

Brandt Tractor Properties Ltd.

Comprehensive Development Review

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Revision Log

Revision #	Revised By	Date	Issue / Revision Description
1	Colleen Yates	December 12, 2011	Clarification on storm water detail and additional building detail

AECOM Signatures

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1. Background

1.1 Introduction

1.1.1 Purpose

This Comprehensive Development Review (CDR) report provides the supporting documentation for a proposed two-parcel, light industrial development in the R.M. of Corman Park (RM), and is submitted in accordance with the RM's procedural requirements. It provides a compilation of information relevant to the subdivision and development of a light industrial subdivision on SW 20-37-6-W3 Ext. 66 (property) as it pertains to social, environmental, health and economic issues. In addition this CDR outlines the design rationale and development objectives to ensure a high quality development.

AECOM was retained by Brandt Tractor Properties Ltd. (Brandt) to provide planning, design and engineering assistance for this development. This CDR has been prepared jointly by AECOM staff and Carmen Lien, Land Development Manager for Brandt. RM planning staff have been consulted throughout the process.

1.1.2 Proposed Land Use

The subject property, which comprises 51.45 acres (20.82 ha), is located between Highway 16 Beam Road and 60th Street W. It is located within the Saskatoon – Corman Park Planning District. Brandt is seeking approval to subdivide the property and to establish an Automotive, Equipment and Vehicle Service on Parcel B, to allow for the relocation of its operations currently located in the City of Saskatoon. It is the intent to sell Parcel A.

The property is currently zoned Light Industrial 1 (DM1). Rezoning will not be required for the intended use; however the intended use is discretionary within this zoning district, thus a discretionary use application has been submitted to the RM for Council's consideration. Conformity of the proposed development to the standards specified in the Zoning Bylaw is summarized in Table 1.3.

1.1.3 Number of Lots Proposed

It is proposed that the property be subdivided into two lots. The Parcel A is to be approximately 24.1 acres (9.75 ha) and Parcel B is to be approximately 27.35 acres (11.07 ha). The layout of these parcels is shown in Appendix A: Plan of Proposed Subdivision.

1.1.4 Summary of Development

Brandt Tractor is a provider of parts, service and sales of John Deere Equipment in Western Canada. Brandt Tractor Ltd. is a division of the Brandt Group of Companies, a company which dates back to 1932 with the establishment of Brandt Electric. The Saskatoon location is one of 21 branches in the group which supports the John Deere manufactured product from Manitoba to the British Columbia coast. The world renowned John Deere name is synonymous with quality products utilized in the agricultural, industrial, forestry, and commercial segments and Brandt works as their conduit to the end user as a supplier of product support and warranty, as well as equipment.

The Saskatoon branch of Brandt Tractor Ltd. is currently located on Millar Avenue in the City of Saskatoon. Relocation to a larger site in the RM is desirable in order to accommodate the equipment inventory, allow for development of a larger building to house the sales and service operations as well as administrative support, and provide a more visible, accessible and convenient access to customers, who are drawn from throughout the region. Brandt Tractor has typical business hours of 7:30am through 5:30pm Monday to Friday, and Saturday hours of 8:00am to 12:00noon. While these main hours of operation do not fluctuate due to seasonal changes, Brandt Tractor may be open earlier and stay open later occasionally on a temporary basis, as necessitated by customer demand. The branch employs 45 to 50 individuals.

Brandt Tractor has established a high standard of facility design and property standards at all its locations throughout western Canada. Figure 1.1 below provides an example of a Brandt building similar to, although slightly smaller than, the one proposed on the site in the RM. The Site Plan (Figure 1.2) provides a conceptual overview of the site layout, building footprint and other facilities to be located on the site, with details provided below.

Figure 1.1 - Example of Brandt Facility



The Brandt Tractor operation (Parcel B) will include an office and parts department of approximately 20,000 square feet, with an adjoining 25,000 square foot shop for a total building area of 45,000 square feet. The structure will be a one storey building with a height of 20 feet for the office component and 36 feet for the shop component. Siting and layout of the building is shown on Figure 1.2. The building setback will be approximately 275 metres (900 feet) from centerline of Beam Road and approximately 125 m (410 feet) from centerline of Highway 16.

The balance of Parcel B development will be an internal roadway, parking area, loading dock, and equipment display area. Onsite parking for the operation will be provided, and will include a paved parking lot with capacity for 75 vehicles. A double-sided loading dock, located on the south side of the property, will serve as the destination point for semi tractor trailers. An internal driveway will allow these units to proceed directly to the loading dock, and is designed to minimize traffic conflict with the light vehicle traffic on site. Transportation engineers from AECOM have reviewed the proposed internal road alignment to ensure an adequate turning radius is provided to accommodate the trucks entering the site.

The remaining 24.1 acres (Parcel A) will be sold as a development site.

