • Artistic Character will be maintained through artwork located in identified places such as the community focal point, the commercial area, parks and trails. As part of the development process, fountain(s) may be installed in storm water pond(s) within the Hennig Lands. • The commercial area will feature bicycle racks to enable cycling within the neighbourhood. Trails will be constructed to a bike friendly standard. Planter boxes will be installed within the commercial area and at community entrances.
(quality design)	The following measures will emphasise quality development within the Hennig Lands. • Developers are encouraged to provide demonstration homes illustrating cost effective improvements for energy and water efficiency. • Each park shall include a feature that is unique and of quality.

	• All park and open spaces shall be developed in a manner that will be of high quality while reasonably reducing maintenance. • Natural screening shall be the priority method for any screening or buffering within the Hennig Lands. • Developers will be encouraged to limit fencing to open fences such as chain link without privacy slats as a means to promote openness and encourage community partnerships in maintaining private and public open spaces.
(Safety & Accessibility) 	The following measures will emphasise safety and accessibility within the Hennig Lands. • The Hennig Lands will be linked to other areas of the Town of Stony Plain through both road and pedestrian/cycle linkages. • Quality design standards will be employed to minimize areas that are difficult to observe. High opaque fencing, blind corners and poor lighting will be strongly discouraged. • Lighting will be placed to assist with aesthetics and surveillance. • Signage shall be clear and appealing. Where appropriate, signage should also be complementary to the overall theme of the Hennig Lands.
(Character)	The following policy directions will apply to the Hennig Lands to ensure a respect for neighbourhood character. • Neighbourhood design within the Hennig

	Lands shall be complementary to the other areas of the Town of Stony Plain. • The commercial area of the Hennig Lands will be encouraged to incorporate elements of the history of Stony Plain into its building or landscape design. • Uniform design is strongly discouraged. Developments shall include a variety of floor plans, colours, building materials and facades to promote individuality.
(sustainable development)	The following sustainable initiatives are incorporated into the Hennig Lands. • A mixed use commercial and residential area is proposed near the centre of the Hennig Lands. • Multi-generational housing is to be integrated in several neighbourhoods within the Hennig Lands. • The Hennig Lands achieves a higher than average urban density while maintaining a predominantly low density style of housing. • The use of "green technologies" is strongly encouraged within the Hennig Lands. This includes energy efficient appliances, solar lighting, energy source technology and ways to minimize potable water use
3.13) Sustainability Standards	It is our intention to fully comply with the sustainability guidelines of the Town of Stony Plain. Though it is acknowledged that the Hennig Lands ASP is a "broad brush" approach and that further detailed planning is necessary to conform to sustainability guidelines, the following shall be used as a guide in future planning:

(community pride & heritage)

All development within the Hennig Lands shall be of new construction and reflect the community standards that are in affect at the pre-planning stage.

Developers will be encouraged to develop a theme for each neighbourhood. The focal point of the Hennig Lands neighbourhood shall be the neighbourhood commercial area. Development of this area shall include a feature that will reflect a general theme for the remainder of the lands.

The use of murals on commercial and/or institutional building walls will be encouraged.

(diversification)

The Town of Stony Plain may limit the floor area of commercial businesses within the Hennig Lands as a means to ensure the business focus remains in existing commercial area.

The encouragement of secondary suites on a second floor of the neighbourhood commercial area will successfully attract a new type of architecture and business model to the Town of Stony Plain.

The mixed use commercial residential area will provide a unique opportunity to promote live/work professionals in an urban setting. New construction and pre-planning will facilitate a live/work node within the Hennig Lands, providing an environment for people to live at home while working without interfering with the local neighbourhood.

(business opportunities)	As the Hennig Lands are undeveloped, there are no existing businesses within the lands that will benefit from this development. However, it is anticipated that the Hennig Lands will facilitate further growth for existing businesses, will attract new businesses and will provide employment for residents of the Town.
(arterial commercial expansion) 	The Hennig lands are bounded on the west by the Golf Course Road arterial and the future arterial road on the south boundary of the lands. There are no plans for commercial development on either of these frontages, however the south west portion of the subject lands is proposed as urban reserve, and future needs and assessments may include commercial possibilities in this area, due to the exposure to major traffic routes.
(Downtown Enhancement) 	The Hennig lands are geographically distant from the Downtown Core of the Town of Stony Plain. Through the pre-planning process, the Planning Authority will encourage business development that will complement the Downtown Core rather than detract from it. All commercial development within the Hennig Lands shall be developed with the understanding that the Downtown Core is the focal point for the entire Town of Stony Plain and that the Town's success depends in large part to the health of the Downtown Core.
(natural environment)	Much of the Hennig Lands are currently under cultivation. Efforts have been made to preserve all watercourses, low lying areas, treed areas and other lands of environmental significance.

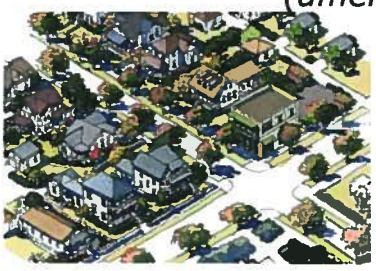
(natural hazards)	Fortunately, none of the Hennig Lands is within an identified flood plain. Nevertheless, storm water management will be designed to a 1 in 100 year level in accordance with municipal and provincial standards. All areas featuring a high water table are to be left undeveloped. These areas will be more accurately defined as part of the pre-planning process for each neighbourhood.
(habitat issues) 	To date, no wildlife corridors have been identified within the Hennig Lands. This is likely due to the fact that there is little forest cover on the lands to provide shelter for wildlife. As part of the overall park development plan, the Town of Stony Plain may require a conservation reserve area to be habitat centred rather than a recreational area.
(efficient use of land) 	The Hennig Lands ASP includes a number of policy directions that will help reduce the footprint for development and promote the more efficient use of land. Double fronting streets are strongly discouraged except where the fronting street is a collector or arterial road that restricts access as part of an overall access management program. Developers within the Hennig Lands will be encouraged to use their imagination and to incorporate vision and individuality into their developments within the constraints of a common theme. The use of common

	garages, cluster developments, secondary suites and other measures will ensure that the use of the land is maximized to a reasonable degree.
(energy efficiency) 	Alternative energy both on an individual basis or a district model will be encouraged within the Hennig Lands. Examples will include: • Use of wind power while incorporating technologies that minimize adverse impacts on the surrounding neighbourhood, • Orienting residences to maximize passive solar energy opportunities, • Incorporating solar thermal, solar voltaic and geo-exchange current technologies, • Using current technology to maximize energy and water use efficiency, and • Exclusively using solar powered street lighting within neighbourhoods and in parks.
(complements existing areas)	At this time, the Fairways community is the only subdivision that is immediately adjoining the Hennig Lands. High Park is nearby, but is separated from the Hennig Lands by an arterial road. The Hennig Lands will complement the existing Fairways Development and will enhance the attractiveness of the Fairways community as a place to live. The proposed

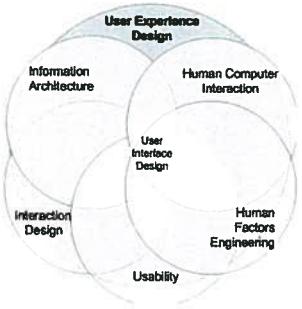
	school site is adjacent to the Fairways and will provide a closer location for educational services for children within that neighbourhood.
(inclusiveness)	One of the advantages of the Hennig Lands is that a variety of land uses will be in close proximity to each other; without artificial walls separating them. Each of the neighbourhoods will share the same commercial sites, parks, roads and trail systems. A unique feature of the Hennig Lands will be the opportunity to provide for independent adult and minor supportive living opportunities to area residents. This will encourage all age groups to live in proximity to each other and reduce the segregation that often occurs in other communities.
(housing mix) 	Other than the high density land use district, estate housing and a manufactured home park, the Hennig Lands incorporates nearly all allowable housing types within the Town of Stony Plain. A variety of lot sizes will be used with most lots being quite small. Multi-family dwellings are located adjoining collector roads within the Hennig Lands.
(community)	Development within the Hennig Lands will tie in to the overall development of the Town of Stony Plain. The following components will assist in this regard: • Use of murals in accordance with municipal guidelines,

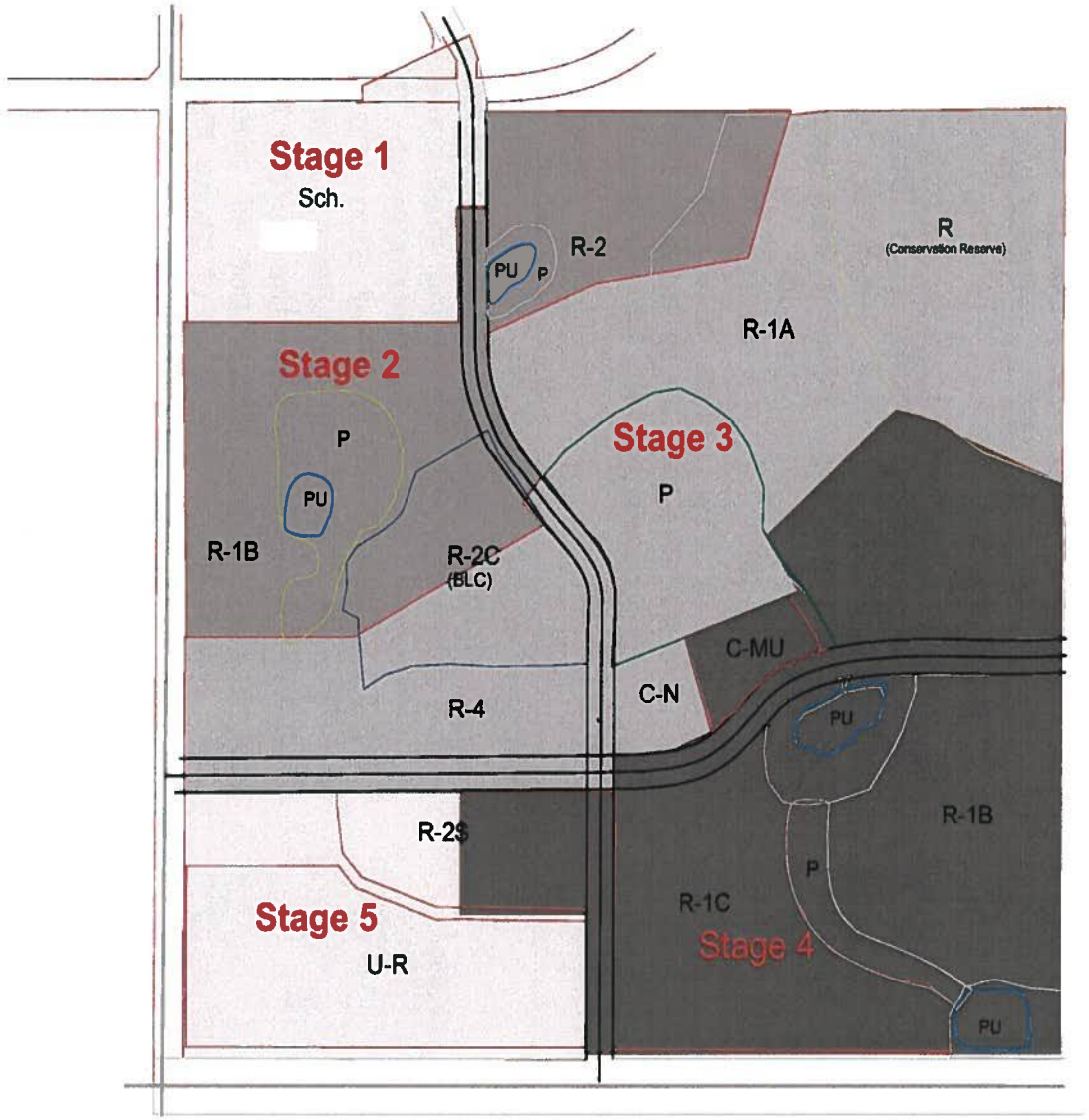
 	• A central feature at the intersection of the two collector roads that ties directly to the history of the Town of Stony Plain, and • At the pre-planning stage, architectural controls shall be placed on development to ensure that it is compatible with the overall architectural guidelines provided by the Town of Stony Plain. In all neighbourhoods, future developers shall incorporate design standards that emphasize a small town atmosphere.
(diversity)	Though no formal community centres are planned for the Hennig Lands, the proposed school site is quite large and can provide opportunities for the surrounding community (i.e., the Fairways and the Hennig Lands) to share the gymnasium as a community centre. The Hennig Lands will also benefit from proximity to the golf course and the first class meeting room that is provided at that facility.
(institutional services)	As indicated earlier in this Plan, a school site is planned for the northwest corner of the Hennig Lands. This site is fronted by an arterial and a collector road. It is not known whether or not medical services will be provided within the Hennig Lands and a community centre is not planned at this time. Should a community centre or medical facility be located within the Hennig Lands it will likely be within the community reserve and/or neighbourhood commercial area. It is acknowledged that this area is not located at the edge of the neighbourhood or on an arterial inter-section, however, the location is easily

	accessed though two collector roads and is within easy pedestrian distance from all portions of the Hennig Lands.
(crime deterrence) CELEBRATE SAFE COMMUNITIES  	Neighbourhoods are to be planned in a manner that minimizes the opportunity for crime. This shall include: • Incorporating the latest standards for lighting in areas proposed for future transit or school bus stops, • In new neighbourhoods the Town will work with developers to reduce front yard setbacks and place vegetative areas as a separation between the curb and sidewalk. These measures have been shown to realize the following benefits: o A trail atmosphere is created in along the sidewalk which eliminates the need for rear yard trails that are sometimes bordered on both sides by wood fences, o A reduction in street crime due to the proximity of the residence to the street, and o A greater sense of community. It has been shown that there is a threshold with respect to the setback from a sidewalk to a residence where residents will either ignore pedestrians or take notice of them. In new neighbourhoods the setbacks can be reduced to promote this ideal. <u>Note:</u> another benefit of this is a larger rear yard without increasing the lot area.

