



City of Grande Prairie
Development Services
Department

**PINNACLE RIDGE
AREA STRUCTURE PLAN**

Bylaw C-1082

Adopted September 9, 2002

CITY OF GRANDE PRAIRIE

OFFICE CONSOLIDATION

BYLAW C-1082

A Bylaw to adopt the Pinnacle Ridge Area Structure Plan

(As Amended by Bylaw C-1082-04-01 and C-1082-02)

THE MUNICIPAL COUNCIL OF THE CITY OF GRANDE PRAIRIE, IN THE PROVINCE OF ALBERTA, DULY ASSEMBLED, ENACTS AS FOLLOWS:

1. This Bylaw shall be cited as the “Pinnacle Ridge Area Structure Plan” Bylaw.
2. The Pinnacle Ridge Area Structure Plan attached as Schedule “A” is hereby adopted pursuant to Section 633 of the Municipal Government Act, RSA 2000, Chapter M-26.
3. Bylaw C-991, Pinnacle Ridge Area Structure Plan, is hereby repealed.
4. This Bylaw shall take effect on the date it is passed.

READ a first time this 12th day of August, 2002.

“W. Ayling” (signed)
Mayor

“A. Cerny” (signed)
Acting City Clerk

READ a second time this 9th day of September, 2002.

READ a third time and finally passed this 9th day of September, 2002.

“W. Ayling” (signed)
Mayor

“J. Ferguson” (signed)
City Clerk

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1.0 INTRODUCTION

1.1 Plan Purpose

The purpose of the Area Structure Plan (ASP) is to provide direction for the long term development of the south east quarter of 15-71-6 W6M (plan area).

Approval to prepare this ASP was granted by motion on September 3, 1996 by the Council of The City of Grande Prairie. At that time Council “authorized the preparation of an Area Structure Plan for SE 15-71-6 W6M, subject to the following:

- 1) the plan addresses all items listed under City Policy 3270; and
- 2) the plan demonstrates the relationship between SE 15-71-6 W6M and the rest of the land within 15-71-6 W6M.”

The subject lands require preparation and approval of an ASP prior to development in accordance with the provisions of the Municipal Development Plan (MDP) 7.2.2. and Section 638 of the Municipal Government Act.

City Policy 3270 requires a detailed Area Structure Plan for the specific site, SE 15-71-6 W6M. The plan includes information showing critical relationship between “plan area” and the three other quarter sections to the west, north- west, and north of the “plan area”, namely, SW 15-71-6 W6M, and NW 15-71-6 W6M and NE 15-71-6 W6M. These relationships will include, where applicable:

- 1) potential future land uses;
- 2) transportation and transit connections; and
- 3) servicing connections.

Map 1 indicates the location of the subject lands within the City.

1.2 Background

The plan area is designated as a neighborhood area within a residential expansion area in the Municipal Development Plan (MDP). The SW corner of the plan area touches the border with the County of Grande Prairie.

The plan area is strategically located in the overall urban reserve. As such it is in logical sequence for development. Available servicing enhances the plan area in terms of appropriate development flow in the City’s plan.

The plan area is owned by Dirham Construction Ltd., a developer of land in Grande Prairie. His current developments are progressing with consistent sales, a trend that has followed his projects for several years. The lands subject to this ASP are immediately west (across Wapiti Road) from his Mission Park development, and connected via 76th Avenue.

With population growth being stimulated by the steady expansion of immigration, industry and commerce the need to provide a consistent supply of residential lots and other housing types is clear. This developer is responding to a demonstrated market need. See Map 2 - Master Plan / Land Use. Prior to development of this plan, meetings were held with and input given by the City, the County and both school board officials.

1.3 Development Timing

The plan area is subject to phasing based on market need, availability of existing servicing and the provision for long term servicing expansion. We refer the reader to Section 3.0 of this report for a detailed description of servicing concepts as they are affected by topography and the availability of trunk sewers. Phases 1 and 2 can be developed using existing available services. It is proposed to commence development of the plan area by October 1997. Phase 1 represents approximately 29% of the overall development scheme.

See Map 3 – Phasing Plan. Also see 2.11 Development Phasing Policies.

Since its adoption in August of 1995 the Grande Prairie Municipal Development Plan has served as the appropriate guide for planning in Grande Prairie, including Area Structure Planning.

A requirement of the MDP is the provision of Area Structure Plan (ASP) for future residential development areas. While expected to deal with the key issues of roads, transit, density, servicing, land uses, parks, schools, etc., the MDP also requires information to be provided in phasing (sequencing) of developments. By implementing all features described above the applicant is providing a plan that will have the positive characteristics of a planned neighborhood.

The ASP for this plan area involves considerable thought and planning toward its sustainable nature with emphasis on balanced density allocation, road patterns, centrality of community features and provision of good, accessible open space.

An appropriate mix of residential housing types focusing on a small town center clearly establishes a pattern of land use, pedestrian access, and generally strong neighborhood features. Some of these features will become more evident at the detailed design stage. The planning in this ASP conforms to the policy objectives

of growth, strategy, housing, and community and municipal services as outlined in the MDP.

Requirements for Municipal Reserve have been met and exceeded in the ASP. Extensive green space buffers have been provided along the north and east edges of the site. These include an existing dugout to be expanded into a natural wetland feature with a generous (25m) green space surround. This wetland will be designed to serve as a storm detention area which will be described as a Public Utility Lot.

In addition to the above, a large green area at the north east corner of the plan area is designated as an entry park. This park is to feature special landscaping and passive/active facilities.

These green spaces will serve as buffers from the Industrial land to the north and Wapiti Road to the east. Future detailed design will include berming and fencing along Wapiti Road to provide some protection of neighboring residences from traffic noises along this highway. The same principle will apply to those lots along 68th Ave. These berms will form part of the Public Utility Lot area of the development.

This plan indicates a prospective 2.183 ha (5.4 ac) school site just east of the town center. This site will, for the purposes of this ASP, form part of the Municipal Reserve. It is noted that this parcel is in excess of the area required for Municipal Reserve. It is located in the 3rd Phase area of development. At present neither of the two Education Boards has identified a need for a school site in this immediate area. In the event a school is not required at this location by the time the third Phase proceeds, a contingency plan to utilize a portion of the site for residential purposes has been prepared. As a minimum approximately 0.73 ha (1.8 ac) - one-third of the site will be retained as Municipal Reserve for future park purposes should the school not be developed.

A .70 ha (1.7 ac) park area is proposed along the west property line of the plan area. This site is strategically located to permit expansion to the west when that area is planned. Part of the expansion area includes a Municipal Road Allowance.

Green space is also provided at the corners of the main intersection in the town center. One of these corners will be a .50 ha (1.38 ac) space. See 4.0 TRANSPORTATION for further comments on this intersection.

The densities proposed fall within the City's Planning guidelines of 40 - 50 people per hectare (16 - 20 people per acre). See Maps 1 to 10.

2.0 AREA STRUCTURE PLAN DESCRIPTION

2.1 Plan Area Boundaries and Ownership

The plan area comprises the south east quarter of Section 15-71-6 W6M and is bounded on the east by Wapiti Road and on the south by 68th Avenue. The plan area is 62.7 ha (155 ac).

The plan area is registered in the name of Dirham Construction Ltd. at this time.

A small parcel of 0.8 ha (+ 2.0 acres) is owned by Dale Green and is located on 68th Avenue just west of Wapiti Road. See Map 2 – Master Plan / Land Use.

2.2 Neighboring Lands

Future expansion to the west and north west are shown on maps 2 to 11. These lands comprise several parcels bounded by 68th Avenue on the south, 84th Avenue on the north and 116 Street on the west. The ASP calls for appropriate collector road extensions into NW 15-71-6 W6M and SW 15-71-6 W6M with conceptual neighborhood town center concepts including potential school sites.

