

West Park Extension

Neighbourhood Area Structure Plan

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1.0 INTRODUCTION

1.1 Purpose

The West Park Extension Neighbourhood Area Structure Plan establishes a comprehensive and integrated land use and servicing strategies to guide future development of the City of Red Deer's West Park Extension neighbourhood. The Plan identifies the intended land uses, and delineates environmental features, open spaces, and public, social and recreational facilities. It also defines servicing strategies for water, sanitary sewer, storm sewer and road infrastructure as well as establishes a development phasing strategy that contributes to efficient and cost-effective development.

1.2 Background

The West Park Extension Neighbourhood Area Structure Plan is based on the direction and requirements of the City of Red Deer's *Municipal Development Plan, Land Use Bylaw, Community Services Master Plan, Transportation Plan, Planning & Subdivision Guidelines*; input from the Parkland Community Planning Services, City of Red Deer Recreation, Parks & Culture Community Services and City of Red Deer Engineering; and several technical reports, including a downstream traffic assessment, storm water management study, and ecological profile. The Plan also benefits from extensive public input and consultation with the voluntary West Park Extension Steering Committee, and from consideration of neighbourhood and local housing market conditions.

2.0 SITE CONTEXT AND DEVELOPMENT CONSIDERATIONS

2.1 Setting

The West Park Extension neighbourhood consists of a 63.24 hectare ± (156.26 acre ±) parcel located in the City of Red Deer's southwest quadrant (See **Figure 1**). The parcel, commonly known as the "Cronquist Lands," is bounded to the north by Cronquist Drive, the east by 60th Avenue, the south by 32nd Street, and the west by Highway 2. Lands to the north and west of the neighbourhood, including Heritage Ranch and a small rural

acreage subdivision, are located in the County of Red Deer. To the east lies the long established City of Red Deer West Park neighbourhood, consisting of single and multi-family residential development serviced by a neighbourhood shopping mall, schools and other community services.

2.2 Legal Description

The Cronquist lands are legally described as portions of NE, NW and SE ¼ Section 7, Township 38, Range 27, west of the 4th Meridian. The Certificates of Title are contained in Appendix A. **Figure 2** illustrates the boundaries and the two legal easements held against the property, including a hydro right-of-way held by TransAlta (R/W Plan 4224 K.S. and R/W Plan 4662 H.W.) and road plan established prior to the most recent highway improvements.

2.3 Site Description

Initially, the site is primarily used for agricultural purposes with a majority of it under active cultivation. There has been no residential development to date. Future development is influenced by a number of site features, as illustrated in **Figure 3** and described below.

2.3.1 Environmental Features

A permanent and mature wetland is located along the southern perimeter of the site. It functions as a natural catchment area for surface water runoff and is one of the more important and populated waterfowl habitats within the Red Deer municipal boundary. It is also home to many other bird, insect, mammal and plant species. The *Ecological Profile of the West Park Natural Area* study recommends preservation of this natural area as well as buffering it from future residential development. A bike/walking trail located along the buffer is also suggested.

To the north of the wetland is a large naturally treed area, providing habitat to a broad range of birds, insects, mammals, including deer, and plant species. It also serves as a visual and noise barrier to the immediately adjacent Highway 2. The *Ecological Profile* recommends securing its' long term preservation by designating it as a park. Further to the north of the treed area is an area characterized by

mixed grasses and trees, interspersed with smaller temporary and semi-permanent wetlands. These wetlands may be used for detention ponds if required by future development.

Two treed windbreaks are located along Cronquist Drive and 60 Avenue. An abandoned homestead located at the intersection of Cronquist Drive and 60 Avenue is also treed. The *Ecological Profile of the West Park Natural Area* recommends that these trees be preserved.

A large cultivated field is located along the eastern boundary. Although this zone is actively farmed, any drastic modification of its current topography and/or drainage patterns could impact surrounding environmental areas. For this reason, it is recommended that the existing topography be retained where possible.

2.3.2 Topography

The property is generally characterized by gently undulating topography, sloping in all directions from a high point in the north central area, with a maximum grade change of approximately 2 metres. The northwest corner has the lowest elevations. Several areas of high ground measuring up to 5 metres above grade are found in the central portion of the site.

2.3.3 Existing Transportation Network and Access

The main access to the site is via 32nd Street (a major street) in the south. The site may also be accessed from the north via 60th Avenue or Cronquist Drive, to 43rd Street, a designated collector street. 60th Avenue, between 32nd Street and 43rd Street, consists of two travel lanes with no left or right lane turn lanes. The 32nd Street / 60th Avenue intersection at the south end of the site is not signalized. There is no direct access from either the site or Cronquist Drive to Highway 2. The closest access is at 32nd Street.

2.3.4 Servicing

The site can be fully serviced with sanitary sewer, water, stormwater drainage infrastructure and shallow utilities, such as hydro, telephone and gas, from the neighbouring servicing and utility systems.

2.3.5 Power Lines

A high-tension power line runs diagonally across the property from the northeast corner to a midway point along the western boundary. It will not be realigned nor located underground.

2.3.6 Historic Monument

A historic monument signifying the location of the first school in the Red Deer area is located in the northeast corner of the property. While it is generally agreed that the monument does not mark the actual school site location, the intent is to preserve this monument.

3.0 DEVELOPMENT FRAMEWORK

3.1 Statutory Plans

The *City of Red Deer Municipal Development Plan*, adopted by City Council on August 24, 1998 as *Bylaw 3214/98* sets out broad policy framework to guide growth and change in the City. It seeks to maintain a high quality of life for residents by developing well planned and healthy communities, preserving unique natural environments, providing safe, efficient and reliable utility systems and effective transportation systems, promoting economic growth, and providing a balanced and diverse range of social, education, health, recreation and cultural opportunities.

The West Park Extension area is designated for residential use on Map 3 in the *Municipal Development Plan*.

The key objectives identified in the Municipal Development Plan for residential areas are as follows:

- Ensure new residential neighbourhoods contain a variety of housing types;
- Ensure that infrastructure and design standards support affordable housing while still resulting in high quality neighbourhoods;
- Encourage innovation in neighbourhood design and housing, and
- Provide for special housing and lifestyle needs.

The Municipal Development Plan also establishes a maximum residential density of 45 persons per gross hectare for new communities.

3.2 Area Structure Plans

The site is presently not subject to an area structure plan.

3.3 Land Use Bylaw

The site is designated A1, Future Urban Development District, in the *City of Red Deer Land Use Bylaw*. The general purpose of this designation is to:

Ensure that development on lands required for future development is restricted to ensure that future development may proceed in an orderly and well-planned fashion, in keeping with the intent of the General Municipal Plan.

The site will require re-designation to an appropriate land use designation prior to urban development.

3.4 Planning & Subdivision Guidelines

Future development is shaped by provisions of the *City of Red Deer's Planning & Subdivision Guidelines* document. The Guidelines are intended to establish sound planning principles and contribute to orderly growth of the community. In addition to

addressing such design elements as street layout and street classification, the Guidelines identify the potential development of community facilities including:

- One site of approximately 0.12 hectares (0.3 acres) for the possible development of a social care residence or senior's residence site, preferably located on collector roads on a corner site where higher parking requirements can be satisfied. It is advised that the site be secured for a minimum of three months after advertising, but if it is not purchased for either of the specified uses then it may be used for conventional residential development. The social care site was advertised in 2007 and no interested parties came forward. As such the social care site and the former R-2 (multi-family) site have been amalgamated into a residential R1 & R1A site.
- One 0.405 hectare (1 acre) church site, preferably located on collector roads on a corner site where higher parking requirements can be satisfied. Similarly, the site should be kept for a minimum of six months after advertising, but it may be used for conventional residential development if it is not purchased for a church. The church site was advertised in 2007 and no interested parties came forward. The church site is being developed into five standard R1 lots.