(multi-use trails) 	The Hennig Lands land use plan conforms to the overall trail network for the Town of Stony Plain. In addition to the main trail described within the Town's MDP, additional trails are proposed as a means to further promote connectivity within the community.
(recreation) 	A full allocation of park land is proposed within the Hennig Lands. These parks will provide opportunities for wildlife viewing, walking, cycling, team sports and playgrounds.
(public lands) 	A total of 18% of land is allocated to public green space. This is the aggregate of conservation reserve, municipal reserve, school playground area and community services reserve (if required). Trails within residential communities will provide additional space.
(amenities) 	At this time, a single school site is planned for the Hennig Lands. No day care centres, care facilities, libraries or places of worship are planned, however, these uses are allowable under several of the proposed land use districts and can be included as part of a detailed development plan.
(transportation connectivity)	The Hennig Lands will allow for a full range of transportation systems.

	As part of the pre-planning stage, future transit areas will be established. The commercial node is in the centre of the neighbourhood which will promote ped - estrian and cycle access, All residential neighbourhoods will be located in proximity to a collector road which will allow for an efficient movement of traffic.
(traffic efficiency) 	As mentioned above, all residential neighbourhoods are in close proximity to a collector or arterial road. Prior to the future development of lands east of the Hennig Lands the primary destination from the development site will be Golf Course Road. For this purpose, two (2) collector roads and a single arterial road are provided to efficiently move traffic from the residential area. A notable feature in this regard is that the majority of the south collector road and the arterial road that will experience the highest volumes of traffic at peak times will not be subject to playground speed zone restrictions.
(traffic calming) 	As the Hennig Lands is primarily a "big picture" land use plan, traffic calming is not specifically planned for at this stage. However, as part of the pre-planning stage traffic calming through the use of cul-de-sacs, residential traffic circles and eliminating "through roads" should be considered.
(infrastructure design) 	As part of the Hennig Lands ASP, all infrastructure will be prepared to current engineering standards with due regard to the proposed land use and density described in this Plan.

(stakeholders) 	As of submission of this plan, no stake holders meeting or open house has been held, due to the initial intent and need for this plan to enable the removal of a single parcel for the intended St Matthew Lutheran School site. I tis intended that the applicant will be hosting a public meeting prior to 2nd reading by Town Council.
(Town of Stony Plain) 	The St. Matthew Lutheran Church, Norcan Group and the Hennig Family have enjoyed very beneficial and productive consultation as required during the preparation of this Plan. This has included several direct meetings and other consultations.
(Conformity to Plans)	The Hennig Lands Area Structure Plan conforms to the Town of Stony Plain Municipal Development Plan except where described within this Plan. This Plan does not conform to the Southeast Stony Plain Area Structure Plan. It is requested that these lands be removed from the coverage of the former land use plan.
(Experience) 	Combined, Norcan Group includes more than 60 years of planning experience and 90 years of engineering experience in both urban and rural development. We have provided the Town of Stony Plain with a summary of our experience. In addition, all of the principals for the Norcan Group are small town people, one of whom was a resident of the Town of Stony Plain for 10 years and another has been a nearby resident of Stony Plain (Parkland County) for a lifetime.



N

Area Structure
Development Plan
for
NW-30-52-27-W4
Stony Plain
Home Acres
R & B Hennig

Proposed
Development Staging

February 2010

NC-155 2.06.10

PART FOUR: APPROVAL & IMPLEMENTATION	
4.1) Approval Process	Applications will be made for amendment to MDP and LUB, upon determination by the Town of Stony Plain as to what is needed now and in the future upon application for a subdivision other than the initial school site.
4.2) Review Process	Municipal administration, referral entities and public input meeting will provide final recommendations for Council to review prior to adoption.
4.3) Municipal Plan Amendment	Upon the advice of the Planning Department for the Town of Stony Plain and a review of the current Town of Stony Plain Municipal Development Plan, a Municipal Development Plan amendment will be required to add a proposed school site to the northwest corner of the lands. An application for the proposed amendment will be included as part of the bylaw submission for this Area Structure Plan.
4.4) Southeast Stony Area Structure Plan	It is acknowledged that the Hennig Lands Area Structure Plan (HLASP) conflicts with elements of the Southeast Area Structure Plan (SEASP). The following is a description of conflicts that exist and recommendations on how to properly address them: Background: Since the SEASP was adopted in 1983, the major development within the Plan Area has been High Park, located to the southwest. Perhaps of more significance is the development of the Fairways neighbourhood on the north adjoining property – outside of the jurisdiction of the SEASP. Transportation: The SEASP described an internal road within the Hennig Lands approximately 300 metres north of the southwest corner of the property. Access to the Hennig Lands did not depend on first obtaining access from neighbouring properties.

	Under the HLASP, the main east-west road will extend from golf course road. As discussed earlier in this Plan, the proposed road will be generally in conformance with the road alignment that is contained within the current MDP. It is noted that changes to the road alignment proposed in the HLASP will bring the subject lands into a better alignment with the Fairways development to the north and will not adversely impact other developed lands. A result of the road alignment proposed in the HLASP will be that the planning for the land to the south (SW30-52-27-4) will have to be updated. Utilities: As per conventional design standards, main trunk lines for water, sewer and franchise utilities will usually follow the major internal roads. With the changes described above, it is acknowledged that the HLASP, though generally in conformance with the future land use scheme of the MDP, will not be in conformance with the SEASP. Parks and Trails: Though the Parks and Trails layout in the HLASP generally conforms to that of the MDP, the location of parks and trails do not conform to the layout within the SEASP. - Recommendation: It is recommended that the Hennig Lands be removed from the land covered by the SEASP. - Consideration: In light of the review standards in place by the Capital Region, consideration may be given to rescinding the entire SEASP rather than updating it to conform to modern standards.

4.5) REF Review	The following table outlines the Developers' view with respect to compliance with the principles of the TREF review by the Capital Region Board.

LAND USE ISSUE:		COMMENT
A. Preserve and Protect the Environment		
Any development which may cause detrimental effects such as erosion or pollution to lakes, rivers, water bodies and shorelines shall be prohibited unless appropriate mitigative measures are implemented.		• All development will be in accordance with the municipal and provincial guidelines for water run-off. • Developers will be encouraged to implement a general policy to minimize hard surfacing of land
Any development which fragments contiguous natural features, functions and habitat, such as water systems, moraines, forests, wetlands, and wildlife habitat and corridors shall be discouraged.		• Natural features within the Hennig Lands are maintained at their current boundaries and will be protected as conservation lands.
Support governmental environmental initiatives and seek opportunities for coordinated initiatives between municipalities.		• All environmentally sensitive lands will be protected in accordance with the latest environmental standards.
Manage regional watersheds to protect, restore and ensure the sustainability of natural water systems.		• In an effort to assist with watershed management the Hennig Lands will incorporate storm water ponds to reduce off-site flow and will maintain natural areas.
Support innovative design, construction and operational technologies and strategies which reduce emissions.		• Each of these elements are emphasized to be incorporated within the Hennig Lands.
Manage land use distribution patterns to reduce reliance on automobiles.		• Trail systems and the placement of the commercial area in the centre of the Hennig Lands will assist with the reduction in automobile use by promoting reasonable access to services by area residents.

LAND USE ISSUE:		COMMENT
B. Preserve Agricultural Lands		
To comply with the requirement of the Regulation to identify agricultural land, the Land Use Map has been prepared to identify agricultural lands. The Land Use Map identifies all agricultural lands designated in the Municipal Development Plans of CRB Municipalities.		Not applicable as this is an urban development.
In accordance with the final Provincial Land Use Framework (i.e. the North Saskatchewan Regional Plan), and through a process involving consultation with CRB municipalities and consideration of the full policies of the CRB land use framework and overall Growth Plan, a revised Map will be prepared to identify Agricultural Lands which will need to be preserved from future fragmentation and conversion to other uses.		Not applicable as this is an urban development.

LAND USE ISSUE:		COMMENT
C. Protect Natural Resources		
Any development that compromises the extraction of natural resources shall be discouraged.		Not applicable as this is an urban development.
Prevent development of incompatible uses adjacent to natural resource areas.		Not applicable as this is an urban development.
Prevent premature development of natural resources.		Not applicable as this is an urban development.

LAND USE ISSUE:		COMMENT
D. Minimize the Impact of Development on Regional Watersheds and Airsheds		
Any development which impacts the regional watersheds or airsheds shall comply with all applicable federal and provincial legislation.		• The Hennig Lands shall comply with all provincial, municipal and federal regulations that are applicable to urban development.

LAND USE ISSUE:		COMMENT

II. MINIMIZE REGIONAL FOOTPRINT		
A. Identify, Protect and Prioritize Lands for Regional Infrastructure		
Ensure that lands identified for regional infrastructure such as energy transmission, highways, municipal infrastructure, transit and related facilities are protected from incompatible development.		Not applicable as this is an urban development located away from regional corridors.
The Province and the municipalities shall continue to identify lands that will be used for regional infrastructure. Once identified, these lands shall be protected for the designated use in applicable plans.		No lands within this Plan Area have been identified for regional infrastructure.
The CRB will work with the Province and municipalities to define and prioritize the need for and, if required, the future form, function and final alignment of multi use corridors, including infrastructure, storm water, potable water, sewer, utility, transportation (rail, roads and trails), pipeline and communications.		The Hennig Lands do not fall within any identified regional corridor.
The CRB shall set priorities on regional projects to ensure the targeting of regional public investments in priority growth areas. The establishment of regional infrastructure priorities shall be updated as required.		Not applicable.
Encourage and support sustainable development within the region.		Sustainable development is emphasized through this Plan and the sustainable development guidelines of the Town of Stony Plain.

LAND USE ISSUE:		COMMENT
II. MINIMIZE REGIONAL FOOTPRINT		
B. Concentrate New Growth Within Priority Growth Areas		
Most new growth shall occur within Priority Growth Areas.		The Hennig Lands are a pre-determined future residential growth area within the Town of Stony Plain.
Priority shall be given to accommodating growth in major employment areas and in locations that meet at least three of the following four criteria:		
a. Existing and proposed multi-mode movement corridors, including transit nodes		Transit nodes will be provided for within the Hennig Lands.
b. Adjacent to existing and proposed major		The Town of Stony Plain and surrounding

employment areas		area has been and continues to be a major economic generator and employment source in the Capital Region.
c. Redevelopment and intensification opportunities within existing urban areas		Not applicable as this is a new development on vacant lands.
d. Locations that utilize existing infrastructure and servicing capacity or logically and efficiently extend that infrastructure		All infrastructure within the Hennig Lands is an extension of existing municipal infrastructure.

LAND USE ISSUE:		COMMENT
II. MINIMIZE REGIONAL FOOTPRINT		
(iii) The CRB shall review the Priority Growth Areas in conjunction with, or subsequent to, the approval of:		
▪ Changes to the routing of LRT or regional bus service in the Capital Region Intermunicipal Transit Plan		Transit stops are contemplated as part of the Hennig Lands plan.
▪ Creation of new or significant adjustments to major employment areas in the Plan area		The Hennig Lands will create residential areas and will not result in a significant amount of long term employment.
▪ New alignments or changes to alignments and/or location of major regional infrastructure		No new alignments are contemplated as part of the Hennig Lands.
(iv) In making decisions regarding allocation of regional infrastructure resources, first consideration will be given to Priority Growth Areas.		No regional infrastructure is required to accommodate the Hennig Lands.
(v) Priority growth areas shall incorporate intensive forms of development that significantly exceed existing development patterns.		The Hennig Lands will achieve a higher than usual density of housing while maintaining low density housing types.
(vi) Transit corridors and nodes within the priority growth areas shall be identified. Growth within nodes and along these corridors shall be intensified. Encourage and support multi-use and multi-storey development at the nodes within the Priority Growth Areas.		Transit corridors will be identified.when the master plan for the region becomes available.
(vii) Ensure that transit corridors and nodes are identified and developed with a range of mixed uses and densities. These uses shall be integrated with existing and potential employment centres.		The Hennig Lands incorporates a mixed use and density.
(viii) Determine the degree of intensity for each transit corridor and node based on its		The Hennig Lands do not form a part of a higher density transit corridor.

location.		
(ix) Development on or near municipal boundaries shall be compatible and consistent with the policies of the Plan and shall not impede the sustainable delivery of infrastructure.		The Hennig Lands are well inside the corporate boundaries of the Town of Stony Plain and

LAND USE ISSUE:		COMMENT
C. Allow Growth Outside of Priority Growth Areas		
(i) Allow development outside of the Priority Growth Areas if the following criteria are met:		Not applicable as this land is within an urban an community.
a. It is contiguous to existing development		
b. It follows the principles and policies of this plan related to the form of development		
c. The level of services provided is appropriate to the form of development		
d. Development in this area will not adversely impact the provision of regional infrastructure required to service the Priority Growth Areas		
(ii) Growth generated by new development should conform to the principles and policies of the CRB plan.		
(iii) All municipalities shall be allowed to grow. The cumulative amount and impact of growth outside of the Priority Growth Areas shall be monitored by the CRB.		
(iv) Development on or near municipal boundaries shall be compatible and consistent with the policies of the Plan and shall not impede the sustainable delivery of infrastructure.		