A proposed “Future Neighborhood Commercial” location is shown on Map 5 - Commercial Use Plan. The objective is to provide for a future centrally located commercial center serving the comparison shopping needs of the projected 8400 residents on the whole area. The lands to the north are comprised of a City owned cemetery, a library facility, and Government of Alberta facilities. A strip of future light industrial is located along the north boundary of the plan area.

2.3 Site Topography

The land gently slopes to the east. Elevations vary from 660 meters at the dugout on the east edge of the land to 669 meters along most of the west property line of SE 15-71-6 W6M.

The plan area is vacant excepting for the small residence of Dale Green along 68th Avenue in the SE corner of the land. See Map 8 - Topography Plan.

2.4 Environmental Reserve

No portion of the plan area needs protection as an Environmental Reserve.

2.5 Historical Resources Impact Assessment (H.R.I.A.)

F.R.D. Heritage Consulting has conducted an H.R.I.A. of the plan area. No historical resource was encountered. A report has been prepared by F.R.D. Heritage Consulting, and has been given to the City. Alberta Community Development has no objection to development proceeding on this land.

2.6 Development Constraints

No constraints have been identified with respect to development of the land. Full consideration has been given to providing green buffers between the plan area and the light industrial site to the north and Wapiti Road to the east. Such mitigation is considered normal in the planning of residential neighborhoods.

An acceptable fire response time of 4.6 minutes has been estimated to the school site approximately central to the plan area.

Servicing considerations are addressed under 3.0. UTILITY SERVICING.

2.7 Proposed Land Use

The plan area is classified as Urban Reserve (UR) under the current planning bylaw of the City. To the north is a mixture of light to medium industrial. Properties to the west and south of the plan area are currently shown as Urban Reserve for future residential purposes. To the east the properties along Wapiti Road are under development as residential subdivisions.

Proposed land use is primarily residential and is to include small local convenience commercial and, if needed, a school site.

The primary concept used in the design of the plan area is the creation of a mixture of residential densities focused on a small town centre featuring local commercial, a potential school site, attractive low density multi-family housing and a town center park. This concept will see a significant pedestrian use in the town center area with only the residential users furthest from the town center requiring vehicular travel on other than bad weather days. The objective is to create road and pedestrian linkages into the town center. The plan clearly defines this concept.

A brief description of each of the proposed land uses is presented as follows:

2.7.1 Single Unit Dwellings

The plan calls for a mixture of single family lot (and house) types, ranging from small lots of 304 m² (3,300 square feet) serviced by rear lanes for garage access up to large lots of 750 m² (8,000 square feet) along some of the park edges.

Two-family units are planned to serve as an appropriate interface buffer between the higher density multi-family sites along the north edge of the town center and the single family area north of the two-family units.

Low density ground oriented town homes are planned south of and across the street from the two-family units. This transitional density of maximum 20 d.u. per ha (8.0 per acre) retains the ground level entry, open space and good quality of a family oriented life style. This transitional area may also include, closest to the commercial site to its south side a more intense multi-family development featuring what is commonly known as garden apartments. These units feature one unit above another in a two storey configuration each with a grade level entry. The typical density achievable in this housing type is up to 45 d.u. per ha (18 d.u. per acre).

Southwest from the commercial town center (across the major east-west collector road) a site has been allocated for a medium density multi-family site. This site is ideally suited to a low rise apartment building (maximum 3 stories) with a density not exceeding 74 d.u. per ha. (30 d.u. per acre).

The maximum number of dwelling units proposed in the two family and multi-family areas is 166. This type of density, averaging 46 d.u. per ha. (19 d.u. per acre), is both reasonable and desirable in providing pedestrian support for the commercial area and ensuring activity and energy in the core area of the neighborhood.

It is proposed that two parking spaces be provided for each two-family and multi-family unit. Visitor parking should be clearly defined.

2.7.2 Commercial

The plan calls for a .583 ha (1.44 acre) commercial site at the intersection of the two major collector roads. It is proposed that this commercial area not be a typical “strip mall” configuration. Instead it is proposed that this area be designed with strong pedestrian friendly features, sensible vehicularaccess (from the rear) leaving the front of the site landscaped and connected (visually and physically) to a portion of the town center green space shown on the plan. See Map 2 – Master Plan / Land Use.

The buildings will feature small convenience uses such as a corner store, laundromat, health and beauty salon, barber shop, coffee bar, etc on the main floor. Above each of the several commercial spaces will be a residential suite with appropriate roof decks and private rear access. These combined residential/commercial buildings provide excellent live/work opportunities or equally excellent rental income opportunities to the developer. It is anticipated that each main floor commercial space will comprise between 70 m² (750 sf) and 140 m² (1,500 sf). The plan area has a projected population of 2,700 people. Our experience in similar developments confirms that for each 1,000 people within walking distance of 400 M (1300 ft) up to 557 m² (6,000 sf) of local commercial can be sustained.

In this instance we propose a future 3,700 m² (40,000 sf) major neighborhood commercial center central to the overall area. It is considered wise to limit the three local commercial sites, including the one shown in the plan area, to a maximum of 743 m² (8,000 sf) leaseable space each.

In the final analysis, 583 ha. (1.44 acres) may be greater than needed to accommodate 743 m² (8,000 sf) of local commercial and 8 to 12 suites. Specific site designs will be required to confirm this.

It is noted that the overall area plan shows two other town centers located approximately central to the two quadrants west of the lands. These town centers are connected via collector roads to the town center on the south east quadrant of the site. See Map 2 - Master Plan / Land Use.

The overall plan calls for a future neighborhood commercial site virtually central to the three quadrants subject to this ASP. With a projected population in excess of 8,000 people it is deemed prudent to plan now for the future comparison shopping needs of the residents. This center should contain a maximum of 3,700 m² (40,000 sf) of commercial retail use including a gas bar and restaurant among its tenants. This facility will, if well designed and conceived, serve as a focal point for the general area, a common denominator for the total neighborhood. Every effort should be made to ensure user friendliness and its role as a meeting place for all area residents. Such facilities as a day care center and a post office will ensure its attraction to all users.

2.7.3 Potential School Site

Should it be determined prior to the commencement of Phase 3 (See Phasing Plan - Map 3) that a school site on the lands is desirable the site selected will serve the area well. In the event it is determined a school site is not required a portion of this land will revert to single family usage with a minimum Municipal Reserve retention of 0.73 ha (1.8 ac).

Located on the east quadrant of the town center area the school will be accessible by foot for all multi-family users and many of the single family users in the core area. A .5 ha (1.38acre) park south of the school site provides an added amenity. Locating the school site centrally makes this community facility readily accessible to all neighborhoods on the lands.

We note that the population projected for the plan area (SE 15-71-6 W6M) is +45 people per hectare (18 people per acre). With a total area of 62.7 ha (155 acres) our calculations render a population of 2733 people. Given a currently accepted ratio of 229 students per 1000 population the projected student population is established at 625. We are informed by the City's Public School Administration that the following ratios apply to school population: 7% - kindergarten, 45% - grades 1-6, 22% - grades 7-9, and 26% - grades 10-12. Should the City determine with the School Boards the need for a school site on the lands, the 2.183 ha (5.4 acre) site is adequate for a 625 student school.

2.7.4 Synopsis of Land Use

The table in Appendix A defines the areas and associated population of the various land uses.

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2.8 Architectural Design Controls

Developer imposed architectural design controls will be utilized to enhance the quality of design for this development. Such controls shall be in the form of a restrictive covenant registered against the title of the individual property.

Such guidelines shall include critical design elements such as, but not limited to, massing, cladding, roof lines, heights, garage set backs, etc.

2.9 Development Policies

The development shall conform to the policies and provisions of the MDP and Bylaw C-877 (including any relevant amendments) as they may apply to densities, setbacks, frontages, areas, dwelling types, and other pertinent data.

Neighborhood parks shall be provided with appropriate playground equipment at the developer's expense and as per standards set forth by the City of Grande Prairie Community Services Department.

The developer shall be responsible for tree planting and landscaping along collector roads and may contribute to tree planting along arterial roads adjacent to residential areas.

The above described policies shall form part of the development agreement at the time of subdivision.