3.5 Neighbourhood Area Structure Plan

The City of Red Deer requires a Neighbourhood Area Structure Plan (NASP) to provide planning and development strategies for large areas of land prior to development. The NASP's are governed by the *Municipal Government Act* and must reflect other guidelines and/or statutory documents established as a policy of Council such as the Municipal Development Plan. These Neighbourhood Area Structure Plans typically address land use, transportation, social facilities, servicing and staging as well as any significant site-specific matters.

4.0 DEVELOPMENT PROPOSAL

The West Park Extension neighbourhood development concept (**Figure 4**) is based upon the community and developer input, City policies, site characteristics, edge conditions and market indicators. The key components are neighbourhood structure, land use density and population, open space, transportation, servicing and phasing.

4.1 Development Concept

The vision for West Park Extension is a comprehensively planned residential community with an emphasis upon integrating land uses, open space connectivity, land use efficiency and innovation. The key urban design and land use planning principles guiding the Plan include:

- Housing Variety
 - A range of single family housing product intended to accommodate diverse age groups and lifestyles
- Comprehensive Open Space
 - Open space connectivity featuring natural and manmade open space and park elements
- Sensitive Interface with Adjacent Communities
 - Designing edge conditions to complement existing communities
- Efficient Transportation and Servicing Networks.

The vision and guiding principles reflected in the development concept evolved through a planning process that included a balance of community and technical input.

A key component of the Concept Plan is the proposed closure of a portion of 60th Avenue along the east boundary of the Plan (see **Figure 5**). This notion evolved from a series of ‘design charrettes’, which included a Resident Steering Committee established

for that purpose. The proposed closure and internal traffic network is considered the most suitable solution to address:

- Access between the new Extension area and the existing community of West Park,
- Access to the existing community of West Park,
- Residents' concerns over increasing external through traffic, and
- The direction of Extension traffic to the nearest major street (32nd Street).

The closed portion of 60th Avenue between 59th Avenue Crescent and the entry road near 32nd Street at the south will be incorporated into the new development as shown in **Figure 6**. As illustrated, an additional five metre (16.4 foot) open space strip will be included to supplement the existing buffer abutting the eastern boundary of the 60th Avenue right-of-way. A landscaped pedestrian trail will be incorporated in this space and will form part of the overall pedestrian network. Also, the widened open space corridor will serve as a physical separation between the existing and proposed community.

The concept provides a central landscaped “grand boulevard”, which serves as a primary entry from Cronquist Drive and 43rd Street to the neighbourhood (see **Figure 7**). This landscaped boulevard treatment is intended to transform an existing overhead power line into a positive element of the community design. This central feature connects to the natural central park, the latter serving as a terminus to the community entry. The proposed landscaping within the median is intended to include shrubs and other landscape elements that are compatible with a utility right-of-way.

A secondary entry consisting of a divided roadway with landscaped median is included in the southeast, connecting to 32nd Street. This roadway is flanked on either side at the entry by naturalized parkland including wetlands, resulting in an aesthetically pleasing entry to the community from the south as well. This roadway eventually links to the Grand Boulevard near the central park and ultimately Cronquist Drive. It will form the internal collector street system.

The overall concept provides for distinct, yet integrated residential pods largely focused upon the collector streets. This pattern accommodates phasing of development and provides opportunities for product diversity.

The concept consists of a mix of relatively low and medium density residential uses, parks, natural areas and community facilities. The land use distribution is shown in **Table 1**. While the majority of the site is allocated for residential purposes, approximately 23 per cent of the site will be retained as open space including municipal reserve, environmental reserve and public utility lots.

A range of housing types and lot sizes provides opportunities for choices within the neighbourhood. Single family is the neighbourhood's predominant residential form providing potential homeowners with a variety of different lot sizes.

The concept plan also provides opportunities for walkout basements. The potential locations are identified in **Figure 4**.

The proposed land use allocation is illustrated in **Table 1**.

TABLE 1 LAND USE ALLOCATION

	Hectares± (Ac±)		Percentage
Total Neighbourhood Area	63.24	(156.26)	
Environmental Reserve	4.71	(11.64)	7.45
Developable Area	58.53	(144.62)	100
Land Use			
Single Family – Large Lots	3.27	(8.08)	5.59
Single Family – Standard Lots *	25.58	(63.21)	43.71
Single Family – Narrow Lot	3.32	(8.20)	5.67
Secondary Suite Lots	0.93	(2.29)	1.58
Single Family – Duplex **	1.23	(3.04)	2.10
Municipal Reserve	6.54	(16.15)	11.18
Streets and Lanes *	14.71	(36.35)	25.13
Public Utility Lots	2.95	(7.30)	5.04

Note: Former multi-family site has been changed to single family standard lots and single family duplex lots.

* Previous church site has been converted to lane and single family-standard lots.

** Previous social care site has been converted to single family standard lots and single family duplex lots.

Traffic will move efficiently and safely through the neighbourhood on a curvilinear road network that emphasizes cul-de-sac access to single family residences. The road network is supported by a complete rear lane system with exception of the areas backing Highway 2. Connections to the existing West Park and its local road network are strategically located to optimize efficiency of movement and safety, and to minimize through traffic.

A significant natural area along the western boundary is provided for recreation purposes and buffering of highway noise. Similarly, the existing natural wetland found at the southern end of the site is protected as habitat but is also upgraded for stormwater detention purposes.

It should be noted that the smaller wetland and associated park area located to the east of the 60th Avenue alignment is not within the site boundaries, even though each of these contribute to the neighbourhood. As such, they have not been included in the Neighbourhood Structure Plan area.

4.1.1 Single Family Detached

There are five single family detached lot types being proposed, all of which fall under the City of Red Deer's Residential Low Density District (R1), Residential Semi-Detached District (R1A) and Residential Narrow Lot District (R1N). Each of the lot types is described below.

Standard A: The typical and minimum widths of standard A lots are 15.2 metres ± (49.9 feet ±) and 12.8 metres ± (42.0 feet ±) respectively. Standard A lots account for 457 of the 652 (approximately 70 percent) dwelling units anticipated on the site,

the highest proportion of any residential land use. They are found throughout the neighbourhood.

Secondary Suite: Similar in lot dimensions to Standard A, these lots are located in Phases 5 & 12 of the subdivision. These lots account for 22 of the 652 dwelling units anticipated on the site.

Standard B: At 16.8 metres \pm (55 feet \pm) wide, standard B lots are wider than standard A lots. They are found along the neighborhood's eastern boundary where they back onto lots with similar dimensions in the adjoining established neighbourhood. They are intended to enhance compatibility and cohesiveness between existing and future residential development.

Large: Large lots are characterized by a 22.9 metre \pm (75 feet \pm) width, and lot depths of 48.8 meters \pm (160 feet \pm) and 40 metres \pm (132 feet \pm). Located along the south side of Cronquist Drive these lots are intended to enhance compatibility with larger suburban lots located on the north side of the road.