LAND USE ISSUE:		COMMENT
D. Support Expansion of Medium and Higher Density Residential Housing Forms		
(i) New residential developments shall provide a greater proportion of higher		It is the opinion of the developer that high density development is provided in

density residential units.		adequate quantities elsewhere within the Town of Stony Plain. However, the approach taken with the Hennig Lands will achieve an above average residential density with low to medium density housing. Notwithstanding, an area is provided for higher density housing that will complete an overall housing mix.
(ii) Support innovative housing designs and/or built forms within new and existing residential neighbourhoods.		Innovation is stressed in a variety of areas within the Hennig Lands.
(iii) Greenfield developments shall make provision for a mixture of uses including a diversity of housing forms, community services, local retail and employment opportunities.		The Hennig Lands will not generate a lot of permanent employment. The Town of Stony Plain has other areas within the Town that are designed as employment generators.
(iv) Transit accessibility must be included in the design of all new developments.		Transit options will be included as part of the Hennig Lands.
(v) This Section does not apply to country residential developments.		

LAND USE ISSUE:		COMMENT
E. Support Cluster Country Residential Development		
(i) Country residential uses shall be allowed in designated areas in a clustered form in order to preserve environmental or open space features. Such developments shall utilize communal water and sanitary services. Private communal services may be allowed at the discretion of the Municipality.		Not applicable

LAND USE ISSUE:		COMMENT
III. STRENGTHEN COMMUNITIES		
A. Create Inclusive Communities		
(i) Encourage and support the establishment of social infrastructure throughout the region.		The Hennig Lands provides several means to strengthen communities and to bind communities closer together.
(ii) Support initiatives to improve the liveability of communities.		The Hennig Lands will support all community initiatives to improve community living.
(iii) Integrate uses with adjacent developments to improve connectivity and accessibility to local parks, open space,		The Hennig Lands is well connected to adjoining existing and future developments.

commercial, and community services.		
(iv) Encourage co-location and/or shared use of compatible public service infrastructure, such as education facilities, parks and civic uses.		This issue is better discussed between the future school authority and the Town of Stony Plain.

LAND USE ISSUE:		COMMENT
III. STRENGTHEN COMMUNITIES		
B. Support Healthy Communities		
(i) Support the implementation of present and future initiatives to create and enhance parks, trails and natural areas for public use.		The Hennig Lands creates a number of parks, a natural area and connects each to the overall municipal trail network.
(ii) Improve accessibility to community services by providing sidewalks, bicycle trails to encourage walking and cycling and locate these services within proximity to transit, where possible.		Trails are integrated into the overall community created by the Hennig Lands.
(iii) CRB municipalities will work together to define and prioritize the need for, and if required, the future form, function, and location of a system of regional parks, open space, and greenways that will preserve important environmental and natural features for public purposes.		No regional parks, open space or greenways are planned for the Hennig Lands.
(iv) Encourage and support innovative and green design solutions for neighbourhoods and buildings.		The implementation of green technologies is strongly encouraged in the Hennig Lands.
(v) Encourage and support innovative forms of communication and technology within the region.		Innovations in the areas of communication and technology is outside the scope of this project.

LAND USE ISSUE:		COMMENT
C. Support Public Transit		
(i) Provide a mix of higher intensity land uses along transit corridors, at nodes, and employment centres.		The Hennig Lands are not developed primarily as a higher density community. This provision may not be applicable..
(ii) New developments shall plan for public transit support facilities such as park and ride lots (where appropriate).		A park and ride lot is not considered appropriate at this location.
(iii) New developments shall be designed for connectivity and accessibility to transit facilities.		The Hennig Lands is designed to accommodate transit throughout the plan area.
(iv) Prioritize public investments in multi-		Outside of the scope of this project.

modal transport, park and ride lots, transit, and transit related services, in locations approved by the CRB.		

LAND USE ISSUE:		COMMENT
D. Support Innovative and Affordable Housing Options		
(i) Municipalities shall provide for a diversity of housing needs for the entire population of the region.		The Hennig Lands provides a wide range of housing with affordable options.
(ii) All residential developments shall provide a greater variety of housing types.		A large variety of housing types is provided.
(iii) Encourage intensification opportunities within existing residential neighbourhoods.		Not applicable as this is currently undeveloped land.

LAND USE ISSUE:		COMMENT
IV. INCREASE TRANSPORTATION CHOICE		
A. Integrate Transportation Systems with Land Use		
(i) Ensure the identified function and capacity of local transportation facilities is consistent with regional land use principles.		It is understood that the Hennig Lands development plan is consistent with this objective.
(ii) Ensure the integration of public transportation infrastructure and land use development		Public transportation systems are integrated into the development of the Hennig Lands.
(iii) Design transportation infrastructure to support multiple modes of transport.		Both vehicular, transit and pedestrian/cycle transportation options are offered within the Hennig Lands.
(iv) Support development of inclusive communities to reduce the need for travel.		The Hennig Lands will be an inclusive community that promotes neighbourhood services within a reasonable pedestrian/ cycle distance.

LAND USE ISSUE:		COMMENT
IV. INCREASE TRANSPORTATION CHOICE		
B. Support the Expansion of Transit Service in Various Forms		
(i) Expand and extend the level, quality and		The Hennig Lands will be one of the first

range of public transportation options available to serve the region.		communities within the Town of Stony Plain to have pre-planned transit nodes.
(ii) Direct public infrastructure investments to the transit corridors and transportation projects that support regional growth plan policies.		Outside of the scope of this project.
(iii) Support expanded transit options through investment in alternative transit methods (e.g. designated transit lanes, high-occupancy vehicle (HOV) lanes, and park and ride facilities).		Not applicable.
(iv) Support multi-modal transportation options by providing multi-use streets sufficient to accommodate bicyclists, motorists and pedestrians.		This option is at the discretion of the Town of Stony Plain.
(v) Support public transportation options that are environmentally friendly and safe.		Transit stops will be planned to be safe. Environmentally friendly transit construction methods will be encouraged.

LAND USE ISSUE:		**COMMENT**
V. ENSURE EFFICIENT PROVISION OF SERVICES		
A. Design Integrated Physical Infrastructure within the Region		
(i) Coordinate and align infrastructure planning between municipalities.		Not applicable
(ii) Identify and protect corridors for transportation, transit and infrastructure requirements.		Not applicable.
(iii) Ensure coordination of plans with, and provide support to, organizations that provide municipal services in the Capital Region in a shared and coordinated matter.		The Developers of the Hennig Lands will consult as requested by the Town of Stony Plain and the CRB.

LAND USE ISSUE:		**COMMENT**
B. Maximize Utilization of Existing Infrastructure		
(i) Identify methods to share, consolidate or co-locate infrastructure, such as water and wastewater services, between municipalities to improve efficiencies and minimize infrastructure costs.		Outside the scope of this project.
(ii) Utilize energy efficient or green building		This policy is encouraged within the

technologies when upgrading or constructing new infrastructure.		Hennig Lands

LAND USE ISSUE:		COMMENT
VI. SUPPORT REGIONAL ECONOMIC DEVELOPMENT		
A. Ensure a Supply of Land To Sustain a Variety Of Economic Development Activities		
(i) Ensure an adequate supply of land is available for future development of the region's industries and support further diversification of the regional economy.		Outside the scope of this project.

LAND USE ISSUE:		COMMENT
B. Attract and Retain Individuals and Families with a Diverse Range of Skills to the Capital Region to Satisfy the Region's Economic Development Goals		
(i) Provide a wide variety of agricultural, commercial, industrial, institutional, research and other employment opportunities to attract and retain a diverse range of people.		Outside the scope of this project.
(ii) Provide a wide variety of social, educational, recreational and cultural amenities to attract and retain a diverse range of people.		The Hennig Lands is designed to be attractive to a wide range of income groups and ages. Developers will have the ability to express different cultures within the overall design guidelines of the Town of Stony Plain.

LAND USE ISSUE:		COMMENT
C. Support Regional Prosperity		
(i) Support efforts to place economic development opportunities in the most appropriate location in the region.		Outside the scope of this project.
(ii) Promote the concept of a "borderless" region and support efforts to place economic development opportunities in the most appropriate location in the region for the benefit of all. The purpose of this		Outside the scope of this project.

policy is to promote rational land use choices and efficient delivery of infrastructure and public services, not to limit healthy competition among municipalities to attract economic development.		
(iii) Designate areas to support industrial, manufacturing, trading, and transportation activities and services located in the region.		No industrial development is planned within the Hennig Lands.

LAND USE ISSUE:		COMMENT
D. Position the Capital Region Competitively on the World Stage		
(i) Support and retain vibrant, inclusive communities that attract a diverse range of people to the region.		The Hennig Lands offers flexibility in design and housing choices to attract a wide range of people.
(ii) Provide a wide variety of employment opportunities throughout the region.		Outside the scope of this project.
(iii) Support healthy, inclusive, sustainable communities throughout the region.		The Hennig Lands are designed to make substantial inroads on the path to sustainability.
(iv) Provide high quality social, educational, recreational and cultural amenities to attract and retain a diverse range of people.		Outside the scope of this project.

Application
and
Essential Documents

LAND TITLE CERTIFICATE

S

LINC	SHORT LEGAL	TITLE NUMBER
0012 329 561	4;27;52;30;NW	002 206 008

LEGAL DESCRIPTION
MERIDIAN 4 RANGE 27 TOWNSHIP 52
SECTION 30
QUARTER NORTH WEST
EXCEPTING THEREOUT ALL MINES AND MINERALS
AREA: 64.7 HECTARES (160 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE

MUNICIPALITY: TOWN OF STONY PLAIN

REFERENCE NUMBER: 103I232

REGISTERED OWNER(S)

REGISTRATION	DATE(DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
002 206 008	22/07/2000	TRANSFER OF LAND	$932,000	SEE INSTRUMENT

OWNERS

ROLAND CHRISTIAN HENNIG

AND
BERNICE LORRAINE HENNIG
BOTH OF:
BOX 2443
STONY PLAIN
ALBERTA T7Z 1X8
AS JOINT TENANTS

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION NUMBER	DATE (D/M/Y)	PARTICULARS

(CONTINUED)

REGISTRATION NUMBER	DATE (D/M/Y)	PARTICULARS
3532SK	13/05/1971	UTILITY RIGHT OF WAY GRANTEE - ATCO GAS AND PIPELINES LTD.. 10035-105 ST EDMONTON ALBERTA T5J2V6 "PORTION" (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 012029844)
752 091 204	23/07/1975	CAVEAT RE : DEFERRED RESERVE CAVEATOR - EDMONTON REGIONAL PLANNING COMMISSION.
902 220 780	25/07/1990	MORTGAGE MORTGAGEE - PROVINCE OF ALBERTA TREASURY BRANCHES. STONY PLAIN ALBERTA ORIGINAL PRINCIPAL AMOUNT: $49,200
922 063 153	11/03/1992	UTILITY RIGHT OF WAY GRANTEE - AGT LIMITED. AS TO PORTION OR PLAN:9220601
932 195 705	07/07/1993	UTILITY RIGHT OF WAY GRANTEE - ATCO GAS AND PIPELINES LTD.. 10035-105 ST EDMONTON ALBERTA T5J2V6 PART (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 012021846)
962 269 103	02/10/1996	UTILITY RIGHT OF WAY GRANTEE - ATCO GAS AND PIPELINES LTD.. 10035-105 ST EDMONTON ALBERTA T5J2V6 PART AS DESCRIBED (DATA UPDATED BY: TRANSFER OF UTILITY RIGHT OF WAY 012021925)
082 092 425	28/02/2008	MORTGAGE MORTGAGEE - ALBERTA TREASURY BRANCHES. 5014-50 ST STONY PLAIN ALBERTA T7Z1T2 ORIGINAL PRINCIPAL AMOUNT: $150,000

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION NUMBER	DATE (D/M/Y)	PARTICULARS
092 262 800	30/07/2009	CAVEAT RE : PURCHASERS INTEREST CAVEATOR - ST. MATTHEW EVANGELICAL LUTHERAN CHURCH OF STONY PLAIN, ALBERTA C/O BIRDSELL GRANT GARDNER 102, 5300-50 ST STONY PLAIN ALBERTA T7Z1T8 AGENT - ALASTAIR G M GRANT

TOTAL INSTRUMENTS: 008

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN ACCURATE REPRODUCTION OF THE CERTIFICATE OF TITLE REPRESENTED HEREIN THIS 29 DAY OF MARCH, 2010 AT 08:45 A.M.