2.10 Municipal Reserves

The Planning Act and Section 5.3.2 of the MDP requires that 10% of the developable land be set aside as Municipal Reserve, to be used at the discretion of the City for such facilities as parks and schools.

The ASP as presented herein has provided for 13.55% of the land base for Municipal Reserve including areas designated for parks and a school site.

This represents 8.5 ha (21.0 ac) of land. Of this total the site immediately east of the town center is provided as a potential future school site. This site is 2.183 ha (5.39 acres) in area. See 1.4 and 2.7.3 for further commentary on the possible future uses of this site.

2.11 Development Phasing Policies

The availability of municipal services will have an effect on the overall phasing. This is more specifically dealt with in Section 3.0 - "Utility Servicing". Market conditions will also have an effect on the timing of future phases.

Development shall proceed generally in accordance with the phasing sequence shown and in accordance with a cost analysis at the time of development and current market demand for housing in the City of Grande Prairie.

Variations from the proposed phasing may be permitted by the City without necessitating an amendment to the Area Structure Plan.

Simultaneous development of more than one phase may be permitted if, in the developer's opinion, sufficient market demand to absorb development in both areas is shown or perceived.

Staging of development within each phase is acceptable, provided that road construction within partial phases allows for adequate traffic circulation without "dead ends". Partial development must also provide trunk and lateral utilities of sufficient size to meet the needs of the remainder of the development, which these mains are intended to accommodate. The developer proposes to limit lot exposure to between 30 and 40 lots at a time.

In accordance with City instructions, 68th Avenue will be built to municipal collector road standards in conjunction with Phase 2 to ensure appropriate levels of access and egress.

2.12 Transit

The City of Grande Prairie transit system currently runs east on 84th Avenue at its intersection with Wapiti Road. From there it travels south and loops near the Kateri Mission School, returning north on 84th Avenue and back toward the City along Wapiti Road. The ASP proposes a directional shift at Kateri School along Michael's Boulevard south to 76th Avenue, across Wapiti Road to meet up with the collector road system of the plan area and adjacent parcels. The proposed route touches all three town center school sites and the future proposed neighborhood commercial site. This will ensure the largest number of strong route points for access by the largest number of prospective users. See Map 7 – Transit Plan.

3.0 UTILITY SERVICING

In the preparation of this section, consideration has been given to several important servicing aspects. Firstly, all internal servicing requirements within the plan area, SE ¼ Section 15-71-6 W6M, have been reviewed, detailed and commented on. Secondly, water and sanitary sewer trunk mains for this area have been reviewed and incorporated into this plan, with respect to sizing and location of the required mains. This consideration is vital to the long term growth plans of the southwest lands within the City of Grande Prairie. Thirdly, consideration has been given to the co-ordination of watermain, sanitary sewer, storm sewer and roadwork networks to allow for a smooth interface between the plan area and the west half of section 15-71-6 W6M.

Utility servicing will be predominantly front street servicing. The mains shall be contained within the boulevards and easements where possible. Servicing crossings shall be augered across carriageways, where possible.

Rear lanes are planned options for portions of Phase 2 and Phase 3. This plan intends that the lanes be 10 meters in width and contain all underground utilities. A 4.5 meter paved surface would be constructed in the centre of the laneways for rear lot access. Incorporation of laneways shall be at the discretion of the Developer at the detailed design stage. Lane development shall conform to the City of Grande Prairie's Standards.

3.0.1 Development Policies

Subdivision construction shall not proceed until a Servicing Agreement is finalized between the City of Grande Prairie and the Developer, and an acceptable geotechnical investigation has been completed.

Underground utilities shall generally follow the alignments indicated on Maps 9 and 10.

Road right-of-way widths shall conform to the latest City of Grande Prairie standards for front street servicing. All mains, leads and cables shall be located in boulevards or easements outside the carriageway, where possible.

Lane right-of-way width shall be 10 meters. Alignments of mains, cables and the paved surface shall conform to City of Grande Prairie's standards.

All service lines shall be installed underground and all utilities shall be designed based on the City of Grande Prairie's and Alberta Environment's latest standards.

3.1 Sanitary Sewer

Servicing is to be compatible with the City of Grande Prairie's Wastewater Collection System Master Plan.

The plan area shall be allowed to connect Phases 1 and 2, as identified on Map 3 - Phasing Plan, directly to an existing 250 mm sanitary sewer main located in the north east quarter of section 15-71-6 W6M. The connection point to this 250 mm main is at approximately 110th Street and 79th Avenue. This 250 mm sanitary sewer main flows north to a 375 mm diameter main at 84th Avenue, then east to a 750 mm diameter main at Wapiti Road. All three of the above mentioned existing mains presently have sufficient excess capacity to handle the anticipated peak flow of 15 liters per second from the initial two phases of the

Plan area. The Developer shall be responsible to obtain the required easements from the connection point to the Plan area.

Development beyond Phase 2 will require utilization of the 900 mm diameter west trunk sewer, as shown in the Wastewater Collection System Master Plan. If the west trunk sewer has not been extended to the plan area by others prior to the Phase 3 subdivision application, then the Developer of the Plan area will be required to extend the west trunk sewer, as required, to accommodate further development of SE ¼ Section 15-71-6 W6M.

At the time of this report, the west trunk sewer existed to a point 1250 meters east of Wapiti Road on the 68th Avenue alignment.

3.2 Storm Sewer

Servicing is to be compatible with the City of Grande Prairie's Stormwater Drainage System Master Plan.

In accordance with the City of Grande Prairie and Alberta Environment's Design Standards, stormwater management and a stormwater retention pond will be a requirement for the subject area.

The topography of the quarter section generally falls from the northwest corner to the southeast corner of the site. A dugout presently exists just west of Wapiti Road and approximately 250 meters north of the south property. The storm sewer management design intends for the utilization and upgrade of the existing dugout into a storm retention wet pond. It is intended that the pond be designed and constructed in a manner that will serve as a natural wetland habitat and be landscaped in accordance with City policy. This may include walkways for passive recreational purposes. The area surrounding the actual pond shall be designated as Municipal Reserve. From edge of the expanded dugout to the rear of the neighboring properties the distance shall be minimum 25 m (82 ft).

Due to topographical restraints an approximate 5 hectare area in the southeast corner of the development would flow into the outflow pipe un-retained.

The outflow allowed from the total development area should be in the range of 450 liters per second. The design outflow shall be comprised of the un-retained flow from the southeast 5 hectares mentioned previously, and the remainder from a controlled outlet at the retention pond. Preliminary calculations indicate a required storage volume of approximately 13,500 cubic meters for the 100 year event. The area of the surface at the 100 year event is estimated at 1.7 ha (4.32 ac) and is shown on the plan as a Public Utility Lot.

The outflow pipe from the retention pond and through the southeasterly portion of the development shall ultimately discharge into the west ditch of Wapiti Road, approximately 150 meters south of the development. Erosion control of the ditch shall be considered at the detailed design stage. This ditch flows south approximately 1300 meters south of the plan area, then east to Bear Creek along a natural drainage course.

Development of the retention pond will occur in Phase 2. It is intended that the existing dugout be utilized as a storm retention pond for the Phase 1 development. A temporary overflow would be constructed directly to the adjacent Wapiti Road west ditch.

3.3 Water System

Servicing is to be compatible with the City of Grande Prairie's Water Distribution System Master Plan.

A 400 mm diameter A.C. watermain installed in 1982 exists on the east side of Wapiti Road, adjacent to the plan area. This main will serve as the major water supply feeder to the development. In accordance with the Master Plan, a 250 mm connection to the south and a 300 mm connection to the north are planned for the development. The 250 mm main and the 300 mm main shall ultimately be connected in the west half of the development, allowing for two separate and interconnected water supply feeds.

A fire flow analysis shall be completed at the time of detailed design, to confirm if required fire flows can be generated by the system.

3.4 Shallow Utilities

Power, gas, telephone and cablevision services will be designed by the franchise utility companies and conform to design alignments set out by the Developer and the City of Grande Prairie.