This CDR is submitted in conjunction with the application for discretionary use, and provides the background information in support of the development proposal. A site context map (Figure 1.3) provides an indication of the subject property in relation to other surrounding land uses.

1.2 Land Use Context

1.2.1 Location and Area

The property is located in the Corman Park – Saskatoon Planning District, within the RM. It is an irregular shaped property, bounded on the northeast by Highway 16 (Yellowhead Highway), the northwest by Beam Road, the west by an undeveloped road allowance, and the south by 60th Street West, legally described as the SW quarter section of 20-37-5-W3M extension 66. It is currently comprised of an open field with a slough in the east corner. There are no buildings or building remnants on the property.

1.2.2 Location Rationale

Brandt Tractor Ltd. is currently located on Millar Avenue in the City of Saskatoon. Relocation to a larger site in the RM is desirable in order to accommodate the equipment inventory, allow for development of a larger building to house the sales and service operations as well as administrative support, and provide a more visible, accessible and convenient access to customers who are drawn from throughout the region. The proposed development is situated within an area that provides ready access to the provincial highway network as well as to the City of Saskatoon and will be compatible with existing land uses in the area.

The property is larger than that required by Brandt, thus the intention to apply to subdivide the property and sell the remaining parcel.

1.2.3 Existing Land Uses within the Vicinity

The property is in an area generally developed for light industrial and commercial use. The BizHub Industrial Park is located to the north, across Beam Road and Agriplace is located across Highway 16. Additional light industrial and commercial developments extend along Highway 16. Other adjacent land uses include agricultural lands, an autowrecker, and airport authority lands, to the south.

1.2.4 Fit with Existing Land Uses

The proposed subdivision and use for the property is an appropriate fit with the existing light industrial uses and there is a very low likelihood for land use conflicts. It is also in keeping with the Saskatoon Airport Authority requirement for building height and bird hazard mitigation.

1.2.5 Legal Description

Table 1.1 below provides the legal parcel description that comprises the area proposed for development. All of the land is currently owned by Brandt Tractor Properties Ltd.

Table 1.1 - Legal Parcel Description

Land Description	Surface Parcel Number	Parcel Size (approx)
SW-20-37-5-W3M Ext. 66	135907342	51.45 acres (20.82 ha)

Source: Information Services Corporation of Saskatchewan (ISC), Search Date: 2011-09-19

Figure 1.2 - Site Plan

Figure 1.3 - Context Map

1.3 Policy Context

1.3.1 Official Community Plan and Zoning Bylaw

The Official Community Plan (OCP) and Zoning Bylaw for the RM establish objectives and policies to accommodate industrial development in a planned manner. Table 1.2 - Official Community Plan

and Table 1.3 Zoning Bylaw identify the key elements of both of these documents which relate to the proposed development and summarizing how they will be addressed.

Table 1.2 - Official Community Plan

Section	Policy Statement	Response
3.3.2	Industrial developments shall, when deemed necessary by Corman Park, enter into servicing agreements, when subdivision is involved.	Brandt will negotiate a servicing agreement with the RM if deemed necessary
3.3.3	Industrial developments shall be designed and constructed to ensure that alteration to drainage, landscape, or other natural conditions occurs in a way that avoids or mitigates on and off site impacts and that respects any long term plan for the extension of urban infrastructure to the area.	Sufficient storage has been identified in the eastern portion of the site to detain the storm water generated on site from a 1:100 year storm event. Easements for the drainage swales to convey storm water from Parcel A to the shared detention pond and restrictions preventing blockage of these swales will be registered on the title to both parcels to ensure storm water is appropriately managed.
3.4.1	Industrial developments shall meet all municipal and provincial regulations respecting access to and from provincial highways, arterial roadways, and other public roads.	The sites will be accessed from Beam Road and 60th Street respectively. Figure 2.2 Finished Grading shows the access points to these public roadways. The entrance on Beam Road is approximately 200 meters from the centre line of the southbound lane of Highway 16. This is greater than the 155 meter centerline to centerline distance required by the Ministry of Highways and Infrastructure for roadway access points parallel to provincial highways.
3.5.1	All industrial developments must assess and avoid or mitigate potential impact on natural and heritage resources.	Searches undertaken with the Saskatchewan Heritage Branch and Canadian Environmental Assessment Agency. No rare species were identified. A response from the Heritage Branch has not yet been received. Application was also made to the Saskatchewan Ministry of Environment has determined there is no requirement for an Aquatic Habitat Protection Permit to alter the slough on the eastern portion of the property (see Appendix G)
4.1.1	New non-livestock intensive agricultural, and agriculturally related commercial and industrial developments shall meet all municipal and provincial highway regulations respecting access to and from provincial highways, arterial roadways, and other public roads.	Brandt is working with the Ministry of Highways and Infrastructure to ensure highway regulations are met. The entrance on Beam Road is approximately 200 meters from the centre line of the southbound lane of Highway 16. This is greater than the 155 meter centerline to centerline distance required by the Ministry of Highways and Infrastructure for roadway access points parallel to provincial highways