ORDER NUMBER:16156967

CUSTOMER FILE NUMBER:

REGISTRAR OF LAND TITLES

END OF CERTIFICATE

TOWN OF STONY PLAIN

File No.: _____

RIGHT OF ENTRY AUTHORIZATION

Owner's consent to the Right of Entry by an authorized person from the Town of Stony Plain to enter upon the subject land for a site inspection relative to the proposed subdivision application.

Section 542 of the Municipal Government Act, 2000, stipulates that:

"An authorized person may enter land or a building if the owner or person in possession of it gives their consent to entry...and then only for the purpose of ensuring compliance with this Act, the regulations or land use bylaw.

"I Do" X or "Do Not" _____ grant consent for an authorized person from the Town of Stony Plain to enter upon the subject land for a site inspection.

Please complete this form and return it with your subdivision application.

NW-30-52-27-W4
Legal Description of the Land

Roland Christian & Bernice Lorriane Hennig
Full Name (in block capitals)

Box 2443

Stony Plain, Alberta

T7Z 1X8
Address

Bernice Lorraine Hennig
Roland C. Hennig

Date 08/01/09 Signature

Town of Stony Plain 4905 - 51 Avenue, Stony Plain, AB T7Z 1Y1
Phone: (780) 963-2151 Fax: (780) 963-0935 Email: r.sharp@stonyplain.com

TOWN OF STONY PLAIN

File No. _____

APPLICANT'S AUTHORIZATION

I (We), Rolland Christian & Bernice Lorraine Hennig, being the registered owners(s) of
(name of registered owner(s)

NW-30-52-27-W4
(legal description of property)

do hereby authorize Norcan Consulting Group Inc. to make
(name of Agent/Company)

application for subdivision affecting the above note property.

Roland C. Hennig
Signature

Box 2443
Stony Plain, Alberta
T7Z 1X8
Address

Bernice Lorraine Hennig
Signature

Address (if different from above)

Date

Please Note: This authorization pertains only to the above noted subdivision application to which it is attached.

Town of Stony Plain 4905 - 51 Avenue, Stony Plain, AB T7Z 1Y1
Phone: (780) 963-2151 Fax: (780) 963-0935 Email: r.sharp@stonyplain.com

Stormwater Report

Altime Engineering Ltd.
#223, 86 McKenney Avenue
St. Albert, Alberta
T8N 2T7

March 03, 2010
File: NC-155-01

Norcan Consulting Group Inc.
Box 38
Site 219, RR2
Carvel, Alberta
T0E 0H0

Attention: Mr. Frank Florkewich

Dear Sir:

Re: Proposed Development Servicing for St Matthew School
Town of Stony Plain

Stormwater Management

The proposed development is located at NW30-52-27-W4, Town of Stony Plain. Fairway Dr borders the subject land to the north, Golf Course Rd to the west, cultivated land makes up the east and south boundaries. A major ridge running from southwest to northeast divides the site into two drainage basins. Lands east of the ridgeline drain to the lowland onsite in the north portion and the south portion to the lowland in the SW30-52-27-W4, which discharges directly to Atim Creek. A stormwater management facility is planned for the lands west of the ridgeline where the proposed school site will be located as shown on the plan. Detailed engineering analysis will determine the appropriate design components and function of the facility. The stormwater management facility will discharge at a pre-development flow rate of 2.5 L/s/ha defined for the area to the road ditch, which will merges with existing drainage course on the northwest corner of the quarter section.

Sanitary Sewer System

The sewage from the subject site will be collected and transported by gravity sewer system to the Southeast Stony Plain Trunk Main west of the subject land which follows along the alignment of the existing stream course.

Water supply and distribution system

One watermain of 300mm is located adjacent to the north boundary of the site and will provide source for the water distribution system of this development.

If you have any questions, please contact me.

Sincerely,

L.J. Ren

L.J. Ren, M.Eng, P. Eng.
Altime Engineering Ltd.
#223-86 McKenney Avenue
St. Albert, Alberta, T8N 2T7
Ph: 780 458 0013, Fax: 780 459 1316

Geotechnical Report

GEOTECHNICAL INVESTIGATION

PROJECT NAME
St. Matthew Lutheran School

PROJECT ADDRESS
NW 30-52-27-W4M
Stony Plain, Alberta

PREPARED FOR
St. Matthew School Development Committee

PREPARED BY
A. D. Williams Engineering Inc.

DATE PREPARED
May 2008

ADWE File No. ES-15681.00

A. D. Williams
Engineering Inc.
Consulting Engineers

The A. D. Williams Building
10010 - 100 Street
Edmonton, AB T5J 0N3

Phone 780.424.2393
Fax 780.425.1520

Edmonton
Yellowknife
Calgary
Winnipeg
Red Deer

GEOTECHNICAL INVESTIGATION

PROJECT NAME
St. Matthew Lutheran School

PROJECT ADDRESS
NW 30-52-27-W4M
Stony Plain, Alberta

PREPARED FOR
St. Matthew School Development Committee

DATE PREPARED
May 2008

ADWE File No. ES-15681.00

Prepared by,

A. D. WILLIAMS ENGINEERING INC.

Amie Chaotakoongite, E.I T.
Geotechnical Engineer, Earth Sciences

Direct: 780.409.3103
Email: achaotak@adwilliams.com

Reviewed by,

Ramon Facundo, P.Eng
Division Manager, Earth Sciences

Direct: 780.409.3150
Email: rfacundo@adwilliams.com

AKC/RF/mh

PERMIT TO PRACTICE
A. D. WILLIAMS ENGINEERING INC.

Signature _____

Date _____

PERMIT NUMBER: P6394

The Association of Professional Engineers, Geologists and Geophysicists of Alberta

A. D. Williams
Engineering Inc.
Consulting Engineers

TABLE OF CONTENTS

Page

APPENDICES

1.0 INTRODUCTION

A. D. Williams Engineering Inc. was retained to conduct a geotechnical investigation for the proposed St. Matthew Lutheran School located in Stony Plain, Alberta. The purpose of the geotechnical investigation is to determine the subsurface soil and groundwater conditions and facilitate design and construction of the proposed structures.

This report provides the results of our geotechnical investigation and recommendations and construction guidelines for the proposed educational facility. The authorization to proceed was given by Shaun Visser of the St. Matthew School Development Committee on April 8, 2008.

2.0 PROJECT DESCRIPTION

The subject site is located in the Town of Stony Plain and the legal land description is NW Section 30, Township 52, Range Road 27, west of the 4th Meridian. The site, covering approximately 25 acres, was used for agricultural purposes at the time of the visit.

The site is bordered by Fairway Drive to the north and Range Road 280 to the west. The location of the study is shown in Appendix A.

3.0 PROJECT WORK METHODOLOGY

3.1 FIELDWORK

The drilling program was conducted on April 28 and 29, 2008. A total of seven boreholes were drilled at the site. One borehole was abandoned due to a breakdown with the rig caused by adverse weather conditions. The locations of the boreholes are shown in Appendix A.

The boreholes were advanced using a B-51 truck-mounted solid stem auger rig, owned and operated by a local company based in St. Albert, Alberta. Representative soil samples from each borehole were collected, examined, and classified in the field, and then taken to our laboratory for detailed examination and classification testing.

Disturbed soil samples were recovered from all boreholes, generally at 1.5 m intervals, using a split spoon sampler in conjunction with the Standard Penetration Test procedures. Disturbed grab samples were also obtained from the auger cuttings at 0.8 m intervals for moisture content analysis.

3.2 LABORATORY PROGRAMS

A laboratory testing program was conducted to determine the water content and Atterberg Limits of selected soil samples. The results of these tests are shown on the borehole logs in Appendix B. The water-soluble sulphate concentration of selected soil samples was determined in order to verify the type of concrete that may be used.

4.0 SITE CONDITION

4.1 SURFACE FEATURES

At the time of inspection, the subject site was undisturbed and used as farmland. The subject site, located east of Stony Plain, has rolling topography with relatively flat areas in the northwest portion of the 10 acre section. Further south of the site there is a densely treed area, covering approximately 6 acres. Surface drainage flows towards this area.

The property is bound by Range Road 280 to the west, Fairway Drive and a golf course to the north, and a residential subdivision to the northeast.

4.2 SUBSURFACE CONDITION

4.2.1 Soil

A detailed description of the subsurface soil conditions encountered at the subject site is presented on the individual borehole logs in Appendix B. A general description of the soil materials encountered is summarized in the following paragraphs, as well as in Table I shown below.

4.0 SITE CONDITION

4.1 SURFACE FEATURES

At the time of inspection, the subject site was undisturbed and used as farmland. The subject site, located east of Stony Plain, has rolling topography with relatively flat areas in the northwest portion of the 10 acre section. Further south of the site there is a densely treed area, covering approximately 6 acres. Surface drainage flows towards this area.

The property is bound by Range Road 280 to the west, Fairway Drive and a golf course to the north, and a residential subdivision to the northeast.

4.2 SUBSURFACE CONDITION

4.2.1 Soil

A detailed description of the subsurface soil conditions encountered at the subject site is presented on the individual borehole logs in Appendix B. A general description of the soil materials encountered is summarized in the following paragraphs, as well as in Table I shown below.

TABLE I: GENERAL SOIL STRATIGRAPHY

FOR BOREHOLES 1, 2, 3, 4, AND 5:

Soil Type	Soil Description	Approximate Depth to Top of Stratum (m)	Approximate Thickness (m)
Topsoil	Organics, roots, moist, black	-----	0.6 – 0.8
Silt	Some fine sand, moist, greyish brown	0.6 – 0.8	0.1 – 3.0
Sand	Fine to medium grain, trace of coal, trace of silt, moist, brown	0.7 – 3.8	0.4 – 0.9
Silty Clay	Silty, moist, trace of sand, firm to stiff, greyish brown	1.1 – 4.7	0.5 - 5.7
Silt	Clayey, moist, grey	5.2 - 6.8	1.1 – 2.9
Clayey Silt	Some fine sand, wet, grey	6.4 - 7.9	0.8 – 3.0
Sand [1]	Fine, silty, moist, firm to stiff, greyish brown	8.1	0.4
Silt [2]	Sandy, fine, moist, stiff, greyish brown	8.5 – 9.4	1.6 – 3.1
Sand [3]	Trace of silt, saturated, greyish brown	8.7 – 12.5	3.5 – 4.8
Silty Clay [4]	Silty, wet, grey	12.8	3.2
Silt [5]	Some fine sand, wet, saturated, grey	8.4	6.5

Legend:
[1] Encountered at location of Borehole No. 5 only.
[2] Encountered at locations of Boreholes No. 4 and 5.
[3] Encountered at locations of Boreholes No. 1, 3, 4, and 5.
[4] Encountered at locations of Boreholes No. 1 and 3.
[5] Encountered at location of Borehole No. 2 only.

FOR BOREHOLES 6 AND 7:

Soil Type	Soil Description	Approximate Depth to Top of Stratum (m)	Approximate Thickness (m)
Topsoil	Organics, roots, moist, black	-----	0.6
Sand	Trace of coal, trace of silt, moist, brown	0.6	0.7
Silty Clay	Silty, moist, trace of sand, firm medium plastic, greyish brown	1.3	2.5
Sand	Fine, silty, moist, firm to stiff, greyish brown	3.8	1.4
Silty Clay	Silty, moist, trace of sand, firm medium plastic, greyish brown	5.2	4.5
Sand	Medium grain, saturated, grey	9.7	1.3
Silt	Sandy, fine, moist, stiff, greyish brown	11.0	2.1
Sand	Trace of silt, saturated, greyish brown	13.1	1.8

At the time of drilling, the 15 acre section was accessible and supported the drilling rig. However, due to unfavourable weather conditions and soft, wet surface soil conditions, the drilling rig was limited to cover the majority of the 10 acre section area. Consequently, two deep boreholes were completed on the 10 acre area.

The soil stratigraphy and parameters encountered were fairly uniform in all of the boreholes. The variation in the soil classification, strength, moisture content, and other parameters was minimal between the boreholes. It was therefore decided that further drilling was unnecessary.

A surface layer of organic topsoil was encountered in all of the boreholes, ranging from approximately 0.6 m to 0.8 m in thickness. Beneath the topsoil materials, thick layers of brown silt, silty clay, clay, and sand were encountered in the boreholes.