All shallow utility services crossing carriageways shall be installed in conduit pipes.

3.5 Utility Servicing Interface With The West Half Of Section 15-71-6 W6M

Development of the northerly 82 hectares of the west half of Section 15-71-6 W6M is currently controlled by the Flyingshot Lake Area Structure Plan prepared by HIW Surveys Ltd. in May 1991. The site topography of the plan area is gently sloping from the south to the northeast. The southerly 41 hectares of the west half of section 15-71-6 W6M does not currently have an Area Structure Plan in place. The site topography of the land slopes from north to southwest.

3.5.1 Sanitary Sewer

The existing Area Structure Plan for the northerly 82 hectares of the west half of section of 15-71-6 W6M, shows the sanitary sewer collection system beginning at its south boundary and flowing north through public utility lots to existing sewers on 84th Avenue. This follows the natural topography of the land and there appears no reason to connect this gravity collection system to the gravity collection system within the plan area.

In the southerly 41 hectares, the sanitary sewer collection system naturally flows to its southwest corner. Due to topographic restraints, gravity collection of this site is not possible. A sewage pumping station will be required in the southwest corner of the west half of section 15-71-6 W6M, and the sewage pumped through a forcemain on 68th Avenue to the future west trunk sewer on Wapiti Road. No connection between this sanitary system and the sanitary system within the plan area is required.

3.5.2 Storm Sewer

The existing Area Structure Plan for the northerly 82 hectares shows the storm sewer collection point at a stormwater retention pond in its northeast corner. Due to the topography of this land, there is no need for connection to the storm sewer system within the plan area.

In the southerly 41 hectares of the west half of section 15-71-6 W6M, the storm sewer system will naturally drain by gravity to a future pond in its southwest corner. Again, there is no need for connection to the storm sewer system within the plan area.

3.5.3 Water System

The water distribution system within the plan area and the west half of section 15-71-6 W6M, will be required to conform to the City of Grande Prairie's Water Distribution System Master Plan. With a 300 mm stub in the northwest and a

250 mm stub in the southwest, this conformity has been followed within the plan area.

4.0 TRANSPORTATION

All roadways will be designed to meet the latest City of Grande Prairie's Engineering Standards. For the purposes of this ASP the following road right of way widths have been used:

Local Residential Street	21.5 m (70.53 ft)
Residential Collector	23.5 m (77.09 ft)
Major Collector	25.0 m (82.02 ft)
Arterial	30.0 m (98.42 ft)
Lanes	10.0 m (32.80 ft)

The future road network and classifications are outlined on Map 6 – Roads and Linkages Plan.

It is intended that access to the plan area from Wapiti Road would be provided at two locations. The first location is at an existing signalized intersection on the 76th Avenue alignment. This roadway would be constructed to a major collector standard. The second location would be at the 68th Avenue alignment. This roadway would be constructed to an arterial standard. The Developer shall be responsible for costs of upgrading 68th Avenue to a collector standard only. These costs shall be shared with the lands to the south, namely northeast quarter of section 10-71-6 W6M. The City of Grande Prairie, in conjunction with Alberta Transportation funding, shall fund costs involved with upgrading 68th Avenue from a collector to an arterial standard.

Additional future accesses to the plan area are from 84th Avenue and 116th Street, through the west half of section 15-71-6 W6M, and conform to the existing Flyingshot Lake Area Structure Plan.

The internal road network is designed to focus on the town center concept. Located on the intersection of the two collector roads traffic (both vehicular and pedestrian) are drawn to the focal point of the community. This intersection is the literal focal point of the plan area. Each corner of the intersection is a generous green space. At the detailed design stage consideration should be given to enhance pedestrian safety. Traffic calming methods should be introduced which may include “pinching” the sidewalk areas at pedestrian crossings to shorten the road crossing walking distance, advance “stop” warning signs, etc. We note that access is provided to all residential areas in such a way as to reduce the traffic needing to pass through the intersection. We further note

that access to the commercial site is via a rear lane approximately 90 m (295 ft) from the intersection. Pedestrian safety is inherent in the design. Generous City road width standards ensure no obstruction to the turning of buses, trucks, or emergency vehicles. The radial road network provides for attractive development, a natural traffic calming influence, yet ties comfortably into the existing grid patterns in the area.

APPENDIX A

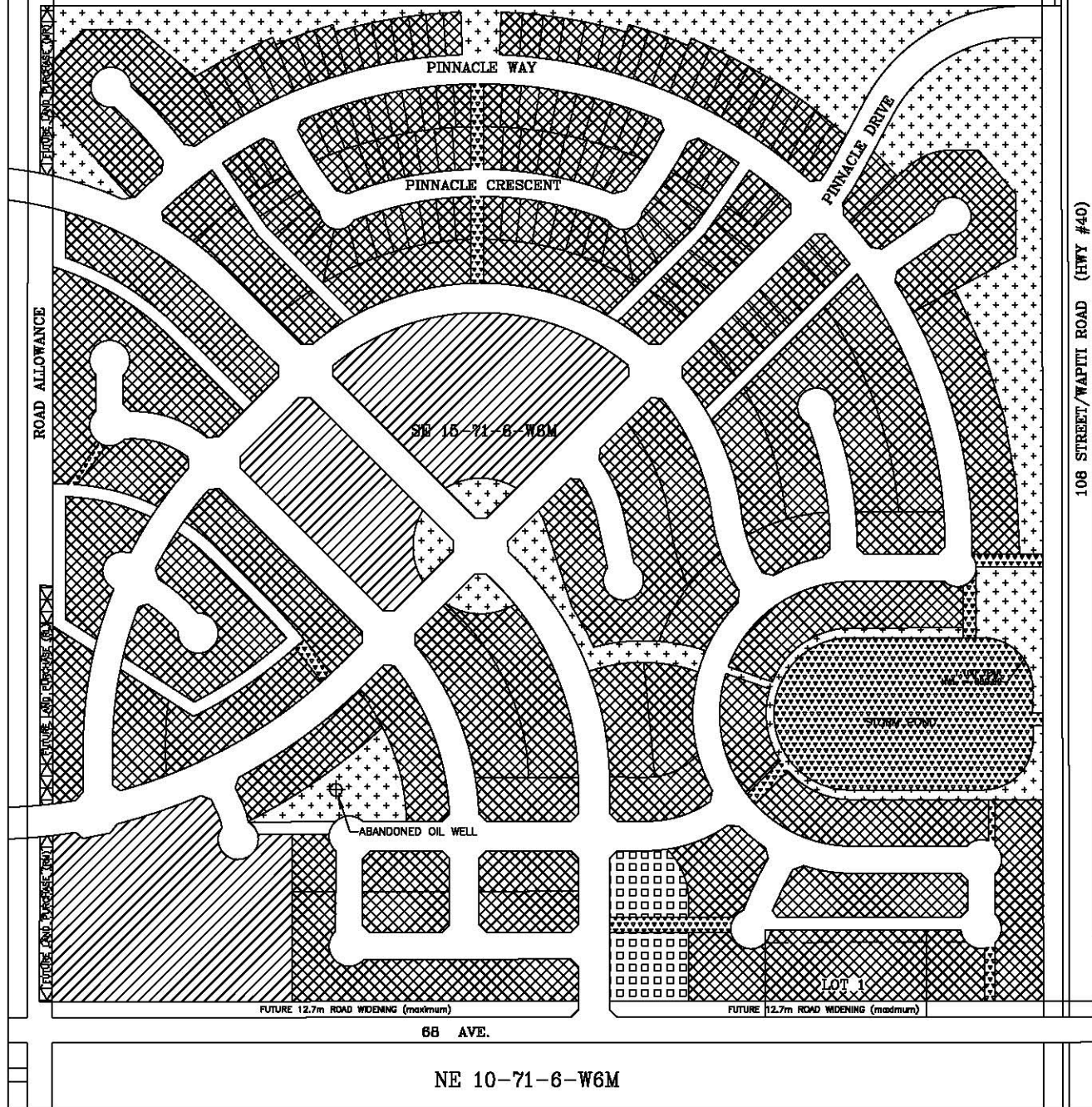
LAND USE CHART

	HECTARES	PERCENTAGE OF GROSS DEVELOPABLE AREA	PROJECTED POPULATION
Total Plan Area	63.408	100.00	
Future Road Widening On 58 th Avenue	0.804	1.27	
Existing Lot 1	0.891	1.41	
Net Developable Area	61.713	97.32	
Municipal Reserve	6.412	10.11	
Roadways	16.593	26.17	
Lanes	1.386	2.18	
Public Utility Lots	2.827	4.45	
Residential (Total)	33.838	53.37	2866
Low Density (RL)	29.669	46.79	2374
Medium Density (RM)	4.169	6.58	492
Commercial (CL)	0.657	1.04	