4.1.2	Subdivisions for intensive agricultural or agriculturally related commercial or industrial developments shall have legal and year round, all weather physical access to a municipally maintained roadway	The proposed subdivision will have legal, year round, all weather physical access via Beam Road and 60th St W.
8.1.1	Where a private development requires municipal services, the proponent will be responsible for all costs associated with providing the services.	The only municipal service required is public roadways, specifically 60 th Street West and Beam Road. Detail is included in section 2.2.2 of this report.
8.2.1	To make the most efficient use of existing roadway facilities, Corman Park will encourage residential subdivisions and developments to locations adjacent to existing roads	The development is located on existing roadways
8.2.4	All development proposed adjacent to a primary or secondary provincial highway shall be subject to approval from the Saskatchewan Ministry of Highways and Infrastructure.	Approval from the ministry will be obtained prior to development. Initial discussions have taken place.
8.2.5	Nothing in this plan shall interfere with the continued safe operation of the Saskatoon Airport. Land use in the vicinity of the Airport shall be of such type, height and density as to be compatible with Airport operations at present and in the future. Agricultural lands around the Airport will require detailed study and impact assessments prior to designation for other uses.	Brandt has been in consultation with the Saskatoon Airport Authority and the intended use will meet the draft Airport Regulation in terms of building height and will not increase the amount of open surface water within the site. (see Appendix I)
8.3.6	Applications to connect to Saskatoon potable waterlines shall be in accordance with policies established by Saskatoon from time to time.	Application has been made to SaskWater to provide water for the site. Sewage will be managed through a septic tank system, which will be pumped out and hauled offsite for treatment.

Table 1.3 Zoning Bylaw

Section	Policy Statement	Response
3.6.1	The Development Officer shall determine if development permit applications are subject to the requirements outlined in Registered Plan No. 88S00875 as provided by Transport Canada or it's designate. Where a development permit application is subject to the Saskatoon Airport Zoning Regulations, the applicant may be required to seek the approval of Transport Canada, the Saskatoon Airport Authority, NavCanada and such other agencies as may be appropriate prior to a development permit being issued.	Brandt has been in consultation with the Saskatoon Airport Authority and the intended use will meet the draft Airport Regulation in terms of building height and will not increase the amount of open surface water within the site. (see Appendix I)

<p>3.16.2</p>	<p>Where a proposed development alters site drainage potentially affecting adjacent or downstream properties, the applicant shall be required to submit an engineered design for the proposed drainage works incorporating sufficient capacity to accommodate the surficial water runoff for a 1:100 year storm event with no incremental increase in offsite flows in excess of what would have been generated from the property prior to the new development.</p>	<p>The slough on the eastern portion of the property will be engineered into a storm water detention pond, capable of detaining site run off for a 1:100 year storm event. The detention pond for both parcels will be located on Parcel B, however there will be an agreement in place, registered against the land title, to permit the water from Parcel A to cross Parcel B via easements and be detained in the pond. Saskatchewan Watershed Authority has determined there is no requirement for a permit (see Appendix H)</p>
<p>3.17</p>	<p>The use of landscaping is required adjacent to exterior storage areas within industrial developments to provide a natural screening of activities that are visible from public</p>	<p>Landscaping will be developed in such a manner as to screen exterior storage areas. A detailed landscape plan will be submitted to the RM once the final site design is complete. Figure 1.1 shows an existing Brandt Tractor Property and generally the type of landscaping which the company plans for this development.</p>
<p>3.18.2.</p>	<p>Development permit applications shall include a landscape plan clearly indicate and accurately identify the following: a) a site plan drawn to scale, including dimensions and distances, a north arrow and necessary interpretive legends; b) boundaries and dimensions of the site; location and name of adjacent streets; c) location of all buildings or structures and all structure-to-property line setbacks distances; d) the mandatory five (5) metre fire break; e) location and type of all light fixtures both attached and detached; f) the location of all attached and detached signage; g) location of off-street parking and loading areas; h) location of proposed screening including materials and height; i) type and quantity of existing plant materials to be retained; j) location of all soft landscaping proposed, identifying the common and botanical name, location, quantity and spacing; k) any other information requested by the Development Officer to accurately and thoroughly evaluate the proposed development.</p>	<p>This will be provided to the RM once the site development plan is complete Figure 1.2 and Figure 2.1 show some of the required information.</p>

3.18.14	All outdoor lighting for any development shall be located and arranged so that no direct rays of light are directed at any adjoining properties; interfere with the use and enjoyment of neighbouring lands; or interfere with the effectiveness of any traffic control devices or the vision or safety of motorists.	Lighting will be installed such that it is not directed at adjoining properties or interfere with neighbouring properties, public roadways, or the John G. Diefenbaker International Airport.
3.18.17	For sites adjacent to the Saskatoon International Airport, the maximum constructed height of a building or structure shall be subject to the approval of the Saskatoon Airport Authority.	The buildings on property will be lower than the maximum height limit. See Appendix I for correspondence with the Saskatoon Airport Authority.