Boreholes 2, 5, 6, and 7 were terminated in a sand formation at a depth of approximately 14.9 m below the surface; all other boreholes were terminated at a depth of 16.0 m below the surface. Two standpipe piezometers were installed in Boreholes 1 and 3, subsequent to sampling. The general soil stratum is an intermittent layering of sand and silt, with layers ranging from 0.1 m to 6.5 m in thickness. The layers become saturated at approximately 9.0 m below the existing ground elevation. A very silty clay layer was encountered in the majority of the boreholes. The thickness of the clay layers ranges from 0.5 m to 5.7 m. There were no clay till layers encountered in any of the boreholes.

The water content ranges determined for each soil classification, along with the subsequent mean water content value, are as follows:

- Silt: 17.0% to 40.0%, mean = 31.0%
- Sand: 3.0% to 36.0%, mean = 26.0%
- Clay: 27.0% to 41.0%, mean = 35.0%
- Silty clay: 26.0% to 33.0%, mean = 29.0%

Atterberg limit tests determined for the clay layer from Borehole 1 at a depth of 2.3 m indicated a liquid limit of 54.5% and a plastic index of 31.0%. These test results indicate that the clay is medium plastic.

The Standard Penetration Tests (SPT) conducted in the silt layer yielded N-values between 6 and 15, with a mean of 10 blows per 300 mm of penetration of the sampler, suggesting firm soil consistency. The N-values for sand materials yielded between 9 and 16, and for silty clay layers yielded between 8 and 17, both with a mean of 12, suggesting a compact soil. Finally, SPT conducted in the clayey silt layer yielded N-values between 8 and 11, with a mean of 10, suggesting firm soil consistency. The deep boreholes were terminated in the sand or silt deposit.

4.2.2 Groundwater

During fieldwork, sloughing and seepage conditions were encountered at completion of the majority of the boreholes. Standpipes were installed and groundwater readings were taken following drilling. Groundwater readings are summarized in Table II below.

TABLE II: GROUNDWATER MEASUREMENTS

Borehole No.	Depth Below Grade (m)	
	After completion	May 13, 2008
BH-1	3.3 m of sloughed materials	4.7
BH-3	3.4 m of sloughed materials	6.7

The depth to the groundwater may vary seasonally and the measurements made during the investigation may not represent those at the time of construction. Groundwater levels across the site are expected to be highest during periods of snowmelt, or during heavy or prolonged precipitation. Water stored in the sand deposit may be large in volume after periods of heavy precipitation; however, it is expected to decrease during dry spells.

5.0 EVALUATIONS AND RECOMMENDATIONS

5.1 GENERAL DEVELOPMENT GUIDELINES LIMITATIONS

The subsurface conditions at the site are favourable for the proposed development. It is recommended that all topsoil and any organic materials found during construction be removed from within the footprint of the buildings, parking area, and access roadways. The excavated topsoil should not be reused in any area carrying a structural load. It may be used for landscaping purposes if the material meets the specifications of the landscape architect/designer.

5.2 FOUNDATIONS

5.2.1 Skin Friction Piles

Cast-in-place skin friction piles for this project may be designed using the following design parameters:

TABLE III: CAST-IN-PLACE CONCRETE SKIN FRICTION PILE DESIGN PARAMETERS

Depth Below Existing Grade (m)	Allowable Skin Friction Resistance (kPa)
0 - 1	0
1 - 4	8
4 - 10	12
10 and below	15

For straight shaft friction piles, the end-bearing contribution of the pile bases should be neglected in design calculations. Due to soil desiccation effects for heated structures, the shaft friction should be neglected for either the upper 1.5 m of the pile length or the length embedded in fill, whichever is greater. For unheated structures, the shaft friction should be neglected, due to frost effects, for either the upper 2.5 m from the final exterior grade or length embedded in the fill, whichever is greater.

All straight shaft piles should have a minimum diameter of 400 mm. All straight shaft piles subjected to uplift loads, including frost, should have a minimum length of 6.0 m, and should be reinforced over their entire length. Groundwater and sloughing conditions may present some problems or incur an extra cost during installation; therefore, provisions for groundwater control, such as casings, may be required.

5.2.2 Driven Steel Piles

Driven steel piles such as steel H-piles or compacted concrete piles (Compacto or Franki type piles) are considered feasible for this development and may be more cost effective than cast-in-place concrete piles, due to difficulties that may result from groundwater and sloughing conditions. Driven piles reduce soil heave and ground vibrations and have high load capacities when driven to refusal. Agra Foundations Ltd. may be contacted for driven H-pile or Franki pile installation.

5.2.3 Helical (Screw) Piles

Screw piles have been used when construction of other foundation systems were precluded due to a high water table and may be considered as an alternative for this development due to similar conditions. Screw piles consist of a helically shaped bearing plate or multiple plates attached to a central shaft. For detailed design and installation of Helical screw piles, Roterra Screw Piling Limited of Edmonton may be contacted.

5.3 LATERAL EARTH PRESSURE

Basement walls should be designed to resist lateral earth pressures in an "at-rest" condition. This condition assumes a triangular pressure distribution and may be calculated using the following:

$$P_0 = K_0(\gamma_s H + q)$$

Where:

- P_0 - lateral pressure "at-rest" condition (no wall movement occurs at a given depth)
- K_0 - coefficient of earth pressure "at-rest" condition (use 0.5 for silt or clay backfill and 0.4 for sand and gravel backfill)
- γ_s - bulk unit weight of backfill soil (use 19 kN/m^3 for sand or fines, use 20 kN/m^3 for granular). Below the groundwater table use submerged unit weight of 9 kN/m^3 for sand, 10 kN/m^3 for silt, and 20 kN/m^3 for clay.
- H - depth below final grade (m)
- q - surcharge pressure at ground level (kPa)

The walls of the basement may also be subjected to hydrostatic pressure temporarily, during seasonal fluctuations of the groundwater table, unless a weeping tile system is installed. The hydrostatic pressure may be calculated using the following equation:

$$Pw = \gamma w\ hw$$

Where:

- P_w - hydrostatic pressure (kPa)
- γ_w - density of water, use 9.8 kN/m^3
- h_w - depth below top of water table (m)

5.4 CONCRETE SLABS

Concrete slabs should be underlain with a minimum of 150 mm layer of crushed gravel, with a maximum grain size of 20 mm and a maximum of 10% passing the 0.075 mm sieve. This layer should be compacted to 100% Standard Proctor Maximum Dry Density (SPMDD). Under all floor slabs, a layer of continuous or well-sealed/spliced polyurethane membrane should be installed below the concrete to mitigate any water migration through the concrete floor slab.

Any soft spots or unsuitable material should be excavated and replaced with well-compacted fill. Saw cuts or slip joints should be provided around the interior columns in order to allow the slab to float, should there be any swelling of the subgrade soil due to an increase in the moisture content. Steel rebar should be installed between walls and doorways or sidewalks to avoid faulting.

If possible, water lines should not be placed immediately beneath the concrete slabs. Wastewater lines beneath concrete slabs should be of rigid plastic with cemented joints. Wastewater lines beneath butt joints and flexible rubber connections should not be permitted.

Mechanical equipment placed on the slab-on-grade floor should be designed to permit some re-levelling, should the equipment be susceptible to small changes in level. Piping and electrical conduit connections should be laid out to permit some flexibility, as vertical movement of such equipment as water meters, furnaces, and electric equipment may cause distress in the piping. This provision is particularly important where there are shot pip runs between mechanical equipment and points where piping passes through walls or slabs.

5.5 PERMANENT SUB-DRAINAGE SYSTEM

It is recommended that a permanent sub-drainage system be considered in areas where concrete slab-on-grade is placed. The purpose of the permanent sub-drainage system is to intercept water that may percolate through the soil underneath the concrete slab-on-grade.

5.6 PAVEMENT

5.6.1 Asphalt Pavement Design

Field data suggests that the design of the pavement can be based on the following parameters:

- An estimated CBR of 4
- Light traffic load for general public parking areas
- A 20-year design life

Using the Asphalt Institute design method, the pavement thickness requirements are 190 mm and 225 mm full-depth asphalt concrete for light and heavy traffic load areas, respectively.

Asphalt concrete pavement structures can be constructed using an asphalt concrete surface and compacted granular base and subgrade. The recommended pavement design is given as follows:

Traffic	Pavement Thickness Design
Standard Pavement	75 mm asphalt concrete 150 mm crushed granular base (20 mm maximum aggregate size) 200 mm of 50 mm maximum aggregate size compacted sub-base course
Heavy Duty Pavement	100 mm asphalt concrete 150 mm soil cement or 200 mm of 20 mm crush 200 mm of 50 mm maximum aggregate size compacted sub-base course

The recommended levels of compaction for the granular materials should be 100% of SPMDD (ASTM D698). The asphalt concrete should be compacted to a minimum 96% of Marshall Density based on 50 blows laboratory Marshall tests.

It is imperative that a positive surface drainage of pavement be established to prevent the ponding of water. Recommended minimum grades of 1% should be used in paved areas, where possible. The surrounding landscaping should be designed so that run-off water is prevented from ponding beside buildings or pavement areas. Ingress of surface moisture can cause increased moisture contents that may result in swelling, softening, and premature failure of the paved surface.

5.6.2 Subgrade Preparation

The subgrade should be proof rolled, and any soft spots or unsuitable materials should be excavated to a minimum depth of 0.5 m and replaced with compacted soil fill. Care must be taken not to use frozen or other deleterious materials for backfill.

The subgrade soil should also be scarified to a minimum depth of 150 mm and compacted to at least 95% SPMDD. If soft subgrade is encountered, cement stabilization using Type 10 Portland cement may be applied to stabilize the subgrade surface. The typical cement quantity for subgrade stabilization is 10 kg/m^2 for a depth of 150 mm, compacted to 100% of SPMDD. The subgrade should not be permitted to desiccate and should have a moisture content slightly above the optimum at the time of construction.

For the pavement base course, the aggregate material should have a maximum grain size of 20 mm, with a maximum of 10% passing the 0.075 mm sieve, and be compacted to 100% SPMDD. The soil cement should have a similar gradation and should achieve a minimum seven-day compression strength of 3.0 MPa.

5.7 SITE GRADING AND DRAINAGE

The silt, silty sand, and sand encountered below the topsoil may be used for site grading and no undue construction difficulties are expected, provided the field moisture content of the material is maintained at slightly higher than the optimum. If a basement structure is constructed, clay should be used for site grading to reduce water ingress into the subgrade. For landscaped areas, only nominal compaction is required.

The finished grades should be adequate to direct surface water away from all buildings and structures. A 3.0 m corridor with a 10% positive grade is recommended from the basement wall, or grade beam structures. The prevention of water ingress into the subgrade will minimize future soil swelling.

5.8 UTILITY TRENCHING

Where underground utilities are to be installed, we expect that much of the excavation will be in the upper clay till and sand till. No major difficulties are foreseen in excavating these soils. A stable trench for the temporary utility installation can be achieved if the slope of the trench walls is no greater than 1H:1V. Shoring or bracing is required for vertical trenches to ensure the safety of the excavated areas.

Should there be some local seepage or surface runoff during construction, a sump pump should be sufficient to handle the water. Water should be discharged so as to not have an impact on the construction or the environment.

The backfill material for utility trenches should be the soil excavated from within, although sand or gravel may be substituted for the existing soils. The backfill should be placed in lifts not exceeding 300 mm compacted thickness, and compacted to at least 95% SPD. The top 300 mm of the backfill clay should be compacted to 100% SPD for roadway subgrade.

5.9 CONCRETE

Soil was analysed for water-soluble sulphate concentrations. The test results given in Appendix C indicate moderate sulphate content, suggesting Type MS (Type 20) or Type HS (Type 50) Portland cement should be used for all subsurface concrete. Air entrainment of 5% to 7% is recommended for use in all concrete exposed to freeze-thaw cycles to enhance durability. According to CSA A23.1-00, a minimum of a 32 MPa 56-day compressive strength should be used for concrete construction below the final grade.

5.10 SWELLING

The clay found in this region has a tendency to swell if it is permitted to desiccate prior to construction and then exposed to moisture after construction. The moisture content of the clay should be maintained at slightly higher than its optimum during earthwork construction.

6.0 CLOSURE

This report has been prepared in accordance with generally accepted geotechnical practices.

Classification and identification of soil, geological units, contaminant materials, and contaminant quantities have been based on commonly accepted practices in environmental and geotechnical engineering in this area. Some conditions are subject to change over time, and those making use of the report should be aware of this possibility, and understand that the report only presents the conditions at the sampled points at the time of sampling.

Recommendations presented herein are based on an environmental evaluation of the findings in this investigation. The conditions encountered during the fieldwork are considered to be reasonably representative of the site. If, however, conditions other than those reported are noted during any subsequent phase, A. D. Williams Engineering Inc. should be notified, and given the opportunity to review our recommendations in light of the new findings.