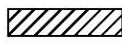
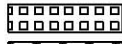
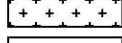
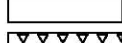
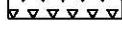
Bylaw C-1082-04-01 April 5, 2004

FUTURE LIGHT INDUSTRIAL
NE 15-71-6-W6M

C of T
932 039 485



legend

-  RL - LOW DENSITY RESIDENTIAL
-  RM - MEDIUM DENSITY RESIDENTIAL
-  CL - LOCAL COMMERCIAL
-  MUNICIPAL RESERVE / PARK
-  ROADS / LANES
-  PUBLIC UTILITY LOT

PINNACLE RIDGE AREA STRUCTURE PLAN map 2

Master Plan / Land Use

ASD PLANNING SERVICES / GPEC CONSULTING LTD.

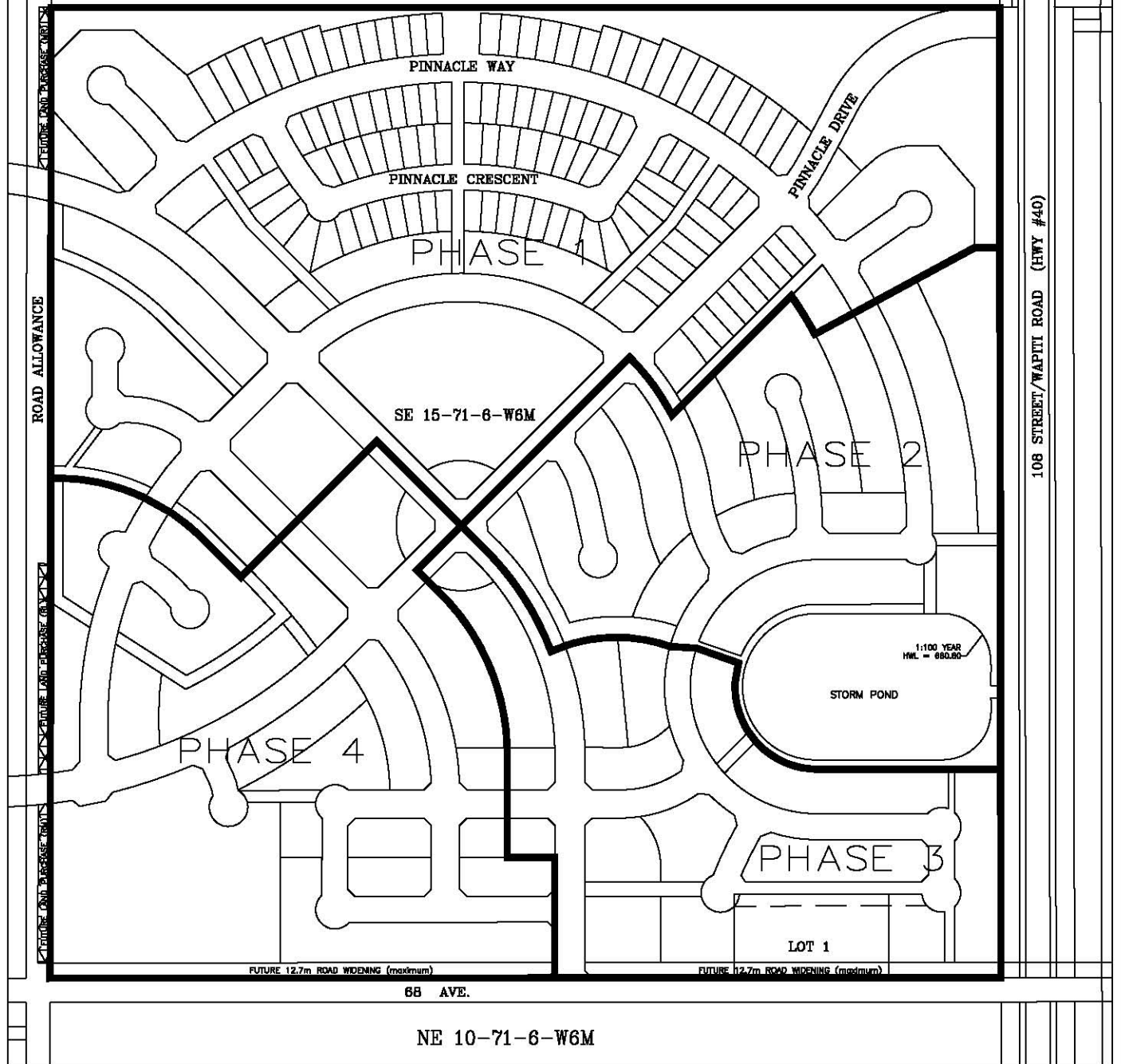
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Bylaw C-1082-02
December 4, 2006



FUTURE LIGHT INDUSTRIAL
NE 15-71-6-W6M

C of T
932 039 485



legend

—— phase boundaries

PINNACLE RIDGE
AREA STRUCTURE PLAN
map 3
Phasing Plan

ASD PLANNING SERVICES / GPEC CONSULTING LTD.

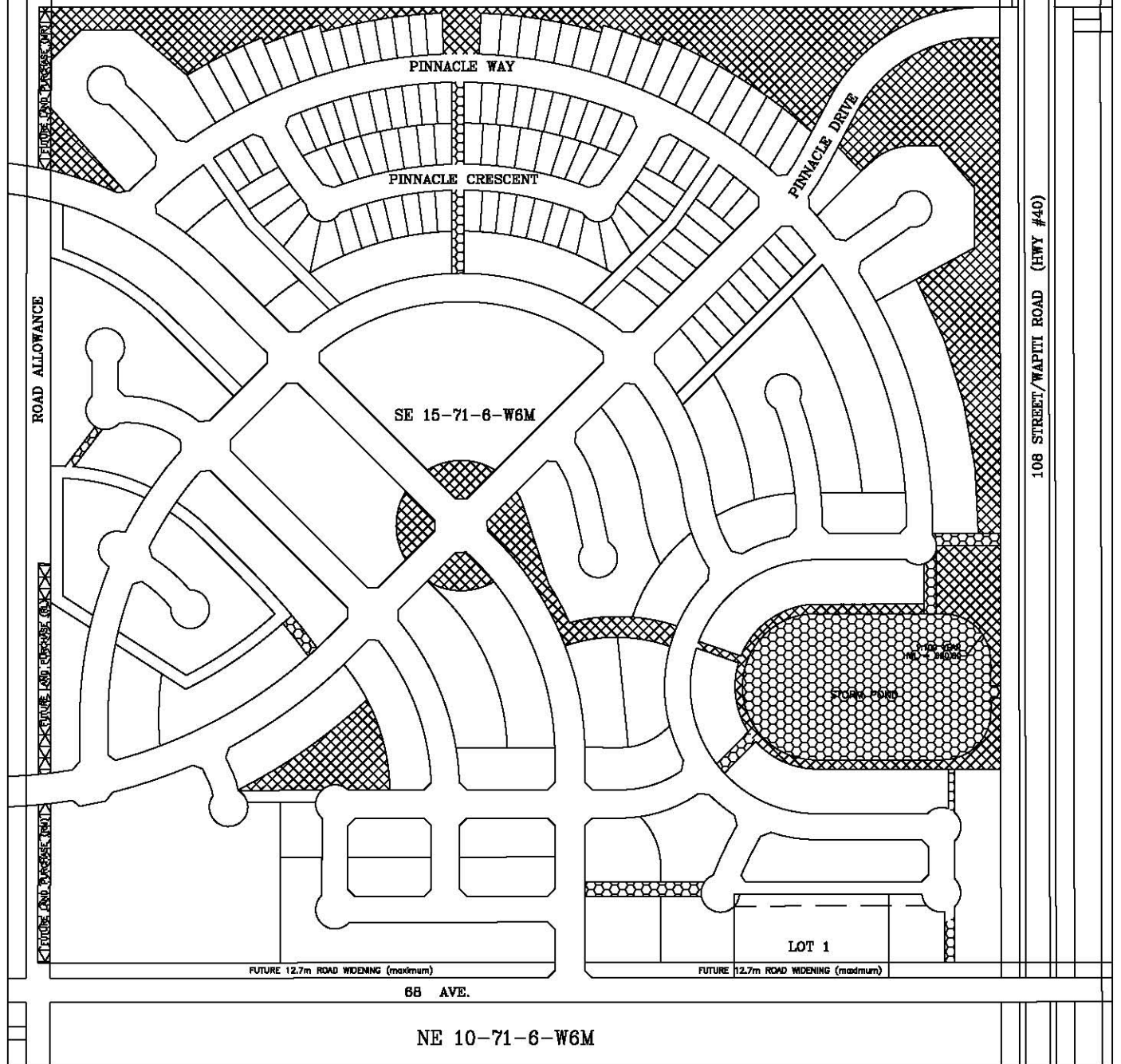
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Bylaw C-1082-02
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FUTURE LIGHT INDUSTRIAL
NE 15-71-6-W6M