1.3.2 Specific Professional Expertise

AECOM has undertaken an in depth analysis of existing information and materials and has conducted additional surveys, research and analysis to compile the detailed information necessary for submission of this proposal. This work has included:

- Preparation of base mapping,
- Topographical survey of site,
- Geotechnical investigation (Appendix B)
- Phase I Environmental Site Assessment (Appendix C)
- Review of existing documents and reports, and RM Official Community Plan and Zoning Bylaw,
- Preparation of topographic, aerial, drainage and concept plans
- Preparation of a drainage and grading plan
- Preparation of a traffic and roadway analysis on 60th Street West
- Meetings / contact with reviewing agencies, including the RM administration, Ministry of Highways and Infrastructure, utility companies, and; the Saskatoon Airport Authority.

The information and findings are presented in this CDR and accompanying appendices.

2. Inventory and Analysis

2.1 Existing Land Use

2.1.1 Land Area and use

The total land area intended for development is 51.45acres (20.82 ha). The current principal use of the land is uncultivated agricultural land.

2.1.2 General Topography

The property proposed for development is located on lands that are characterized as moraine hummocky, with an undulating topography consisting of unsorted mixtures of sand, silt, clay and boulders (U of S, 1999). Most of the land is Class 3 for agricultural production, with a subclass "S", indicating stoniness, under the Canada Land Inventory Classification system. The eastern most portion of the property is Class 6 with subclass "W" for wet.

As shown on the highest points of land in the development are in the north center, with a peak elevation of 503 metres (geodetic). Overland drainage runs generally to the south east. Surface run-off collects in the south and ultimately southeast portion of the site. The lowest elevation is 496.0 metres (geodetic) resulting in an overall relief difference of approximately 7 metres (23 feet).

The concept plan for Brandt Tractor Properties Ltd. has been developed to create a subdivision plan that is appropriate to the topography and natural features of the site, The development meets all requirements of the OCP and Zoning Bylaw, as well as the provincial acts and regulations including the Planning and Development Act and Subdivision Regulations. The subdivision plan is a fairly straight forward, as it simply divides the existing parcel into two parcels as shown in Appendix A: Plan of Proposed Subdivision.

2.1.3 Utility Systems

The property is currently unserviced; however, SaskWater, SaskPower, SaskEnergy, and SaskTel all have lines adjacent to or near the property. Section 2.2 provides an overview of proposed utility servicing.

2.2 Description of Proposed Development

Figure 1.2 shows the site plan. The proposed development is described in the following sections.

2.2.1 Lot Development and Phasing

A Plan of Proposed Subdivision (PPS) is attached as Appendix A. It is anticipated that both parcels will be developed upon receiving appropriate approvals, therefore no phasing is required. Parcel A is to be approximately 24.1 ac (9.75 ha) and Parcel B is to be approximately 27.35 ac (11.07 ha). Due to the minor nature of this subdivision, Brandt is requesting exemption from the Municipal Reserve (MR) requirement. It is our understanding that, due to the “may” rather than “shall” language with regard to section 181 of the Planning and Development Act, 2007 (see below) indicates that the MR is only required if the approving authority opts to require it.

181 The owner of land that is the subject of a proposed subdivision shall provide, without compensation, to the municipality in which it is located all or any of the following that an approving authority **may** require in accordance with this Part:

- (a) land for environmental reserve or municipal reserve;
- (b) money in lieu of any of the land required to be dedicated as municipal reserve;
- (c) a combination of land and money.

A geotechnical investigation was undertaken on the site by AECOM and is attached as Appendix B. The investigation concluded that this area is generally considered suitable for the proposed development. The recommendations of the geotechnical report will be used for the site development, including roadways buildings and other structures.

An internal roadway through the subdivision will create a frontage-type situation parallel to Highway 16. Visual buffers will be utilized along other roadways as required under the zoning bylaw for outdoor storage areas. Due to the light industrial nature of the surrounding land uses, with minimal land use conflict potential, it is not anticipated that additional buffering will be necessary.

There are no proposed public facilities requiring management structures, operations, maintenance or insurance as part of this development.