6.1 GENERAL LIMITATIONS

This report has been prepared for, and is intended for the use of the St. Matthew School Development Committee. The contents of this report may not be reproduced in whole or in part, or used or relied upon in whole or in part by any other party not identified herein, for any purpose whatsoever, without the expressed written consent of A. D. Williams Engineering Inc.

Any use that a third party not identified herein makes of this report, or any reliance on or decision made based on it, is the sole responsibility of such third party. A. D. Williams Engineering Inc. accepts no responsibility for any damages of any kind or nature whatsoever suffered by any third party resulting from decisions made or actions based upon this report.

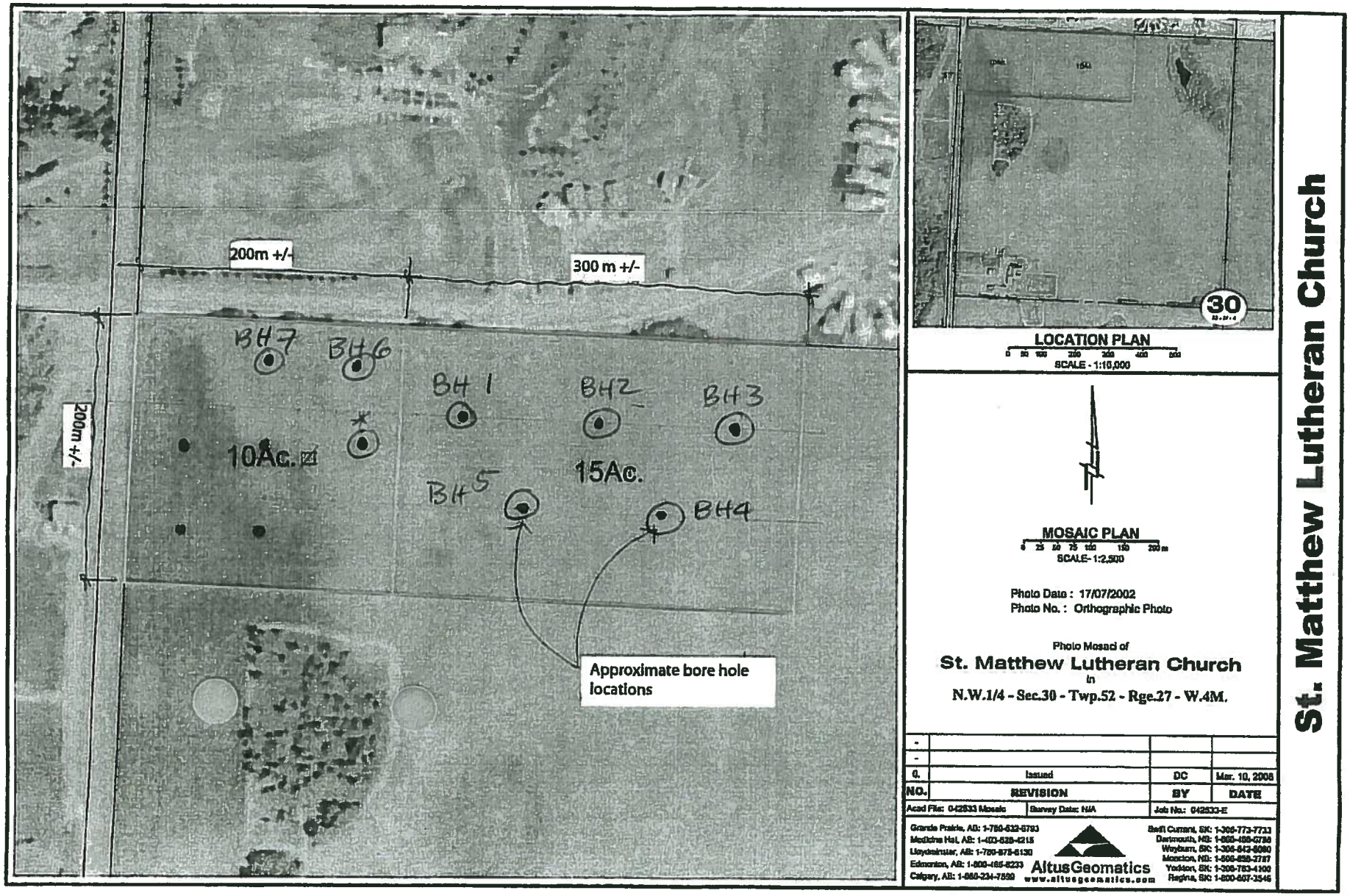
Professional judgment was exercised in gathering and analysing the information obtained, and in the formulation of the conclusions. A. D. Williams Engineering Inc. relied in good faith upon information provided by others, and cannot accept responsibility for any deficiency, misstatement, or inaccuracy contained in this report as a result of omission, misinterpretation, or fraudulent acts.

The description of the physical condition is based on those existing at the time of the site visit; it should not be relied upon to represent conditions on other dates. No assurance is made regarding changes in conditions subsequent to the time of the investigation. It is possible that information may become available or conditions may become known which have not been explored within the scope of this assessment. Should such an event occur, A. D. Williams Engineering Inc. should be retained to re-evaluate the conclusions presented in this report, and to provide amendments as required.

A. D. Williams Engineering Inc. has conducted the services reported herein in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality, and under similar conditions as this project. No other representation, expressed or implied, is included or intended in this document.

APPENDIX A

SITE PLAN AND BOREHOLE LOCATIONS



* SHALLOW BH DUE TO GETTING STUCK AND BREAK DOWN OF RIG.

⊙ COMPLETED DEEP BOREHOLES

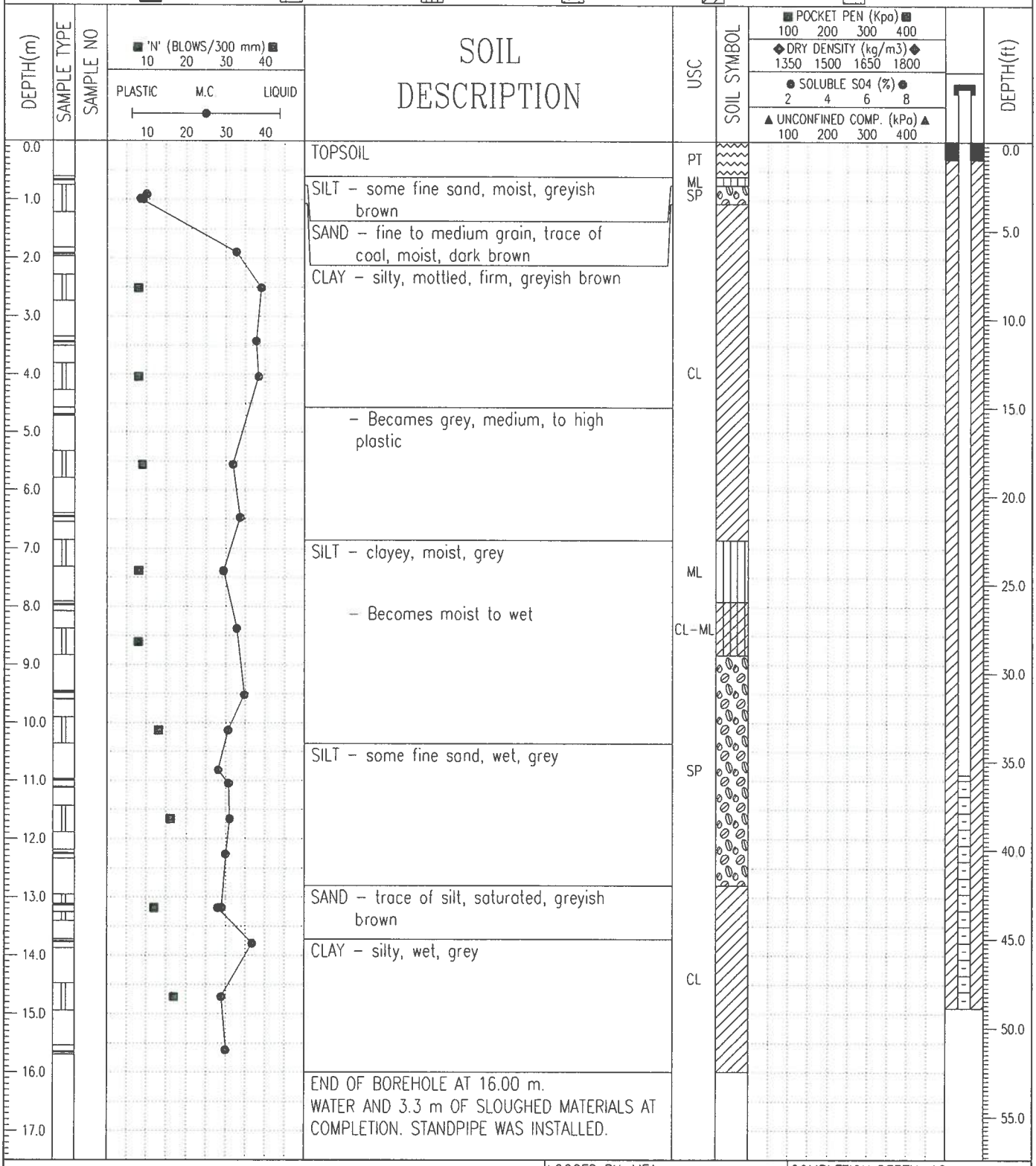
APPENDIX B

BOREHOLE LOGS

GEOTECHNICAL INVESTIGATION	Geological Drilling Ltd	BOREHOLE NO: BH-1
Geotechnicol Investigation	Truck-mounted Drill Rig	PROJECT NO: i15681.00
St. Mattew Lutheran School	Solid Stem Flight Auger	ELEVATION:

SAMPLE TYPE: CORE | A CASING | NO RECOVERY | DISTURBED | SPT | SHELBY TUBE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND



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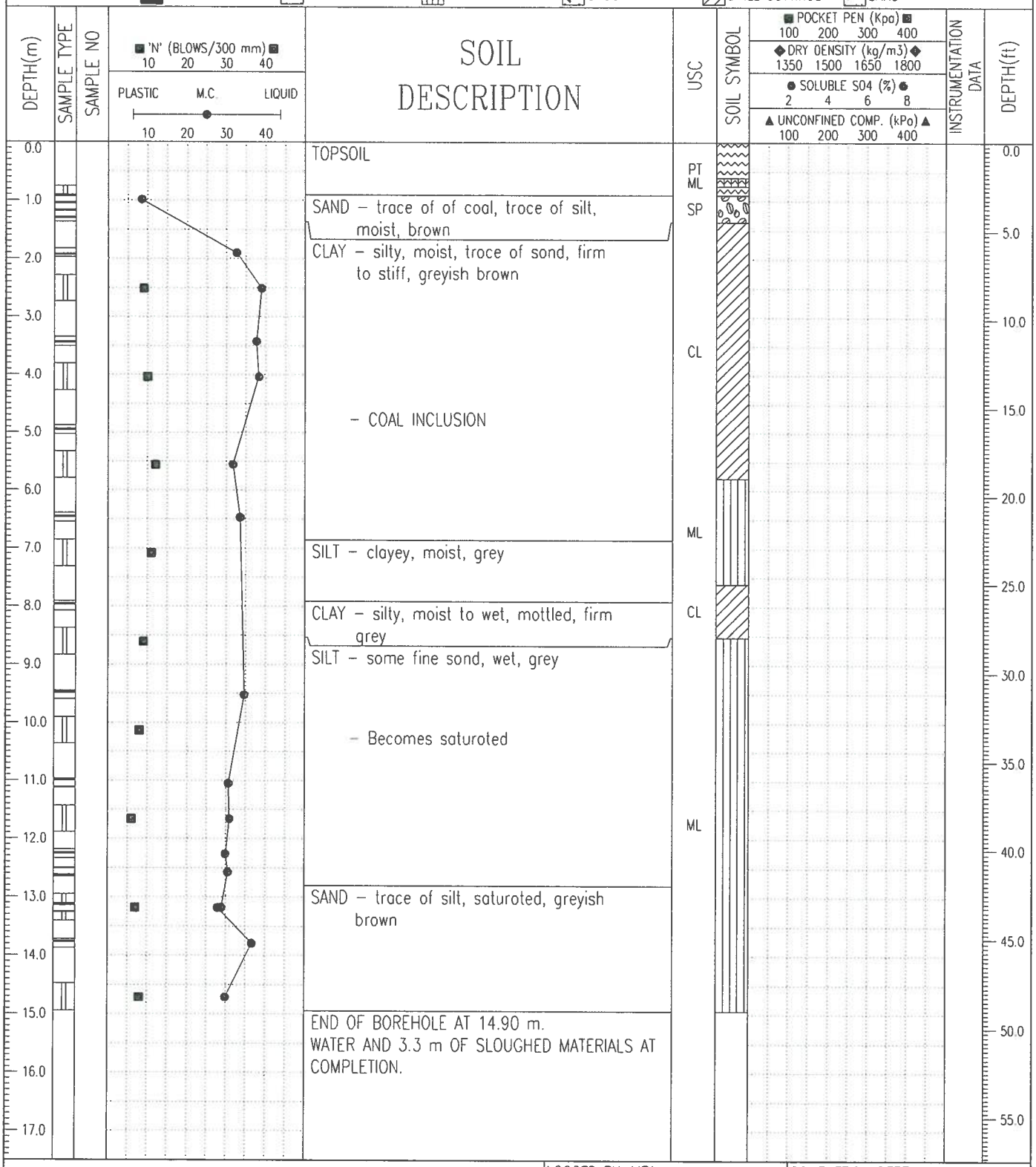
Edmonton, Alberta	REVIEWED BY: RF	COMPLETE: 28/04/08
	Fig. No: A-1	Page 1 of 1