Narrow: Narrow lots are characterized by a minimum lot width of 10.5 metres (34.1 feet) and rear drive garages. They are located near the center of the neighbourhood in close proximity to major neighbourhood roads and park and natural areas.

Duplex: Duplex lots are characterized by three different lot widths; 9.8m+, 9.0m and the minimum width being 7.73 metres. All duplex lots are located in the North West part of the subdivision, Phase 12, in the former multi-family site. These lots account for 48 of the 652 dwelling units anticipated on the site.

4.2 Development Density

The population density calculation is summarized in **Table 2**. Table 2 also shows the estimated number of dwelling units and associated population for each of the residential land uses when the neighbourhood is fully developed. Single family Standard A lots account for the majority of dwelling units (457) and population (1554) as compared to the other residential land uses.

TABLE 2 ESTIMATED POPULATION DENSITIES

Land Use	Area Hectares (Ac)	Number of Dwelling Units	Number of Persons/ Unit	Total Population (Maximum)	Density Units/Ha (Ac)
Single Family, Large Lot	3.27 (8.08)	30	3.4	102	9.17 (3.71)
Single Family, Standard A Lots	25.58 (63.21)	457	3.4	1554	18.41 (7.45)
Single Family, Standard B Lots		14	3.4	48	
Single Family, Narrow Lots	3.32 (8.20)	81	3.4	276	24.40 (9.88)
Single Family, Secondary Suite Lots	0.93 (2.29)	22	5.1	113	23.66 (9.61)
Single Family, Duplex Lots	1.23 (3.04)	48	3.4	164	39.02 (15.79)
Streets, Lanes, P.U.L.'s, M.R. and E.R.	28.91 (71.44)	0	0	0	0
Total *(Based on TDA) (No church or social care site*)	58.53 (144.63)	652	-	2257	11.14 (4.51)

* - TDA (Total Development Area) is equal to the gross area minus the Environmental Reserve (ER).

The relatively low estimated population density can be attributed to the amount of park and natural areas that are provided and the quantity of lower density single family detached development.

It should be noted that the calculations are based on the church and community care sites being developed for residential purposes.

4.3 Parks and Open Space

The parks and open space system includes several different types of parks and an extensive pedestrian / cycling trail system connecting parks and neighbourhoods. The park and trail systems represent important community amenities and focal points for new West Park Extension residents as well as those from neighbouring communities. Approximately 11 per cent of the site is provided as municipal reserve, satisfying the *Municipal Government Act* and City of Red Deer requirements. It is comprised of a balance of natural areas, local play areas, buffer and linear parks. The percentage increases to approximately 23 per cent when the environmental reserve areas and public utility lots such as the storm detention facility are included.

4.3.1 West Area Park

The neighbourhood's largest and most significant park is the linear park that runs the length of neighbourhood's western boundary. It includes a 3.42 hectare \pm (8.46 acre \pm) natural park located at approximately the midway point along the boundary (see **Figure 8**). The western linear park system connects the northern and southern detention ponds to form a corridor of public use open space encompassing the entire western and southern boundaries of the neighbourhood.

The western boundary park serves several important purposes by offering excellent outdoor amenity and recreation opportunities to the community, protecting important tree stands and wildlife habitat, and acting as a noise and visual barrier to Highway 2. An approximately 30 metre (100 ft.) wide, landscaped berm complete with sound attenuation faculty, will be constructed adjacent to portions of the highway right-of-way for added noise and visual abatement. The design details of the berm are illustrated in **Figure 9**.

4.3.2 East Area Park

A second linear open space incorporating a 2.5 metre regional path will be created along the 60th Avenue alignment (see **Figure 6**). It connects the historical northeast feature park at the intersection of Cronquist Drive and 60th Avenue in the

north to the combination wetland / storm detention pond found in the south. The school site monument is the focus of the northeast feature park. This park and monument site will be enhanced with paved walking areas and seating facilities as illustrated in **Figure 10**. The feature park is also connected to the storm detention facility located to the southwest and ultimately to the Grand Boulevard.

4.3.3 Grand Boulevard

The high-tension power line corridor has been integrated into the neighbourhood park and open space system by serving as a median for the main entry road (see **Figure 7**). Special design treatments, such as extensive landscaping are intended to improve its visual and aesthetic quality and establish the Grand Boulevard as a neighbourhood gateway.

4.3.4 Local Parks

A 0.21 hectare \pm (0.53 acre \pm) “tot lot” in the east central area (see **Figure 10**) is provided as a local play and amenity area.

4.3.5 School Site

A school site is not required in West Park Extension as there are three existing schools in the adjoining West Park neighbourhood, including West Park Elementary, West Park Middle, and St. Martin de Porres.

4.4 Environmental Reserve

The predominant environment feature in the neighbourhood is the 4.71 hectare \pm (11.64 acre) permanent and mature wetland found along the southern perimeter of the site. This feature, which comprises approximately 7.5 percent of the site, will be retained as part of the open space and will incorporate a trail system, linking it to both the east and west park system (see **Figure 11**). This wetland will also function as a critical component of the site’s stormwater drainage system.

4.5 Social Facilities

The original Neighbourhood Area Structure Plan provided for a 0.12 hectare \pm (0.30 acre \pm) social housing/day care/retirement home facility. The social care site was advertised in 2007 and no interested parties came forward. This site will become part of the new R1 & R1A site as shown on **Figure 4**.

4.6 Church Site

A 0.40 hectare \pm (1.0 acre \pm) church site was identified in the original Neighbourhood Area Structure Plan. It was located in the southeast corner of the neighbourhood. The church site was advertised in 2007 and no interested parties came forward. As per the original NASP, this site has been developed as five single family units.

4.7 Public Utilities

In addition to the environmental reserve wetland area within the Plan boundary and the one to the east of 60th Avenue, two storm detention facilities are provided to service the neighbourhood. A large, 2.10 hectares \pm (5.2 acres \pm) site, located in the northeast sector of the neighbourhood just east of the Grand Boulevard, will be supplemented by 0.23 hectares \pm (0.58 acres \pm) of municipal reserve along the east and north side. The combined area will be landscaped and developed as an amenity for the neighbourhood as well as a storm sewer facility (see **Figure 10 and Section 6.3**).

A small 0.35 hectares \pm (0.87 acres \pm) wetland in the northwest corner will also be retained as part of the open space and storm water system.

5.0 TRANSPORTATION

A West Park Extension Traffic Impact Study was prepared by Finn Transportation Consultants in November 2001 and was submitted under separate cover. This study addresses both the external and internal transportation networks and concludes that both networks can adequately accommodate the anticipated traffic generated by the West Park Extension.

5.1 Internal Road Network

Road connections to the external road network are strategically located. An internal road hierarchy conveys traffic efficiently and safely within the neighbourhood, while cul-de-sacs provide access to many of the single family residences.

As outlined in Section 4.1, the proposed neighbourhood structure plan closes a portion of the existing 60th Avenue. This closure is intended to provide for more continuity between the existing community and the new neighbourhood and will eliminate the current shortcutting traffic on 60th Avenue. A small portion of 60th Avenue between 59th Avenue Crescent and Cronquist Drive will remain open to accommodate local traffic movement.

The intent of the proposed internal roadway network is to:

- Adequately serve the existing and future residents of West Park;
- Largely eliminate shortcutting traffic;
- Provide connectivity between the existing and future neighbourhoods, and
- Provide for a possible transit route.