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932 039 485



legend

-  municipal reserve / park
-  public utility lot

PINNACLE RIDGE AREA STRUCTURE PLAN map 4

Municipal Reserve Plan

ASD PLANNING SERVICES / GPEC CONSULTING LTD.

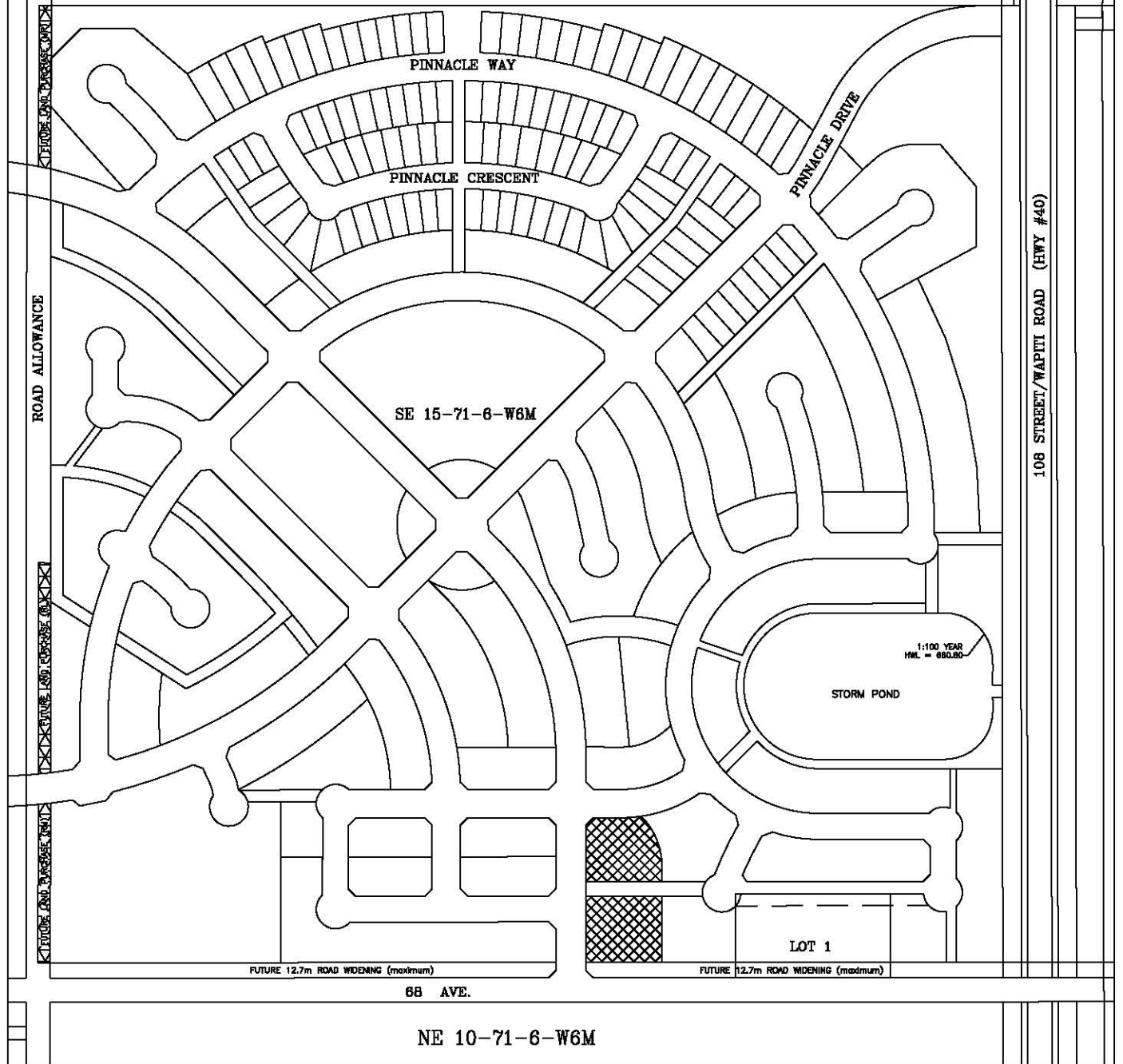
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Bylaw C-1082-02
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FUTURE LIGHT INDUSTRIAL
NE 15-71-6-W6M

C of T
932 039 485



legend

 local commercial

PINNACLE RIDGE
AREA STRUCTURE PLAN
map 5

Commercial Use Plan

ASD PLANNING SERVICES / GPEC CONSULTING LTD.