2.2.2 Transportation

2.2.2.1 Access / Egress

Access to the property is proposed from Beam Road (Parcel A) and 60th Street (Parcel B) with an internal, private roadway connecting the two access points, as shown on Proposed Plan of Subdivision (Appendix A). A crossing agreement, allowing for the movement of traffic between parcel A and Parcel B will be signed between Brandt and the purchaser of Parcel A, which will be registered on the title of both parcels. Most traffic will access the site via Beam Road and will utilize the internal roadway. Through the use of signage and employee education, Parcel B traffic will be directed to the internal roadway, rather than the access point on 60th Street West. The access point on Beam Road is approximately 220 meters from the centreline of Highway 16 southbound.

The Ministry of Highways and Infrastructure has registered a control easement adjacent to the northeast corner of the subject property, to accommodate a future interchange at Highway 16 and Beam Road. If and when that interchange is developed, it will result in a grade separated overpass. At that time the Beam Road access to Parcel A will be closed and a new access point will be developed on 60th St W, approximately 925 m east of Beam Road.

2.2.2.2 Internal Road Network

The concept plan was established with one internal, private roadway, which will remain the responsibility of the property owners. The roadway will utilize ditches and culverts, rather than concrete curb and gutters, to convey storm water.

2.2.2.3 Traffic and Roadway Condition Assessment

Roadway traffic expected to and from the location will consist primarily of light automobiles and trucks, as well as highway tractor-trailer units. Brandt has been tracking traffic at their current location and, based on this, it is anticipated that traffic volumes in the range of 200 vehicles per day will be generated, of which approximately 8 units per day will be highway tractor trailer units. It is assumed that the second parcel will generate similar traffic volumes and types.

Traffic

The Institute of Transportation Engineers (ITE) publishes an industry standard recommended practice guide titled "Transportation Impact Analysis for Site Development". According to the ITE recommended practice, 100 vehicles per hour (vph) site generated traffic in the afternoon peak hour is the qualitative threshold above which a formal traffic impact study is required. The 100 vph threshold is based on the following:

1. An additional 100 vph can change the level of service (LOS) or significantly increase the volume-to-capacity ratio of an intersection approach; and
2. Left or right-turn lanes may be needed to satisfactorily accommodate site traffic without adversely impacting through (non-site) traffic.

Based on the square footage of the proposed development, the Brandt tractor location on 60th Street will generate less than 100 vehicles per hour (vph) in the afternoon peak hour. For comparison purposes the Regina Brandt tractor location, which is much bigger than the one proposed for the 60th Street location, generates about 49 vph in the afternoon peak hour. The traffic at the Regina Brandt Tractor location was counted on October 31, 2011.

For this reason, it is our opinion that the Brandt Tractor project can proceed without a formal traffic impact study.

Roadway Condition

The roadway quality of Beam Road has been negatively impacted by existing traffic. Brandt will participate in an upgrade of the roadway to the relative to the degree of its impact.

RM Administration has stated that 60th Street West is functioning adequately for it's current level of use. AECOM traffic engineers have done an assessment of this roadway, as per the RM's Construction Standard for Internal Commercial Industrial Road as recommended by RM administration. A visual road assessment of the roadway was conducted on Monday, November 14, 2011. The objective of the assessment was to observe and record all existing conditions of the road.

The section of 60th Street West under review is a two lane gravelled surface roadway approximately 1.1km long and currently provides internal two-way traffic within the area and a one-way southbound direct access onto Idylwyld Drive. The average width is 7.5m. The existing surface is ridged at edge of the roadway from the maintenance grading operations (see Photos Nos. 5 and 7 in Appendix J). Drainage is mainly through side ditches and culverts. The side ditches appears to be adequate and meets the construction standard requirement. See Photos Nos. 2 and 8 in Appendix J.

The other photos in the photo log (Appendix J) show additional features of the existing roadway. The section of roadway being reviewed consists of a tangent section in the middle connected to two curves at the end. The curve radius to the north is estimated at 700m; and to the south the curve radius is estimate at 500m. Both curves should have super-elevations to meet the required standard, however, none was observed. The surveyed cross sections in Appendix J do show minimal super-elevation.

The posted speed of 60th Street West is 80 km/h. Sight distances at the major access points appears to be adequate. The access from Beam Road to 60th Street West is located at a slight angle (estimated at 76 degrees). This is not a major concern as the sight distance at this location appears to be more than adequate.

One other observation was noted with respect to the Saskatchewan Rural Development Manual Plan No. 800-12 – there should be a minimum of 20m straight section for the minor road intersecting the major road (Beam Road in this case); none was observed.

Overall the road surface is generally in good condition for this type of road. Slight corrugations are beginning to develop on some sections of the road. This is normal for this type of road and can easily be fixed with routine maintenance. There is evidence of slight rutting occurring in outside wheel paths for both lanes.

On November 10, 2011, AECOM drilled five test holes, at 200 meter intervals, along 60th Street West to determine the construction. Two of these were drilled to a depth of 10 feet and the other three to a depth of five feet.