08/05/16 12:53PM (GEO1)

GEOTECHNICAL INVESTIGATION	Geologicol Drilling Ltd	BOREHOLE NO: BH-2
Geotechnical Investigation	Truck-mounted Drill Rig	PROJECT NO: i15681.00
St. Mattew Lutheran School	Solid Stem Flight Auger	ELEVATION:

SAMPLE TYPE: CORE | A CASING | NO RECOVERY | DISTURBED | SPT | SHELBY TUBE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND



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	REVIEWED BY: RF	COMPLETE: 28/04/08
	Fig. No: A-2	Page 1 of 1

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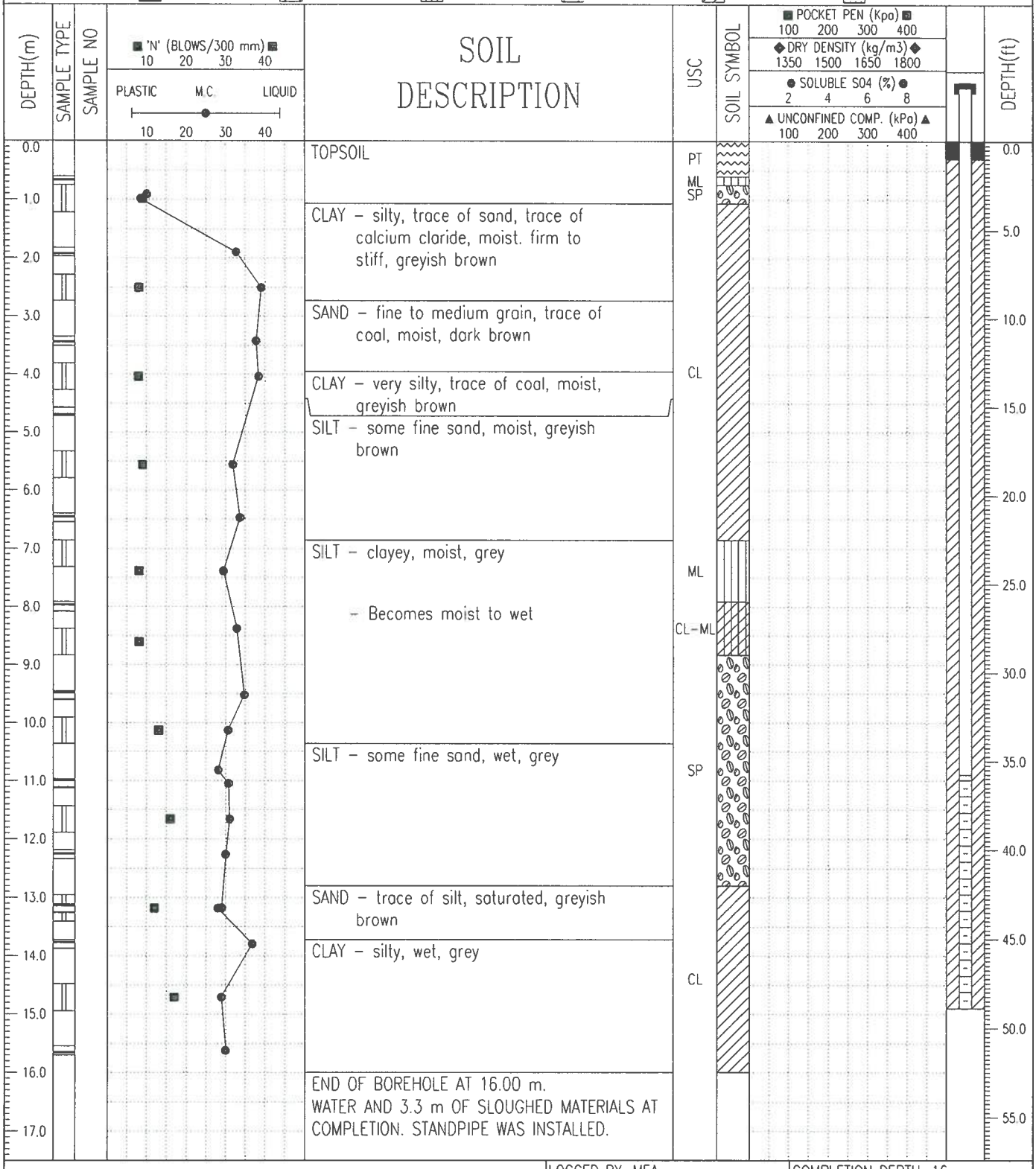
GEOTECHNICAL INVESTIGATION	Geological Drilling Ltd	BOREHOLE NO: BH-3
Geotechnical Investigation	Truck-mounted Drill Rig	PROJECT NO: i15681.00
St. Mattew Lutheran School	Solid Stem Flight Auger	ELEVATION:

SAMPLE TYPE: CORE | A CASING | NO RECOVERY | DISTURBED | SPT | SHELBY TUBE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND



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Edmonton, Alberta	REVIEWED BY: RF	COMPLETE: 28/04/08
	Fig. No: A-3	Page 1 of 1

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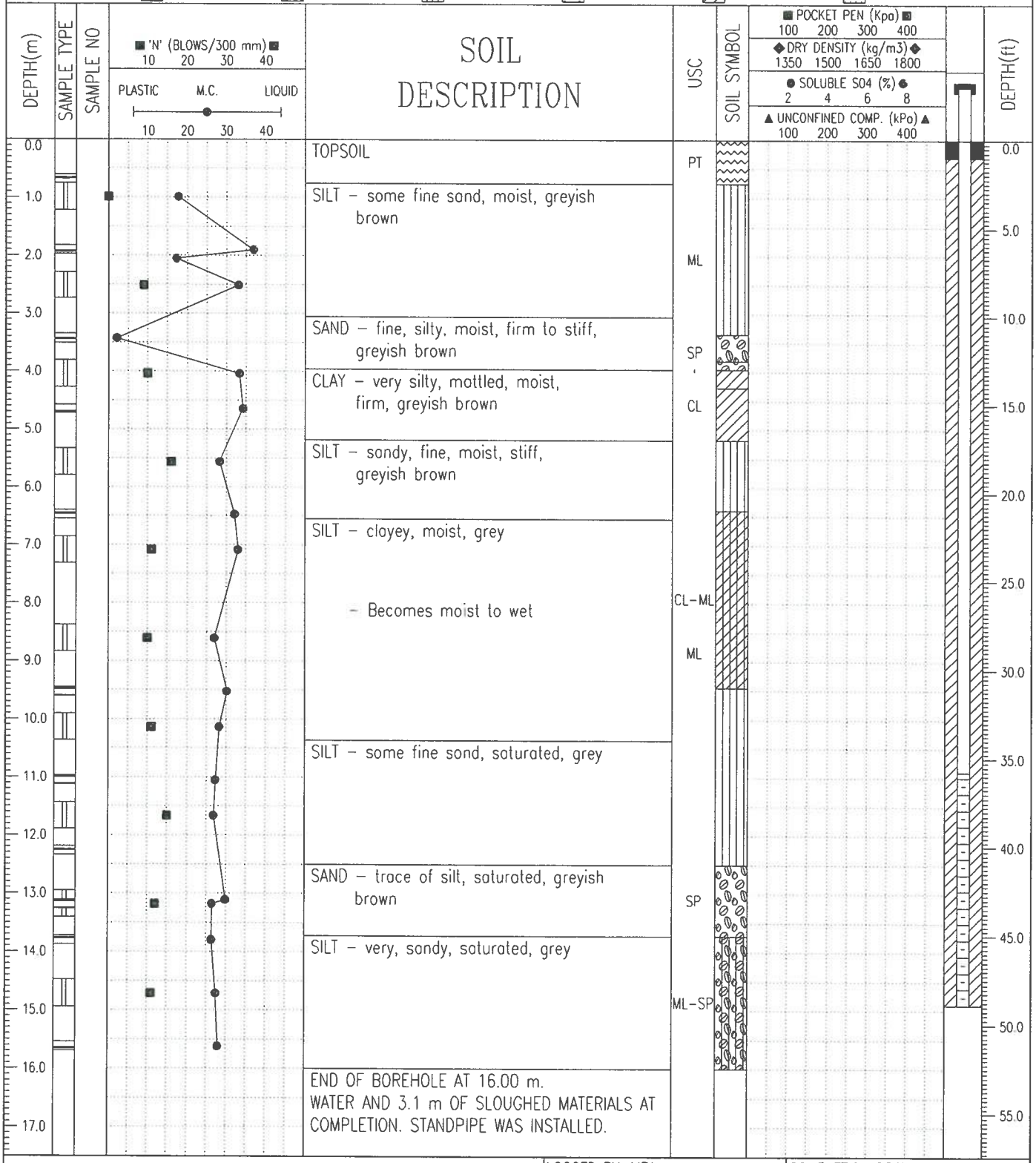
GEOTECHNICAL INVESTIGATION	Geological Drilling Ltd	BOREHOLE NO: BH-4
Geotechnical Investigation	Truck-mounted Drill Rig	PROJECT NO: i15681.00
St. Mottew Lutheran School	Solid Stem Flight Auger	ELEVATION:

SAMPLE TYPE: CORE | A CASING | NO RECOVERY | DISTURBED | SPT | SHELBY TUBE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND



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	REVIEWED BY: RF	COMPLETE: 28/04/08
	Fig. No: A-4	Page 1 of 1

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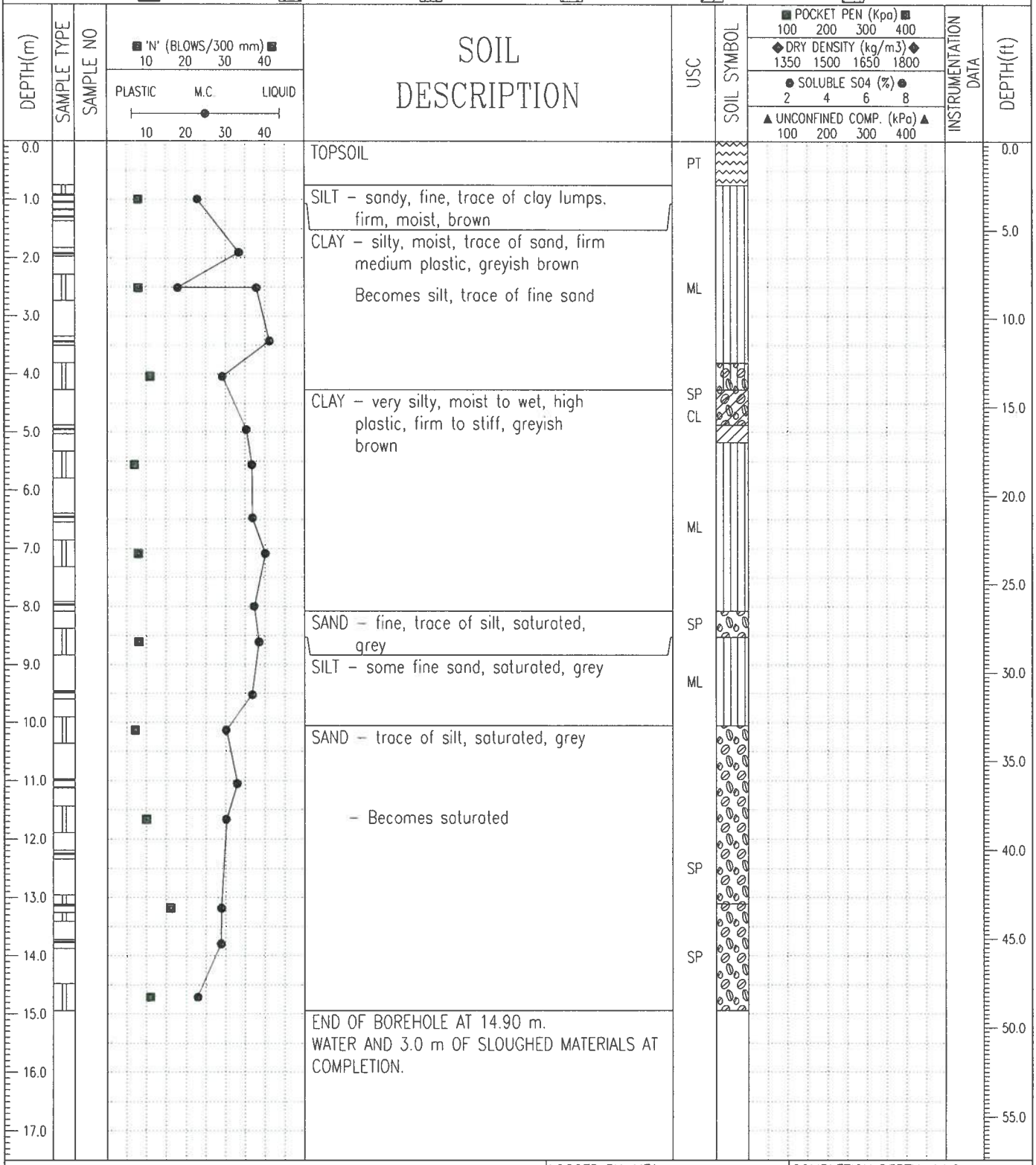
GEOTECHNICAL INVESTIGATION	Geological Drilling Ltd	BOREHOLE NO: BH-5
Geotechnical Investigation	Truck-mounted Drill Rig	PROJECT NO: i15681.00
St. Mattew Lutheran School	Solid Stem Flight Auger	ELEVATION:

SAMPLE TYPE: CORE | A CASING | NO RECOVERY | DISTURBED | SPT | SHELBY TUBE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND



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	REVIEWED BY: RF	COMPLETE: 28/04/08
	Fig. No: A-5	Page 1 of 1

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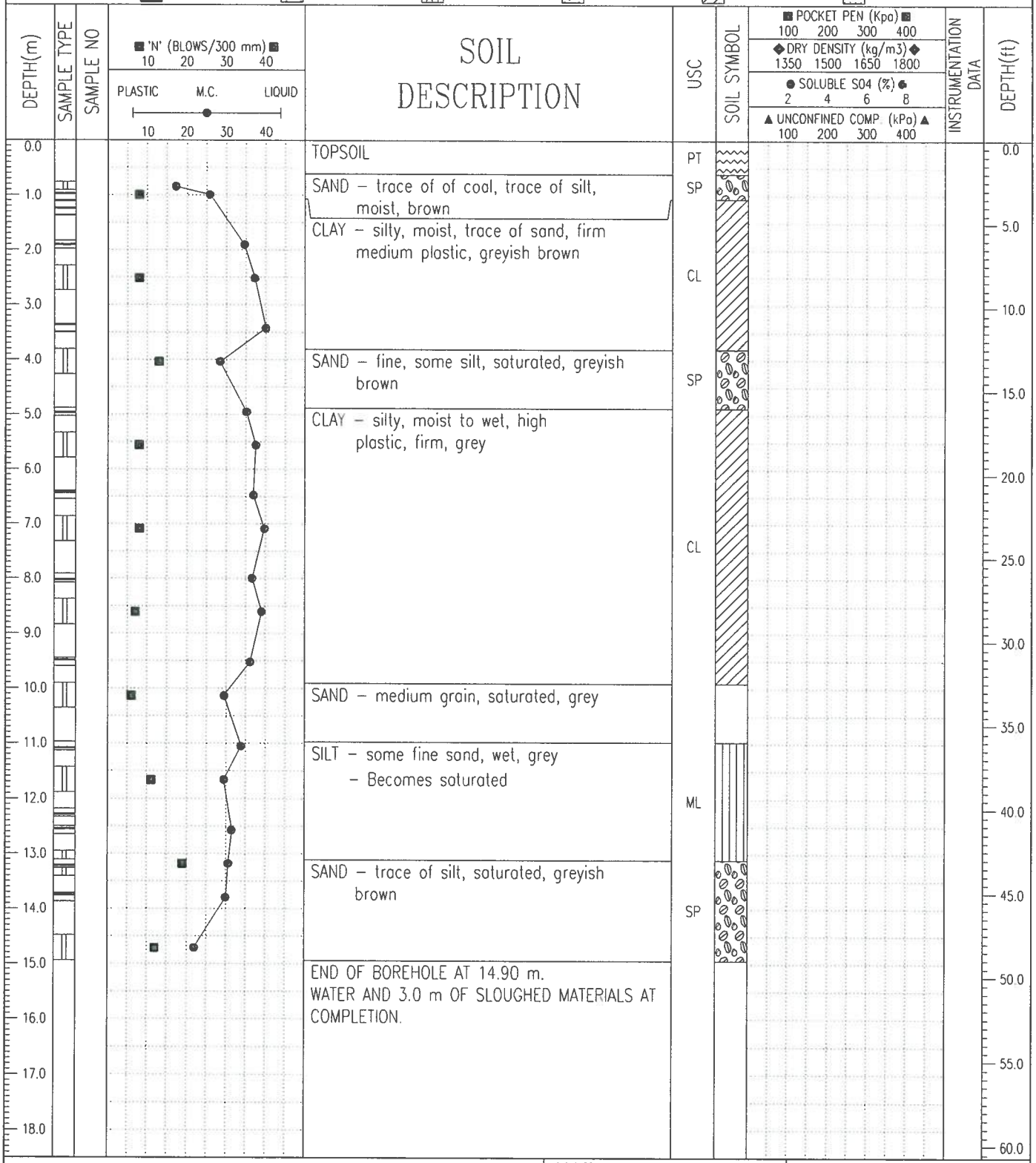
GEOTECHNICAL INVESTIGATION	Geological Drilling Ltd	BOREHOLE NO: BH-6
Geotechnical Investigation	Truck-mounted Drill Rig	PROJECT NO: i15681.00
St. Mattew Lutheran School	Solid Stem Flight Auger	ELEVATION:

SAMPLE TYPE: CORE | A CASING | NO RECOVERY | DISTURBED | SPT | SHELBY TUBE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND



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Edmonton, Alberta	REVIEWED BY: RF
	Fig. No: A-6
COMPLETION DEPTH: 14.9 m	
COMPLETE: 28/04/08	
Page 1 of 1	

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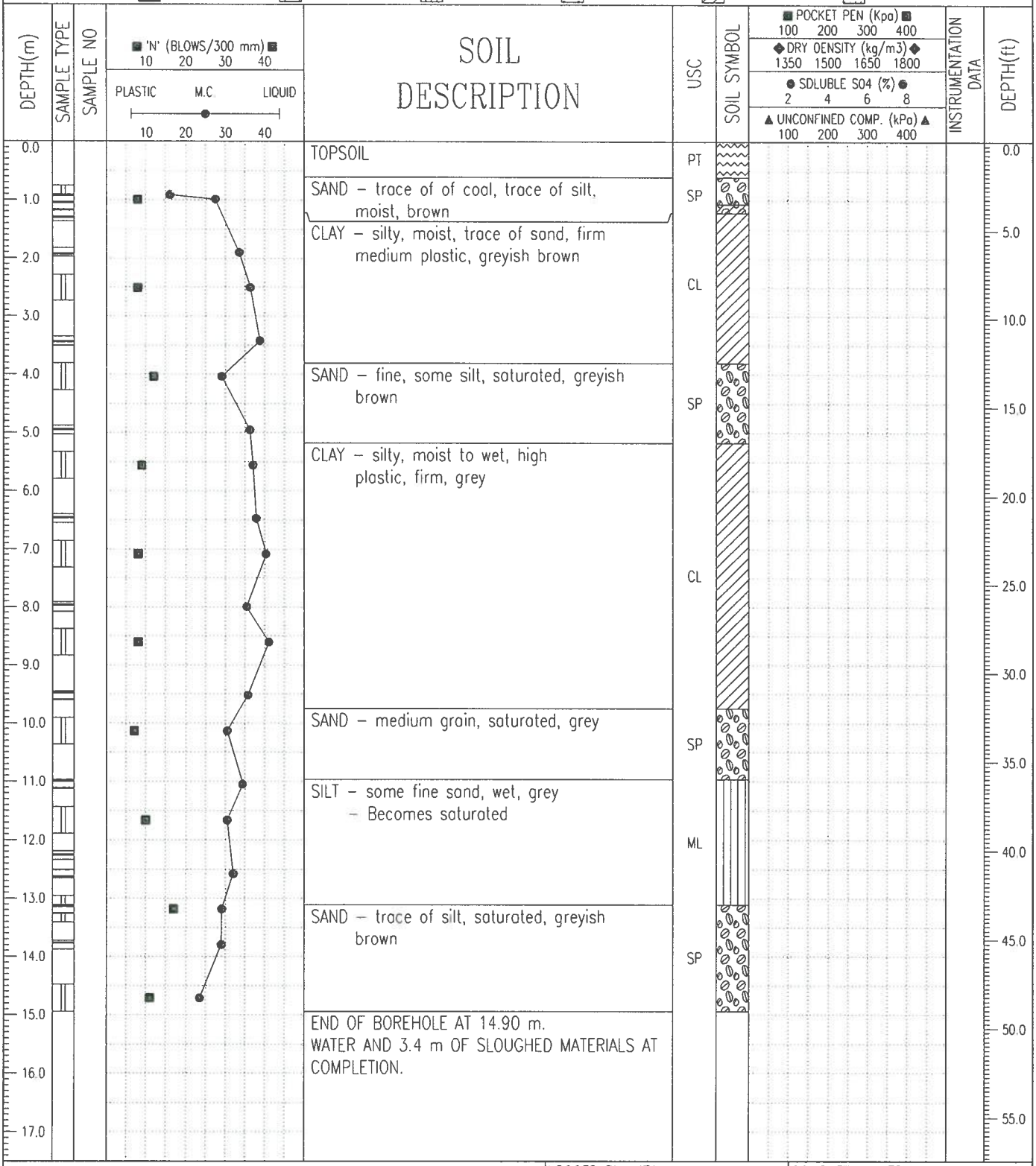
GEOTECHNICAL INVESTIGATION	Geological Drilling Ltd	BOREHOLE NO: BH-7
Geotechnical Investigation	Truck-mounted Drill Rig	PROJECT NO: i15681.00
St. Mattew Lutheran School	Solid Stem Flight Auger	ELEVATION:

SAMPLE TYPE: CORE | A CASING | NO RECOVERY | DISTURBED | SPT | SHELBY TUBE

BACKFILL TYPE: BENTONITE | PEA GRAVEL | SLOUGH | GROUT | DRILL CUTTINGS | SAND



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	REVIEWED BY: RF	COMPLETE: 28/04/08
	Fig. No: A-7	Page 1 of 1

08/05/16 12:49PM (GEO1)

APPENDIX C

LABORATORY TEST RESULTS

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

PRELIMINARY RESULTS

A D WILLIAMS ENGINEERING INC.
ATTN: MAJED ABDALLAH
10010 100 ST
EDMONTON AB T5J 0N3

Reported On: 23-MAY-08 11:50 AM

Lab Work Order #: L628629 **Date Received:** 13-MAY-08

Project P.O. #:
Job Reference: 15681
Legal Site Desc:
CofC Numbers:
Other Information:

Comments:

CHARLES LEBLANC
General Manager, Edmonton

For any questions about this report please contact your Account Manager:

MARTA PIETUCHA

ALS Canada Ltd. (formerly ETL Chemspec Analytical Ltd.)
Part of the **ALS Laboratory Group**
9936-67 Avenue, Edmonton, AB T6E 0P5
Phone: +1 780 413 5227 Fax: +1 780 437 2311 www.alsglobal.com
A Campbell Brothers Limited Company

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	By	Batch
L628629-1	15681 BH#1								
Sampled By:	NOT PROVIDED on 13-MAY-08 @ 09:30								
Matrix:	SOIL								
	Sulphate (SO4)	900		100	mg/kg		22-MAY-08	JWU	R669835

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Preparation Method Reference(Based On)	Analytical Method Reference(Based On)
SO4-ED	Soil	Sulfate (SO4)		APHA 4110 B-Ion Chromatography

** Laboratory Methods employed follow in-house procedures, which are generally based on nationally or internationally accepted methodologies.

Chain of Custody numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
ED	ALS LABORATORY GROUP - EDMONTON, ALBERTA, CANADA		

GLOSSARY OF REPORT TERMS
Surr - A surrogate is an organic compound that is similar to the target analyte(s) in chemical composition and behavior but not normally detected in environmental samples. Prior to sample processing, samples are fortified with one or more surrogate compounds. The reported surrogate recovery value provides a measure of method efficiency. The Laboratory control limits are determined under column heading D.L.
mg/kg (units) - unit of concentration based on mass, parts per million.
mg/L (units) - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
UNLESS OTHERWISE STATED, SAMPLES ARE NOT CORRECTED FOR CLIENT FIELD BLANKS.
Although test results are generated under strict QA/QC protocols, any unsigned test reports, faxes, or emails are considered preliminary.

ALS Laboratory Group has an extensive QA/QC program where all analytical data reported is analyzed using approved referenced procedures followed by checks and reviews by senior managers and quality assurance personnel. However, since the results are obtained from chemical measurements and thus cannot be guaranteed, ALS Laboratory Group assumes no liability for the use or interpretation of the results.