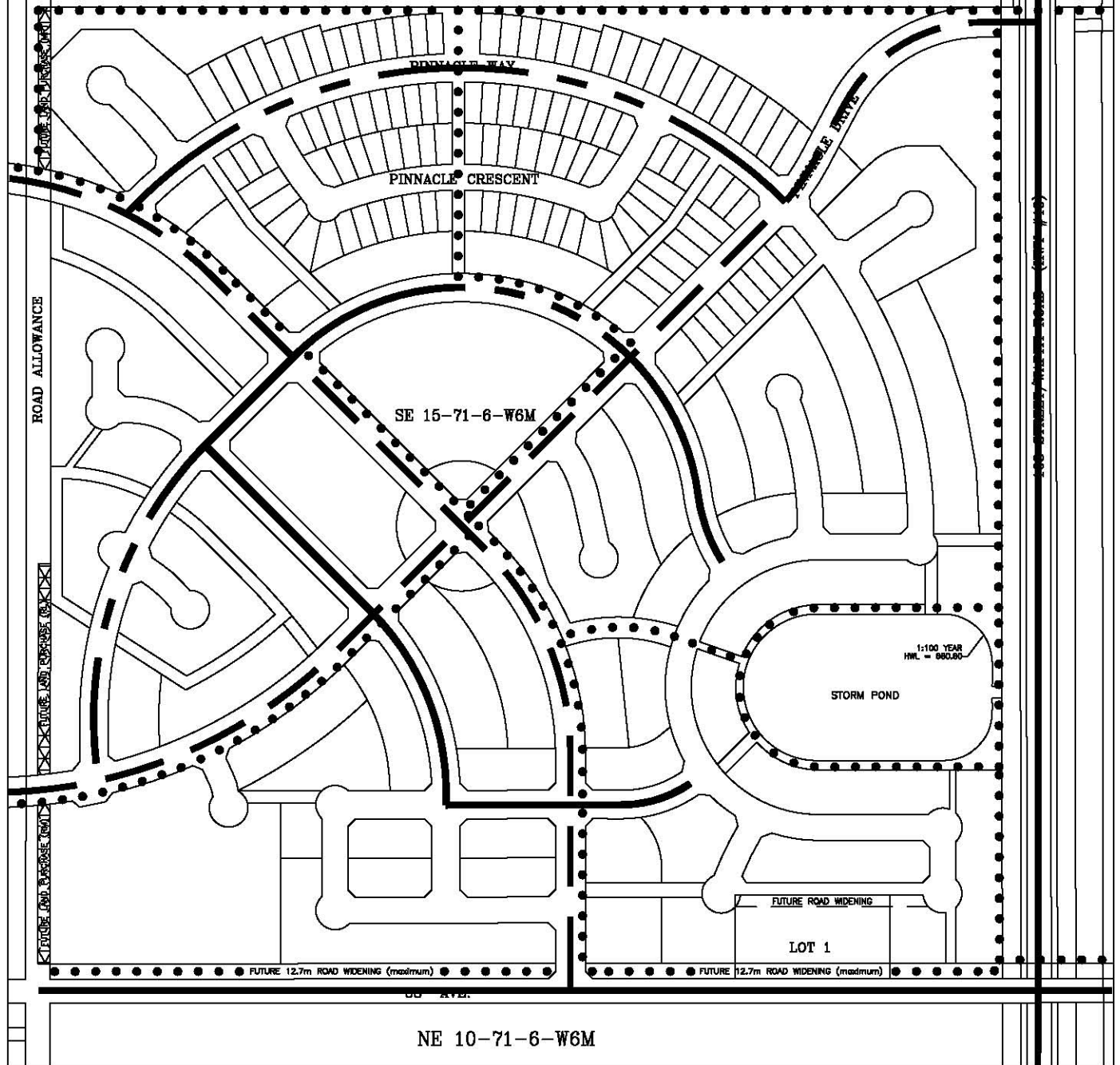
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Bylaw C-1082-02
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FUTURE LIGHT INDUSTRIAL
NE 15-71-6-W6M

C of T
932 039 485



legend

- arterial
- - major collector
- minor collector
- local / lane
- pedestrian linkages

PINNACLE RIDGE AREA STRUCTURE PLAN map 6

Roads / Linkages Plan

ASD PLANNING SERVICES / GPEC CONSULTING LTD.

SCALE 1:5,000

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FUTURE LIGHT INDUSTRIAL
NE 15-71-6-W6M

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932 039 485



legend

- proposed future transit route
- - proposed short-term transit route

PINNACLE RIDGE AREA STRUCTURE PLAN map 7 Transit Plan

ASD PLANNING SERVICES / GPEC CONSULTING LTD.

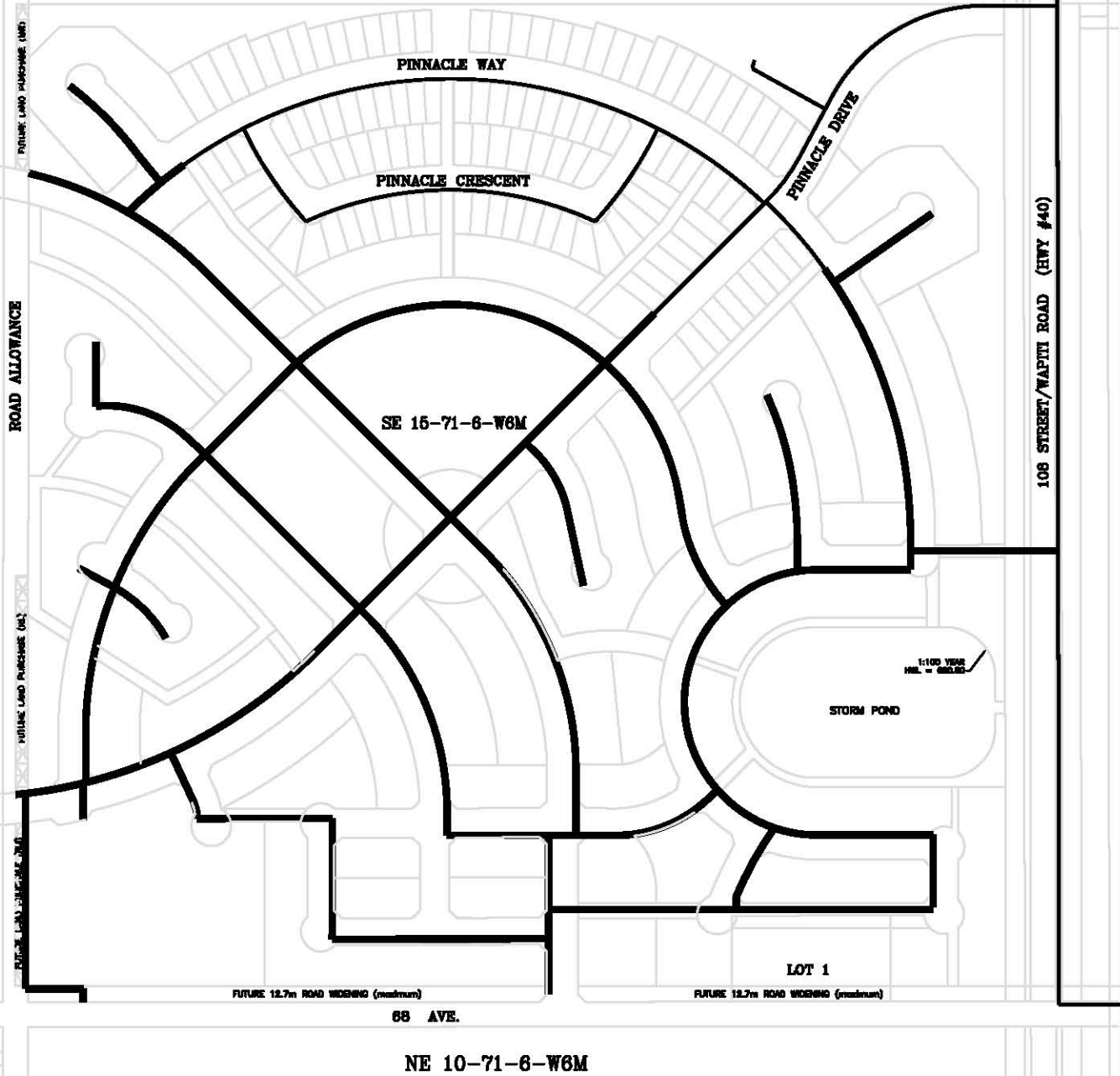
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Bylaw C-1082-02
December 4, 2006



FUTURE LIGHT INDUSTRIAL
NE 15-71-6-W6M

C of T
932 039 466



legend

- proposed watermain
- existing watermain

PINNACLE RIDGE AREA STRUCTURE PLAN map 9

Water System Plan

ASD PLANNING SERVICES / GPEC CONSULTING LTD.