The Plan provides a central landscaped “grand boulevard” which serves as a primary entry from Cronquist Drive and 43rd Street. A detail of this collector standard roadway is illustrated in **Figure 12**. A second entry consisting of a divided residential collector with landscaped median transitioning into an undivided collector road is provided in the southeast connecting to 32nd Street. In order to meet the design standards for this roadway additional land will, in all likelihood, be required on the east side near the intersection with 32nd Street. A detail of these roadways is illustrated in **Figure 13**. This roadway extends northward to link with the Grand Boulevard. These two roads together form the internal collector street system.

The remaining internal roadway system will be comprised of undivided and divided local residential streets, details of which are illustrated in **Figure 14**.

In order to maintain the integrity of a “rural” large lot interface between existing residences along the north of Cronquist Drive and future residences to the south, the Plan proposes that Cronquist Drive, west of its intersection with Grand Boulevard, be retained as a rural cross-section. Given the large lot sizes, driveways on to this roadway will be minimal. A detail of this roadway is illustrated in **Figure 15**.

Given market aspirations in Red Deer and preference for rear lanes, rear lanes with utility servicing are provided throughout the majority of the neighbourhood.

5.2 Pedestrian Network

An integral component of the neighbourhood structure plan and the transportation system is an emphasis on a pedestrian network comprised of walking and cycling trails, open spaces, sidewalks and walkways. The proposed network is intended to serve both recreation and transportation needs of future residents by linking existing and future natural areas and parks to form an integrated open space network. Particular emphasis is placed upon the trail system within the east and west boundary parks. Specifically, a 2.5 metre asphalt regional path, connecting 32nd Street to the south with the existing regional path along Cronquist Drive to the north, is proposed along the east side of the neighbourhood as illustrated in **Figure 4**. A 2.5 metre regional path, connecting the central park area and Cronquist Drive, is also proposed along the south side of the Grand Boulevard. These are intended to not only connect key areas within the West Park Extension area such as the existing pathways, the wetlands and the parks, but also the existing community to the east. The proposed system is further enhanced by strategically locating walkways, all of which will contribute to pedestrian movement and enjoyment within the neighbourhood.

5.3 Public Transit

In keeping with the City of Red Deer policy to supply transit service to all sectors of the community, the proposed collector system is anticipated to accommodate a future transit route. Given the location of the collector/bus route, all residences, with the exception of about 5 to 8 homes in the far northwest corner, will be within the 450 metre maximum walking distance.

5.4 Noise Considerations

An updated traffic noise assessment for West Park Extension was carried out by Finn Transportation Consultants in March 2002 and submitted under separate cover. The study concluded that a continuous berm/sound wall combination from the northwest corner to approximately 300 metres (985 feet) south of the central park will adequately protect those residential units along Highway 2. The required height for the berm/sound wall combination is 3.6 metres (11.8 feet), with the exception of the southerly 170 metres (558 feet), which will need to be stepped up to 4.2 metres (13.8 feet).

6.0 MUNICIPAL SERVICING

The servicing of West Park Extension will involve extending existing water, sanitary sewer, storm sewer and shallow utility servicing from the existing West Park Development to the east. Also, connections to the existing storm drain system west of the site, along Highway 2, will be required.

6.1 Water Distribution

The water distribution system, required to service the subject quarter section, is a direct extension of the existing water main distribution system, located in the existing West Park Development. **Figure 16** conceptually illustrates the proposed routing of the water distribution system within the proposed development.

Connections will be made to the existing water system along the eastern boundary at the proposed extension, including a line to extend up Cronquist Drive and connect near the intersection of 57th Avenue and 43rd Street, as illustrated in **Figure 16a**. Service connections for possible future development to the north and southeast will also be provided.

Computer water modeling will be utilized to evaluate the actual water main sizes, when the detailed serviceability study is prepared for the City of Red Deer.

All facilities required for the water distribution system are to become the responsibility of the City of Red Deer to maintain, after a two-year maintenance period. These water mains will be designed in accordance with the *City of Red Deer Design Guidelines*.

6.2 Sanitary Sewer

The sanitary sewer system is a direct extension of the existing sanitary sewer system located in the existing West Park Development. The proposed sanitary system will be entirely a gravity draining system. **Figure 17** illustrates the proposed routing of the sanitary system throughout the proposed development.

The development is to connect to the existing sanitary system, near the intersection of 57th Avenue and 43rd Street, which is approximately 650.0 metres into the existing West Park Development. A proposed new sanitary trunk will then be extended up Cronquist Drive to the northeast corner of the proposed development. In order to complete this trunk extension, and facilitate the installation of the proposed sanitary piping, the pavement and concrete curbs on Cronquist Drive will have to be removed and then replaced. Every attempt will be made to preserve the trees within the north and south boulevards of Cronquist Drive. Also, existing street lighting will have to be temporarily removed and then reinstalled to complete this work. **Figure 18** illustrates the proposed sanitary sewer extension up Cronquist Drive.

The majority of the sanitary pipes will be 200mm, with the exception of the 300mm trunk to be routed up Cronquist Drive and a few 250mm trunk lines within the development. The precise size of all the sanitary lines will be provided to the City of Red Deer when the detailed serviceability study is completed.

All facilities required for the sanitary sewer system are to become the responsibility of the City of Red Deer to maintain, after a two-year maintenance period. These sanitary lines will be designed in accordance with the *City of Red Deer Design Guidelines*.

6.3 Storm Water Management

Storm water management plans that are progressive in nature and amount of detail will be developed for the site to minimize the risk of flooding and potential property damage and

reduce impacts on the Red Deer River as the ultimate receiving water body. An urban conveyance system is envisioned that not only conveys and accommodates runoff up to and including a 1:100 year event, but also provides enhanced water quality and added value by incorporating a wide variety of Best Management Practices. The resulting “water-scaped” drainage system will be fully integrated in the overall landscaping and green linkages thus providing passive recreation and preservation of existing habitat and/or generation of new habitat.

The subdivision is to be serviced by three storm water management facilities that are strategically distributed across the subdivision. These facilities will consist of wetlands and/or naturalized wet ponds, preserving the existing wetland in the southwest corner of the site as much as possible. A combination of storm sewers and overland drainage routes will convey the runoff from the development into the three facilities.

The area containing the southwest facility will be dedicated as environmental reserve. This facility is to service an area of approximately 40 hectares (99 acres) that includes external areas draining into the site. It is to discharge via an existing culvert running beneath Highway 2 into the ditch located on the west side of Highway 2 along the Canadian Pacific Railway (CPR) tracks, discharging ultimately into the Red Deer River. A naturalized trapped low in the northwest corner of the site, also to be dedicated as public utility lot, is to service an area of approximately 8 hectares (19.8 acres). This depression will be equipped with a wet cell to provide water quality enhancement. It is also to discharge via an existing culvert running beneath Highway 2 into the CPR ditch. The balance of the site and some external area discharging as overland flow into the site from the east comprising a total area of approximately 35 hectares (86.5 acres), will be serviced by a constructed wetland/naturalized wet pond located in the northeast corner of the site. This facility will discharge into a storm sewer line at Cronquist Drive and 60th Avenue (see **Figure 19**). The storm sewer will run along Cronquist Drive and tie into the existing storm sewer trunk at Cronquist Drive and 57th Street, discharging ultimately into the Red Deer River.