The as-constructed standard of 60th Street was assessed using the test hole results, surveyed cross sections, and visual field observations noted above. The results of the assessment are detailed in Table 2.1.

Table 2.1 Existing 60th Street West Roadway Features Standards Assessment

RM of Corman Park Construction Standard for : Internal Commercial Industrial Road			
	Roadway Element	Required Standard	As-Constructed Standard Assessed
1	Right-of-Way		
	Purchased	46 meters	
	With Municipal Approval	30 meters	Meets this requirement

2	Finished Top Width for Heavy Haul Roads		
	Gravel Surface	10 meters	7.5 meters on Ave
	Asphalt surface	9 meters	
3	Side slopes		
	Standard	4:1	
	Fills 0-3 meters	4:1	Does not meet standard – mostly from 3:1 to 2:1
	Fills 3 - 4 meters	12 meters from toe of slope to shoulder	N/A
	Fills over 4 meters	3:1	
4	Backslopes		
	Minimum	5:1	Mostly meets standard with some substandard sections
	Minimum	3:1	
5	Snow clearance		
	0.3 meters or less above natural surface at 15.0 meters from Centerline	Flattened with variable slope of 5:1 to 3:1	Appears to be acceptable
6	Gradient		
	Maximum	5%	< 5%
	In unusual circumstances	6%	
7	Stopping Sight Distance - 80 km/h design Speed		
	Minimum	140 meters	Appears to be acceptable
8	Clear Vision at Intersection		
	Intersection of Municipal and Grid (80 km/h) design speed	85 meters	Appears to be acceptable
	Intersection of Municipal and Primary Grid (80 km/h) design speed	140 meters	
	Intersection of Highway and another Heavy Haul Rd (100 km/h) design speed	200 meters	
9	Culverts		
	Standard Design Flow	Q15	
	Minimum Culvert Size	0.5 meters	ok
10	Average shoulder elevations above adjacent ground in fills	0.6 meters	
11	Sub cut of objectionable organic material is required for fills less than 0.6 meters		From the logs - appears to have been met
12	Minimum subgrade elevation above the high water level	1.5 meters	From the logs - appears to have been met

13	Driving surface treatment		
	Clay cap	0.3 meters	
	Gravel incorporation	0.1 meter	From the logs - appears to have been met
14	Alignment		
	Curves	MHI Standards	
	Super-elevation (80 km/h design speed)		
	Curve # 1 estimated Radius 700 m	4%	No super-elevation observed – cross section shows minimal
	Curve # 2 estimated Radius 500 m	5%	No super-elevation observed– cross section shows minimal

The most significant deficiency with the as-constructed road is the average gravelled surfaced width of 7.5m as compared to the required 10.0m. At the time this road was constructed, this most likely was the standard.

The surveyed cross sections and Plan view are shown in Appendix J.

2.2.3 Water Supply

Water usage for Brandt Tractor at its current location on Millar Avenue, for the 6-month period ending July 2010, averaged 85 m³ (3000 ft³) per month. Considering projected growth of the work force and an increase in shop area, an estimated water usage of 142 m³ (5,000 ft³) per month will be considered for the Brandt parcel. To allow capacity for both Parcel A and B, a total of 425 m³ (15,000 ft³) should be considered at this time, resulting in an estimated Average Day Demand (ADD) of 14 m³/day (2.6 USGPM).

Brandt has applied to SaskWater to connect to the existing metering building across Highway 16 with a private line to service the site. Fire hydrants will be provided every 90 m within the site to comply with the City of Saskatoon guidelines, which should allow for fire protection to the remaining area if subdivision occurs in the future. Valves will be provided on every hydrant lead and on the main adjacent to the hydrant tee to isolate maintenance areas with little disturbance to users. Further detail on water servicing is available in Appendix D.

2.2.4 Wastewater Collection

Wastewater will be managed through on-site holding tanks, which will be pumped out by a commercial liquid waste hauler and taken to the City of Saskatoon’s wastewater treatment plant.

2.2.5 Drainage

The site is currently undeveloped agricultural land. It is generally flat with ground elevations ranging between 503 m and 496 m above sea level. It naturally drains southeast to an existing slough at the corner of the property bounded by Highway 16 and 60th Street West. The site slopes east at about 0.5% before increasing in slope just west of the slough. The slope at the slough is approximately 3% grade to the bottom where it is essentially flat under the water body. Runoff also collects in the slough from a large catchment area including portions of Saskatoon’s John G. Diefenbaker International Airport, BizHub Industrial Park and a large rural area to the northwest. The slough drains across Highway 16 by entering an 800 mm diameter corrugated steel culvert. It then flows southeast in the ditch briefly before being directed through a pipe which connects to the City of Saskatoon storm sewer system at 60th Street West.