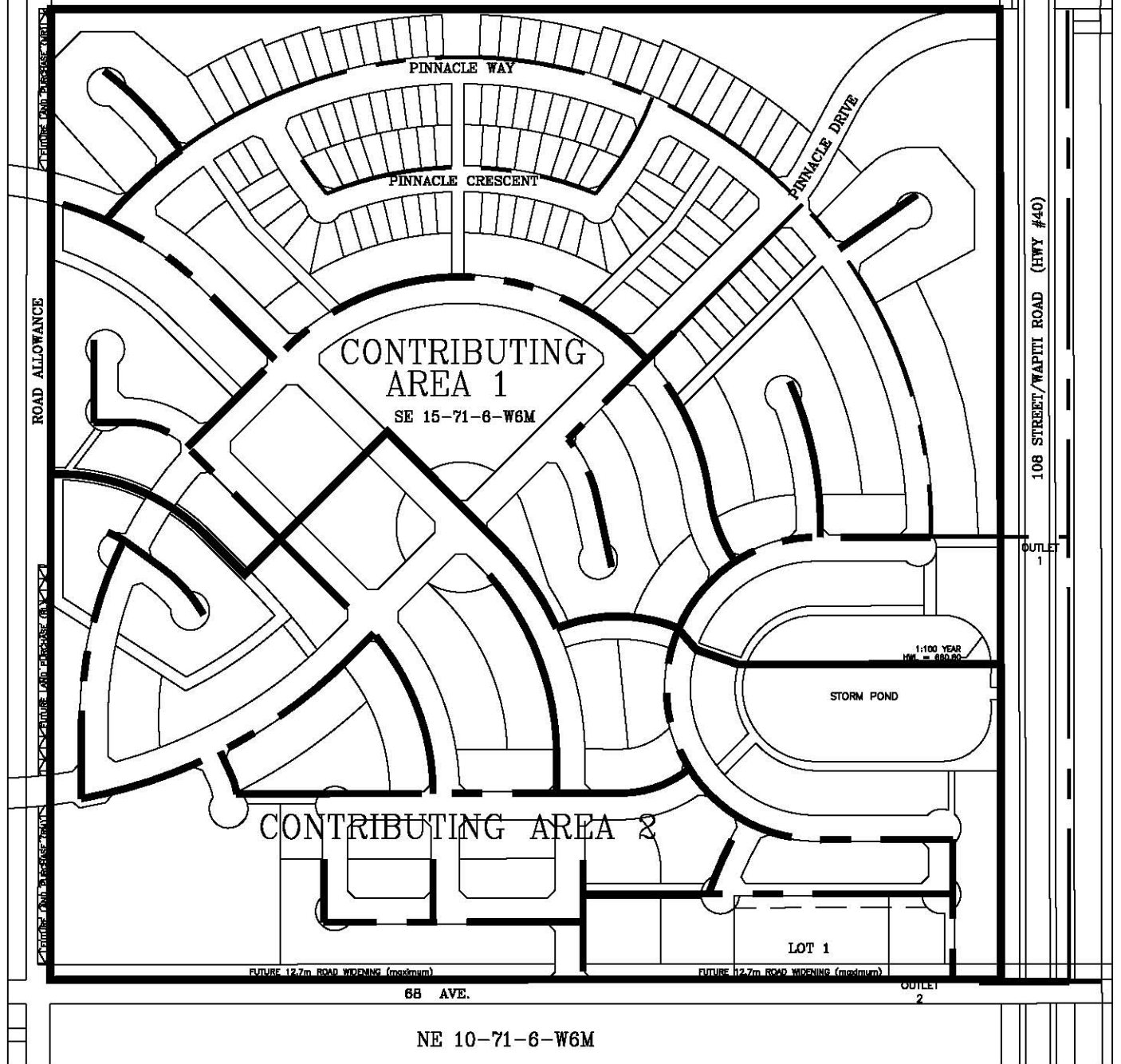
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Bylaw C-1082-02
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FUTURE LIGHT INDUSTRIAL
NE 15-71-6-W6M

C of T
932 039 485



legend

- proposed sanitary sewer
- existing sanitary sewer
- contributing area boundary

PINNACLE RIDGE AREA STRUCTURE PLAN map 10

Sanitary System Plan

ASD PLANNING SERVICES / GPEC CONSULTING LTD.

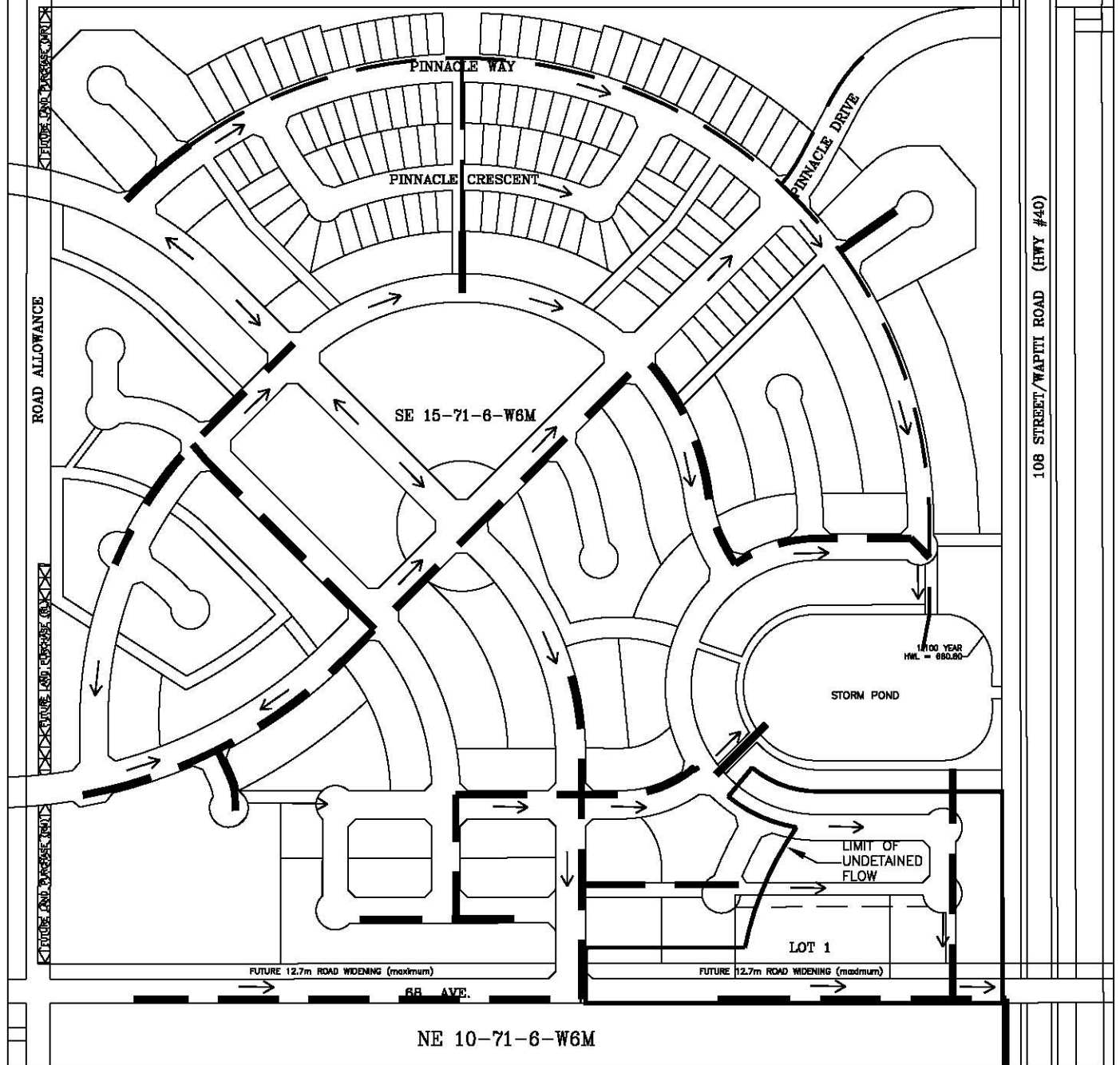
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Bylaw C-1082-02
December 4, 2006







FUTURE LIGHT INDUSTRIAL
NE 15-71-6-W6M

C of T
932 039 485



legend

-  proposed storm sewer
-  existing storm sewer
-  major overland drainage
-  boundary of undetained flow

PINNACLE RIDGE AREA STRUCTURE PLAN map 11

Storm Sewer Plan

ASD PLANNING SERVICES / GPEC CONSULTING LTD.

SCALE 1:5,000

Bylaw C-1082-02

December 4, 2006