The area taken up by the storm water management facilities amounts to about 7.0 hectares (17.3 acres) or 11.1 per cent of the overall area. With this percentage adequate water quality enhancement will be provided while safeguarding the long-term

sustainability of the facilities. In addition, minimizing side slopes and fluctuations in water level during severe storm events will preserve public safety.

A Master Drainage Plan has been prepared and submitted under separate cover addressing the storm water conveyance system. The Plan deals with the location and type of storm water management facilities required; the location of outfalls to the Red Deer River; the presence of Best Management Practices to enhance the water quality of the runoff discharged to the Red Deer River; and erosion and sediment controls. Preliminary storage requirements and off-site discharge rates are included. This document was submitted to the City of Red Deer, County of Red Deer, Canadian Pacific Railway and Alberta Environment for approval. The storm water conveyance system, storm water management facilities and BMPs, and storm outfalls will be designed to City of Red Deer, Canadian Pacific Railway and Alberta Environment standards. Detailed drawings for servicing each development cell will be provided to the City as part of the approval process. Drawings will be supported by a detailed Serviceability Report that details the operation of any facilities or BMPs, and verifies the operation of the drainage system versus City and provincial guidelines.

Figure 20 shows the proposed overland Drainage Pattern for this development, while **Figure 21** shows the proposed storm sewer routing for this project.

6.4 Shallow Utilities

The City of Red Deer's Electric Light & Power Department, Telus Communications, Shaw Cable and ATCO Gas, have all been contacted regarding the proposed West Park Extension. All of the franchise utilities have been advised that there is adequate capacity, in the general area, to provide servicing to this project. The utility companies will revise and address the servicing alternatives in more detail, during the circulation and review of the Neighbourhood Area Structure Plan.

6.5 Cronquist Drive Trunk Extension

As is detailed previously, underground service trunk lines are to be extended along Cronquist Drive to the intersection at 57th Avenue and 43rd Street. The storm, sanitary and water mains would be installed together as shown in **Figure 21a**. The existing road structures would be removed and reconstructed after the extensions are complete. The existing trees in the boulevards will be maintained and the boulevards reseeded. Every reasonable effort would be made to complete the work in an efficient and timely manner to minimize disruption to the residents in the area.

7.0 PHASING

Figure 22 illustrates the preliminary concept for phasing. The present location of utilities dictates the initial few phases of development. Market conditions will influence the actual phasing of the development.