The invert elevation of the outlet pipe in the slough is at approximately 496 m, so this can be considered the Normal Water Level (NWL) associated with the slough. Any volume of water detained below this elevation does not

contribute to the active storage volume required to contain runoff, so is considered an inactive volume or dead storage. The High Water Level (HWL) of the slough is difficult to determine without using intensive software modeling and subsequent data analysis that considers the entire catchment area, soil conditions, soil characteristics and other contributing factors. A survey of the water level in July 2010 showed that an elevation of 497.7 m was a recent HWL after numerous severe rainfall events.

Stormwater runoff for the Brandt development is proposed to be conveyed via overland surface drainage routes using perimeter ditches, swales and culverts. No minor storm water pipe systems are proposed. A detention pond in the southeast corner of the parcel will contain the runoff produced from the Brandt property. The pond will be sized to contain the volume of runoff produced during a 1:100 year rainfall event at the high water level with a maximum depth of 2.0 m. Any overland flows originating from upstream would continue to flow around the Brandt property and into the City storm sewer system.

The pre-development volume of runoff produced during the 1:100 year storm (producing 90 mm depth of rainfall over 24 hours) from the total parcel size of 20.821 ha is 2,810 m³. The volume of post-development runoff produced from this area is approximately 11,060 m³, resulting in storage requirements for the additional 8,250 m³. This pond has an outflow, however, there is potential for the City of Saskatoon to restrict this through a flow control mechanism, therefore, this pond has been designed using the standard for ponds with no outflow. For ponds with no outflow, an additional 25% storage volume is required as per City of Saskatoon design standards, so the total volume of runoff to be contained onsite is 10,300 m³. As shown in Figure 2.2, the storage area can accommodate 11,000 m³ of runoff before 60th Street West begins to flood.

Since the culverts under Highway 16 are not being altered, the maximum rate of flow through them will not be altered unless a control mechanism is installed downstream of the Brandt property. If the City of Saskatoon restricts runoff from entering the storm sewer inlet at 60th Street West, the Brandt Tractor site can accommodate the post-development runoff produced on the site from a 24-hour 1:100 year rainfall event.

The storm water detention pond is located on Parcel B. The drainage swales and drainage agreement associated with both parcels will be registered as easements on title, through a feature plan, to help ensure that the drainage system will work as designed and that the storm water from Parcel A will be detained within the pond located on Parcel B. It is intended the only grass and other herbaceous material, trees, gravel, rock, permeable fences, and roadways parallel to the direction of the swale be permitted within these easements. Roadways crossing the swale will have culverts to prevent interference with drainage.

Figure 2.2 shows the proposed finished grading

Application has been made to the Ministry of Environment (MOE) for an Aquatic Habitat Protection Permit (AHPP). The MOE has determined that an AHPP is not required for this project. The MOE correspondence is included as Appendix G.

An application to the Saskatchewan Watershed Authority (SWA) to construct a drainage works project was submitted for approval. Ron Crush, Acting Supervisor, Regional Operations with SWA has replied that Brandt's proposed development constitutes site levelling and landscaping, therefore will not formally trigger any regulatory requirements. SWA does note that the developer is required to maintain natural drainage patterns from the development as well as the natural flows through the property so as not to adversely affect ancillary lands not controlled by the developer. Should natural flows be altered then an Approval from the Authority will be required. Brandt has addressed this issue through the drainage easements on proposed plan of subdivision, which will protect the natural drainage patterns. The SWA correspondence is included as Appendix H.

2.2.6 General Servicing

A Servicing Review is included as Appendix D and the completed Summary of Property Servicing Form is included as Appendix E.

2.2.7 Infrastructure and Utilities

2.2.7.1 Buildings

There are no buildings currently on the site. The Brandt Tractor proposed development (Parcel B) will include an office and parts department of approximately 20,000 square feet, with an adjoining 25,000 square foot shop for a total building area of 45,000 square feet. The structure will be a one storey building with a height of 20 feet for the office component and 36 feet for the shop component. It is assumed buildings will be constructed on Parcel A and the future owner of this parcel will build in accordance with the Zoning Bylaw.

2.2.7.2 SaskTel

A cursory review by SaskTel identified that copper and fibre optic cables can be routed to the Brandt site from two different locations. One option is to tie into the existing network within the BizHub development and the second option was to carry a new line across from the east side of the highway. Application has been made to SaskTel for servicing.

2.2.7.3 SaskEnergy

There are no existing SaskEnergy facilities within or directly adjacent to the proposed development. The closest connection point is the distribution network within the BizHub Industrial Park. Application has been made to SaskEnergy for servicing.

2.2.7.4 SaskPower

SaskPower has an existing overhead three phase 25 KV distribution line running north-south through the property. The power line is located between two easement lines parallel to and perpendicularly distant Easterly 100 feet and 130 feet, respectively, from the west boundary of the quarter section line. In order to properly service the Brandt site, this overhead line will be removed and new underground facilities designed to support the businesses will be installed. At that time, the easement registered against the lot as CNV Instrument No. FP5071 will be discharged.