*APPENDIX A Concept Images of
Built Environment*

WEST PARK EXTENSION AREA STRUCTURE PLAN

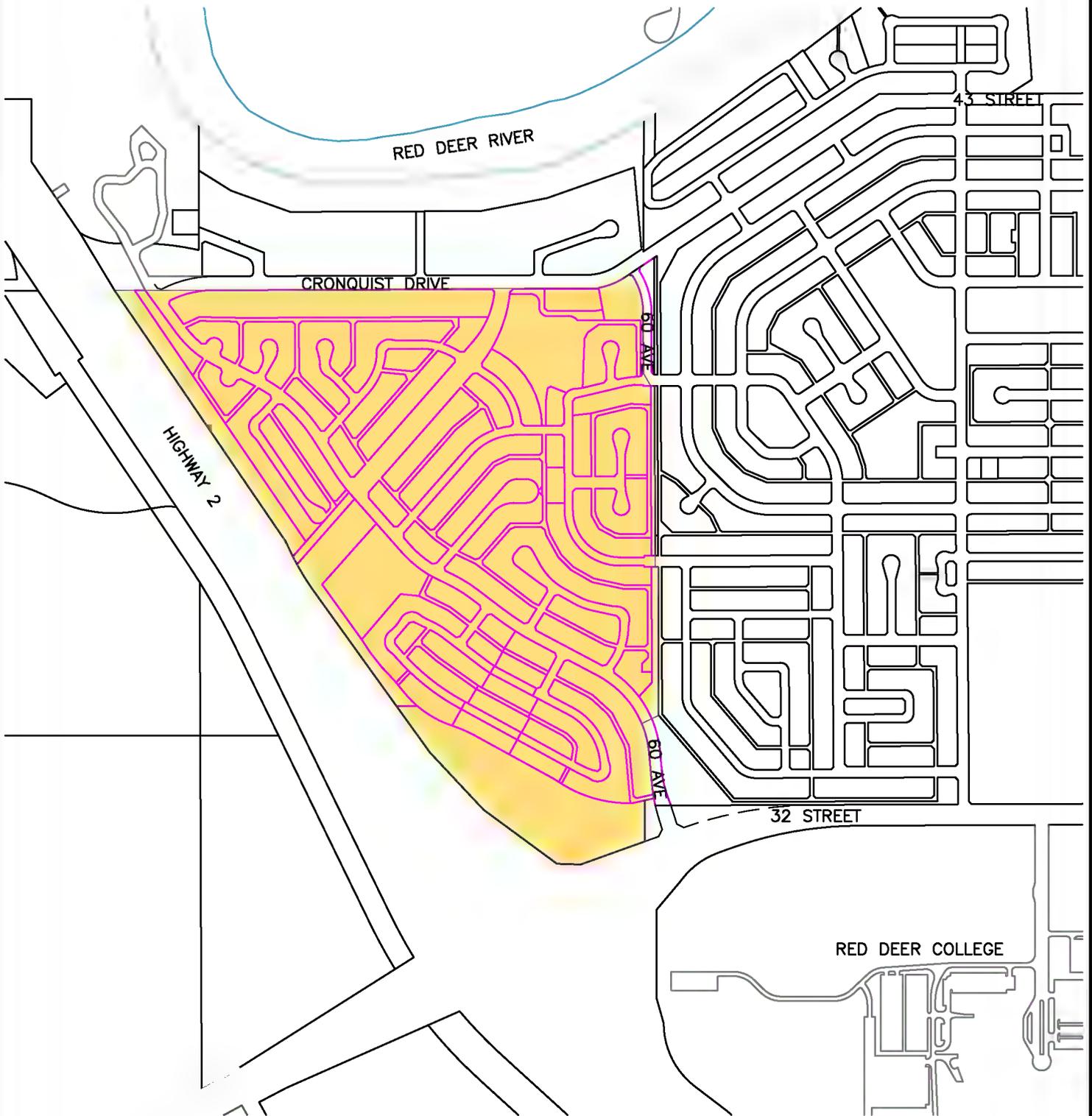


FIGURE 1 LOCATION

SCALE 1:10,000

PREPARED OCT 29/01

REVISED DEC 03/08

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EDMONTON RED DEER

WEST PARK EXTENSION AREA STRUCTURE PLAN

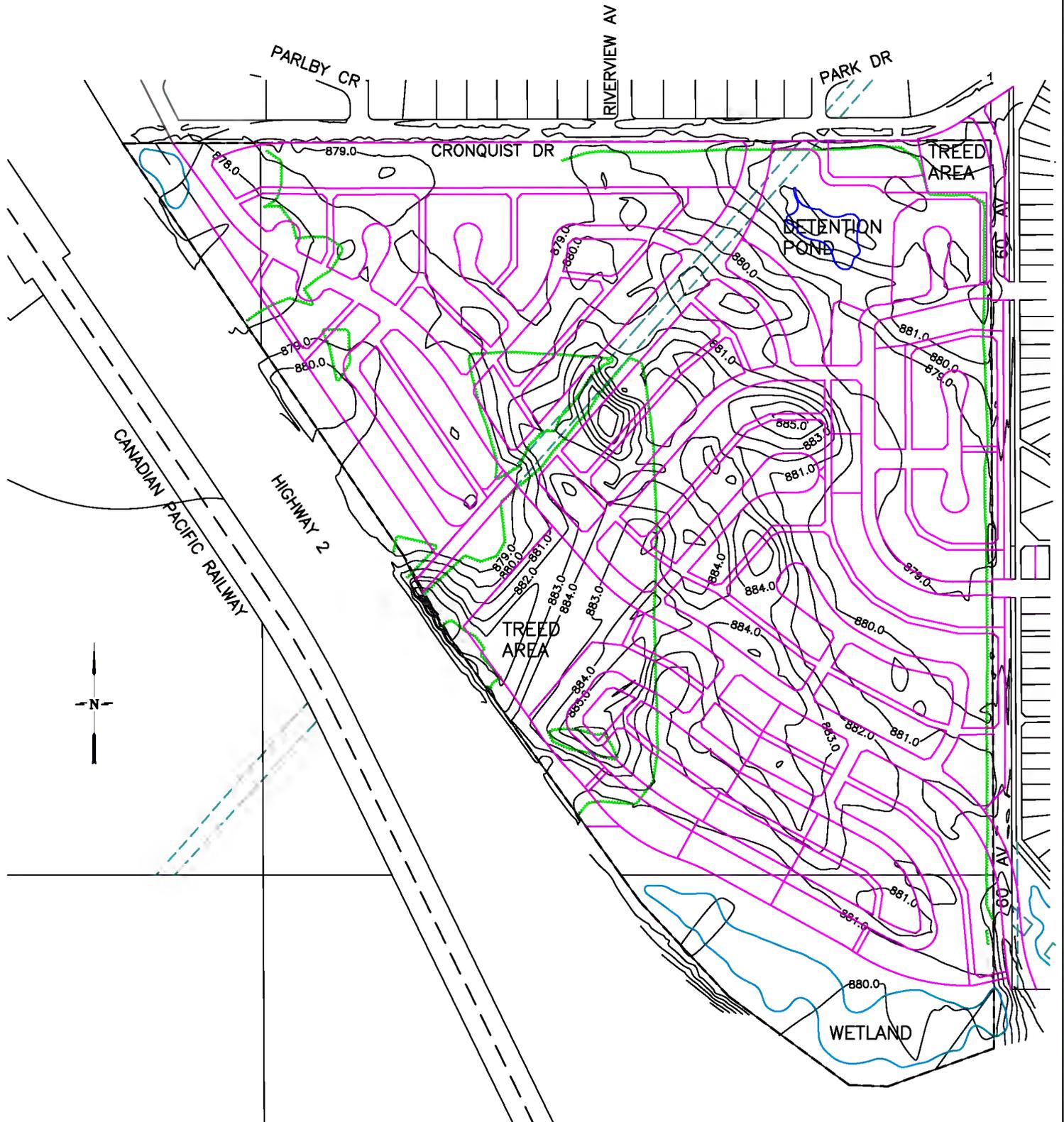


FIGURE 3
SITE FEATURES

SCALE 1:6000

PREPARED OCT 29/01
REVISED DEC 03/08

LEGEND:

- OUTLINE PLAN BOUNDARY
- 881.0 ORIGINAL GROUND CONTOURS
- ORIGINAL TREELINE

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West Creek Extension

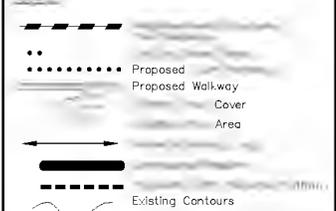
Section 7, ...

Prepared ... Properties.

	Acres	%
Total Developable Area	144.62	58.53 100
Environmental Reserve	16.15	6.54
Other	8.08	3.27 5.59
...	63.21	25.58
...	8.20	3.32
...	3.04	
...	2.29	0.93
...	36.35	
...	7.30	2.95
Reserve	16.15	6.54

Net Developable Area 144.62 58.53 100.0

	Acres	Hectares
...	8.46	3.42
...		0.49
...	1.19	
...	0.58	0.23
Total Area for Municipal Reserve	16.15	6.54



Planning Team Prepared By
 Strategies
 terra Engineering
 Associates Inc.
 Transportation
 Staff Resources
 Services

InerPlan strategies inc.
 Land Planning Services

Group 2	Scale
Rev. 2001	
Rev. 03/08	

West Park Extension

in Part D and

Neighbourhood Structure Plan

Section 7, Township 58, Range 27, W of 4

Prepared for: Tridel West Properties

Plan Strategy	Acres*	Hectares*	%
Developable Area	156.26	63.24	
Environmental Reserve	11.81	4.71	7.6%
Total Developable Area	144.45	58.53	100

Single Family Large Lots	8.08	3.27	5.59
Single Family Mid-Lots	63.21	25.58	44.4%
Single Family (Ribbon) Lots	8.20	3.32	9.0%
Semi-detached	3.04	1.20	3.1%
S Secondary Suite Lots	2.29	0.93	1.6%
Street front Units	36.35	14.51	25.1%
Public Utility Lots	7.30	2.95	10.4%
Municipal Reserve*	16.15	6.54	11.3%

Net Developable Area 144.62 58.53 100.0

Municipal Reserve (5 min)	Acres*	Hectares*
Central Park	8.46	3.42
Busway 2 Station	4.19	1.70
Buffer - Existing Community	1.21	0.49
Job Lot	0.24	0.10
Facility Park	1.19	0.48
N.E. Storm Water	0.58	0.23
Total Area for Municipal Reserve	16.15	6.54

- Legend**
- Neighbourhood Structure Plan Boundary
 - Existing Plan Boundary
 - Proposed 1.5m Pathway
 - Proposed Walkway
 - Existing Tree Cover
 - Children's Play Area
 - Potential Wetland (10%)
 - Undeveloped Reserves
 - Proposed 20m Right-of-Way (R/W)
 - Existing Contours

Planning Team: InterPlan Strategies Inc., Terra Engineering Ltd., LRP Associates Inc., InterPlan strategies inc. Land Planning Services

Prepared By: InterPlan strategies inc. Land Planning Services

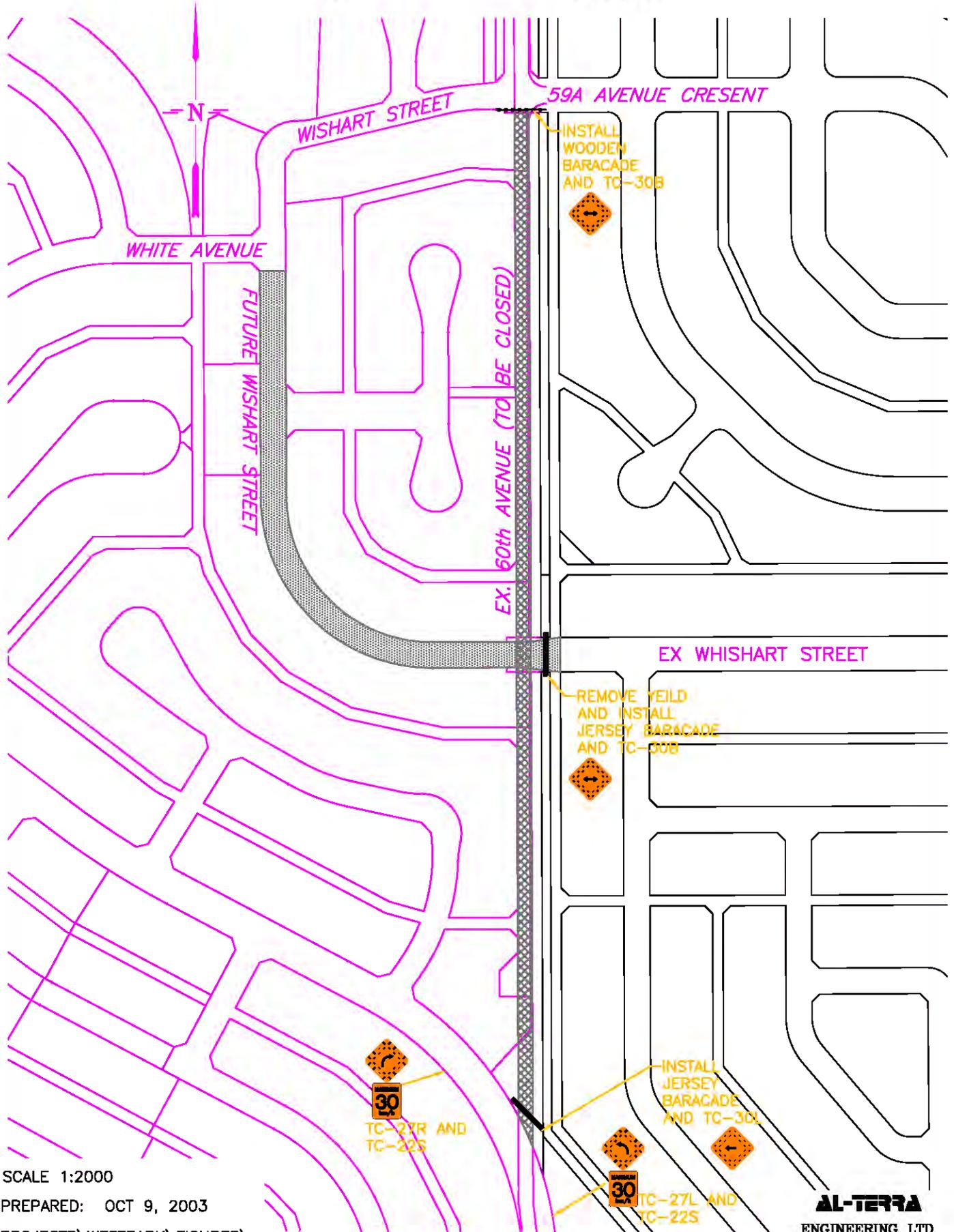
Date	Scale	Sheet
Rev. 2001	0 20 40 100m	1
Rev. 03/08		



key plan



FIGURE 5: 60TH AVENUE ROAD CLOSURE



SCALE 1:2000

PREPARED: OCT 9, 2003

PROJECTS\WESTPARK\FIGURES\
60th AND CRONQUIST

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EDMONTON

RED DEER

WEST PARK EXTENSION AREA STRUCTURE PLAN

WEST PARK EXTENSION

EXISTING WEST PARK

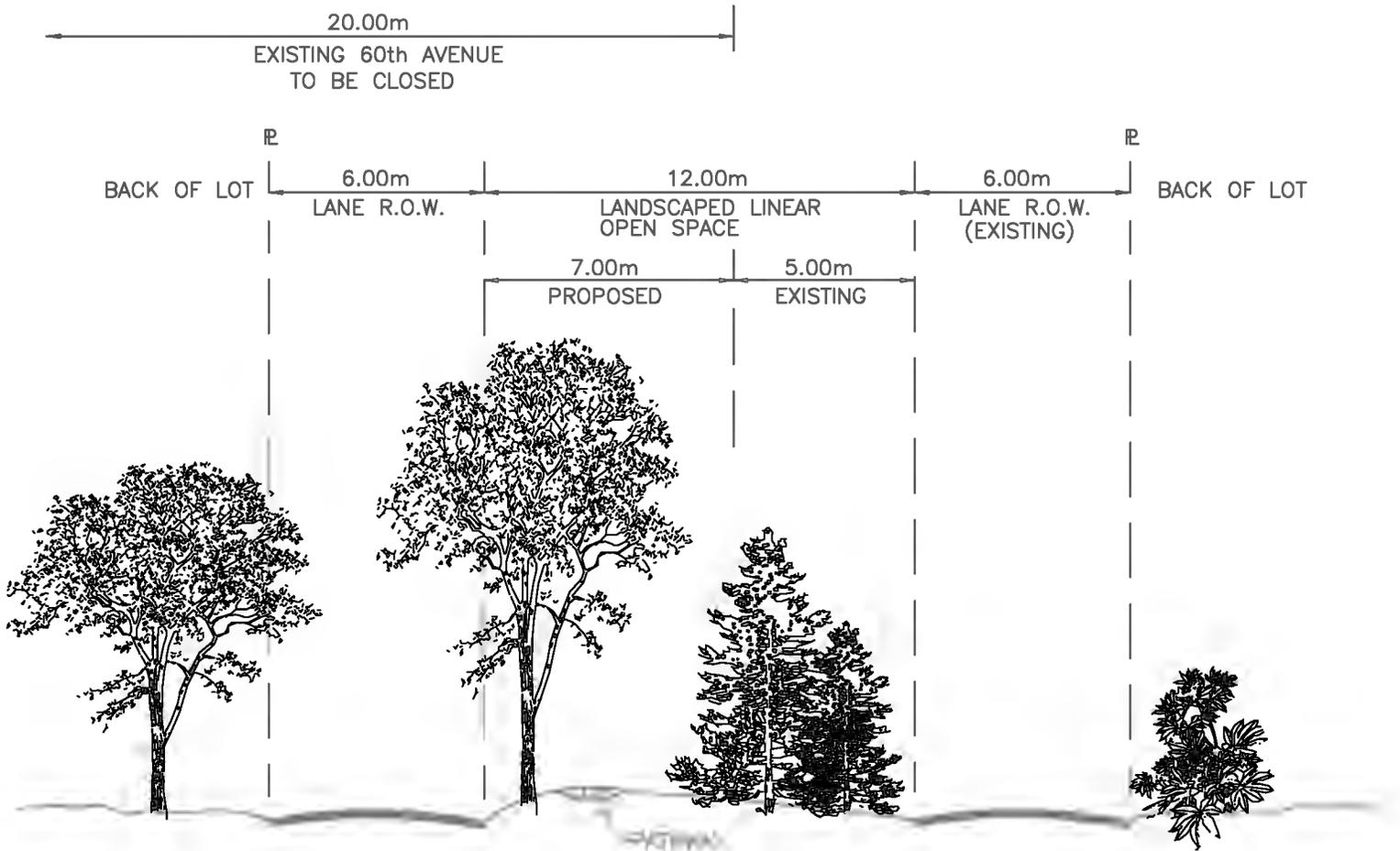
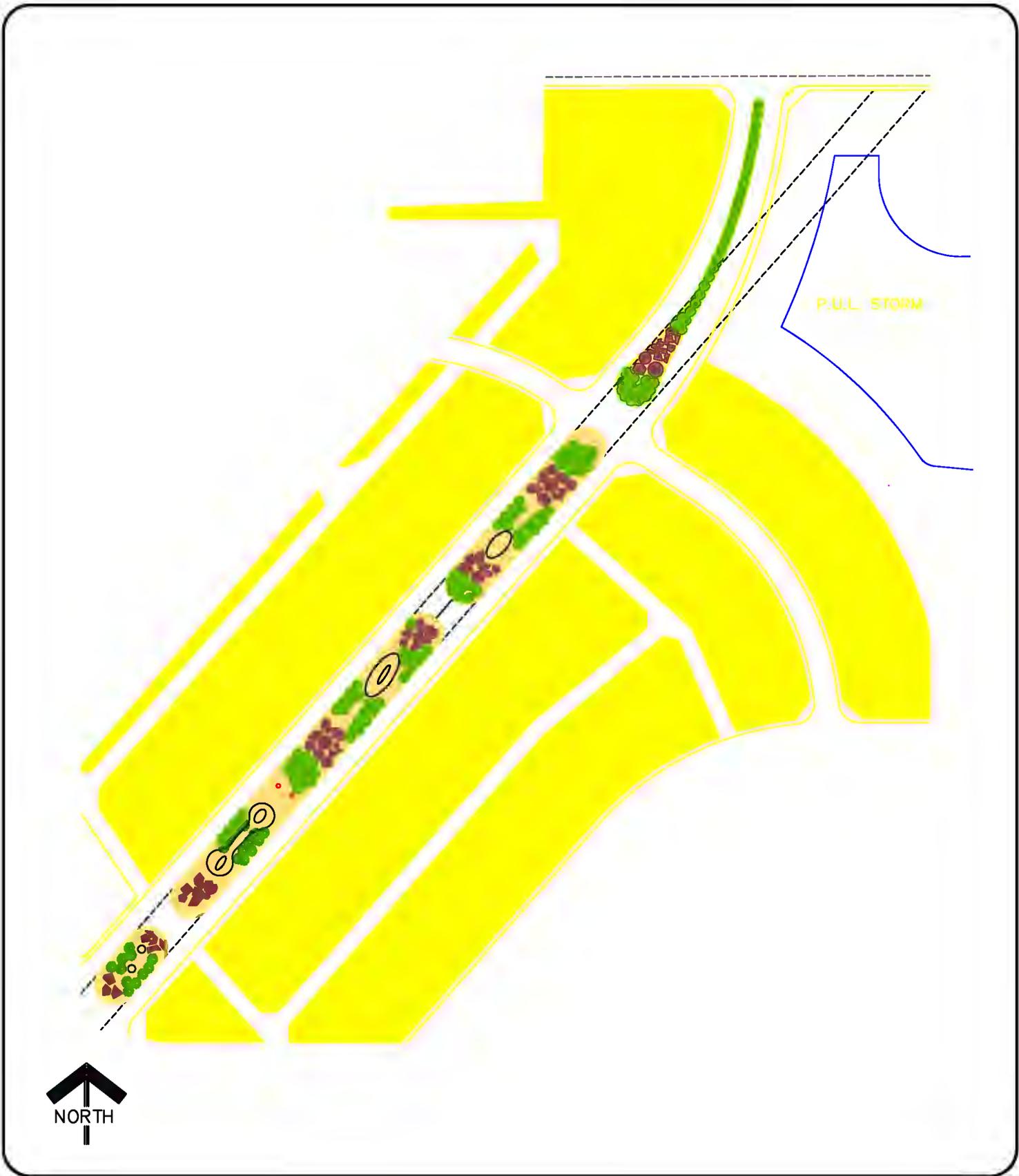