The Brandt site (Parcel 'B') requires a 600A service with a minimum voltage of 347/600V to the building. Parcel 'A' will be designed with the same requirements as a minimum. Application has been made to SaskPower for servicing.

2.2.7.5 Fire and Protective Services

Fire and protective services are readily available to the proposed subdivision. Corman Park Police Services provide and deal with both provincial law and RM bylaws. In addition, policing services are provided by the Royal Canadian Mounted Police who are typically responsible for matters pertaining to the criminal code and provincial laws.

Appendix F includes correspondence from Fire and protective services providers confirming provision of these services

2.2.7.6 Sustainable Development Features

The storm water detention area in the eastern portion of the site will form habitat for terrestrial and aquatic flora and fauna. Measures such as aeration fountains will however be considered to discourage bird life, which is a hazard for air craft, due to the proximity to the John G. Diefenbaker Airport.

2.2.7.7 *Landscape Plan*

Landscaping will be developed in such a manner as to screen exterior storage areas and to provide an aesthetically-pleasing frontage for that portion of the sites facing highway 16. A detailed landscape plan will be submitted to the RM once the final site design is complete.

2.2.7.8 *Solid Waste Management*

Disposal of solid waste will be handled through use of a waste bin for standard landfill disposal. Maintenance and costs will be borne by Brandt Tractor and disposal pick-up will be scheduled as needed.

2.2.7.9 *Public Amenities*

There are no proposed public amenities requiring management structures, operations, maintenance or insurance as part of this development.

2.3 Natural and Heritage Resources

2.3.1 Environment

The land is under permanent, non-native grass cover and is not currently utilized. The bedrock under the site consists of the Lea Park & Milk River group of the Upper Cretaceous (U of S, 1999). The quaternary geology of the site is described as Moraine Hummocky consisting of unsorted mixtures of sand, silt, clay, and boulders (U of S, 1999). The soil profile generally consists of topsoil, overlaying clay till. Interbedded within the till deposit are thin layers of sand and gravel.

The Species at Risk Act (SARA) is federal legislation that provides legal protection for designated species as recommended by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). A search on Environment Canada's website indicates that several SARA species such as Loggerhead Shrike, Sprague's Pipit, Yellow Rail, Peregrine Falcon, Piping Plover, Long-Billed Curlew and Monarch may be present in the general area. The SARA listed species such as the Whooping Crane and the Eskimo Curlew were not identified in the general area; however the project area is within their migratory path. The Saskatchewan Conservation Data Centre database (SKCDC) search tool was also used. No endangered species have been observed in the project area.

2.3.2 Heritage Resources

The Province of Saskatchewan's online screening tool was accessed to determine if there are known heritage resources on the property. This screening indicated further details were available from the Heritage Branch. An inquiry has been made with the Heritage Branch as to the nature and location of these resources; however a reply has not yet been received. Further details will be provided once this has occurred.

Figure 2.1 Servicing

Figure 2.2 Finished Grading

3. Public Consultation

Adjacent land owners, Dr. R. Keith Downey (south) and BizHub Developments (west and north) have been contacted about the proposed subdivision and development on the site. Dr. Downey's primary concern is surface water. He is of the opinion that stormwater discharge from the BizHub Industrial Park to the north of the Brandt property is draining southward, along the ditch, entering the Brandt property and then surcharging onto his land. This concern is not directly a product of the subdivision and development of the Brandt property. Additional comments gathered during the circulation of the discretionary use application from other businesses in the immediate area were concerns regarding the distance from the highway to the access point of the internal roadway, however this does meet the Ministry of Highways and Infrastructure separation distance requirement.

4. Summary

Brandt Tractor Ltd. serves a wide ranging client base through the sale and servicing of equipment used in the agriculture and other resource sectors. Brandt Tractor's proposed relocation to the RM will accommodate a planned expansion, and provide a more appropriate and accessible location for its client base. The Brandt operation will maintain a high standard of site development and facility design which is particularly important in such a highly visible location in the RM.

Brandt is committed to working with the RM Council and Administration to ensure all development details and requirements are addressed in a timely and appropriate manner.

Appendix A

Plan of Proposed Subdivision

Appendix B

Geotechnical Report

Appendix C

Phase I Environmental
Site Assessment

Appendix D

Concept Plan and
Serviceability Review

Appendix E

Summary of Property
Servicing Form

Appendix F

Correspondence with
Emergency Service Providers

Appendix G

Correspondence with the
Ministry of Environment

Appendix H

Correspondence with the
Saskatchewan Watershed
Authority

Appendix I

Correspondence with the
Saskatoon Airport Authority

Appendix J

60th Street West Roadway
Assessment and Photolog