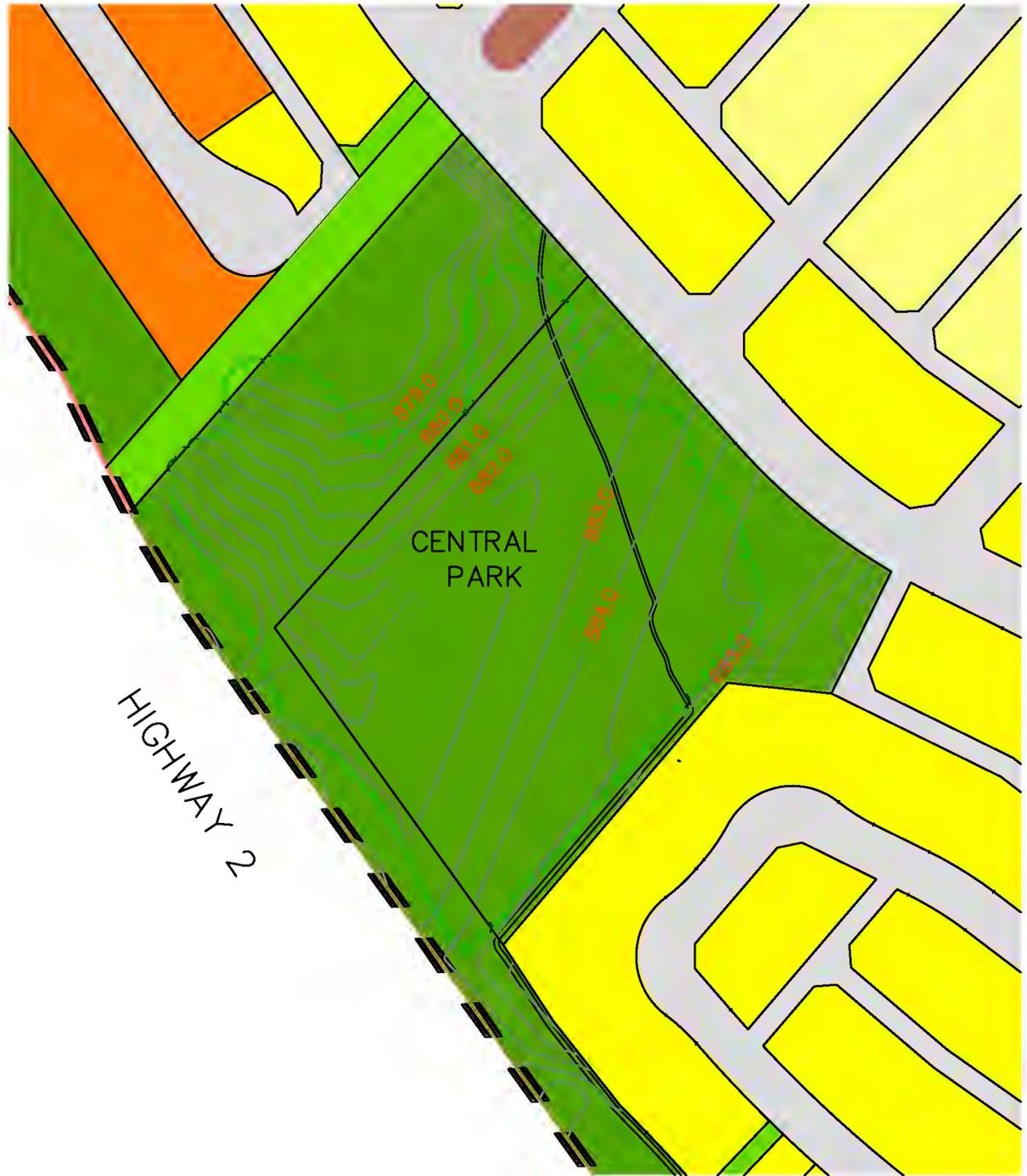
FIGURE 6
EAST AREA PARK

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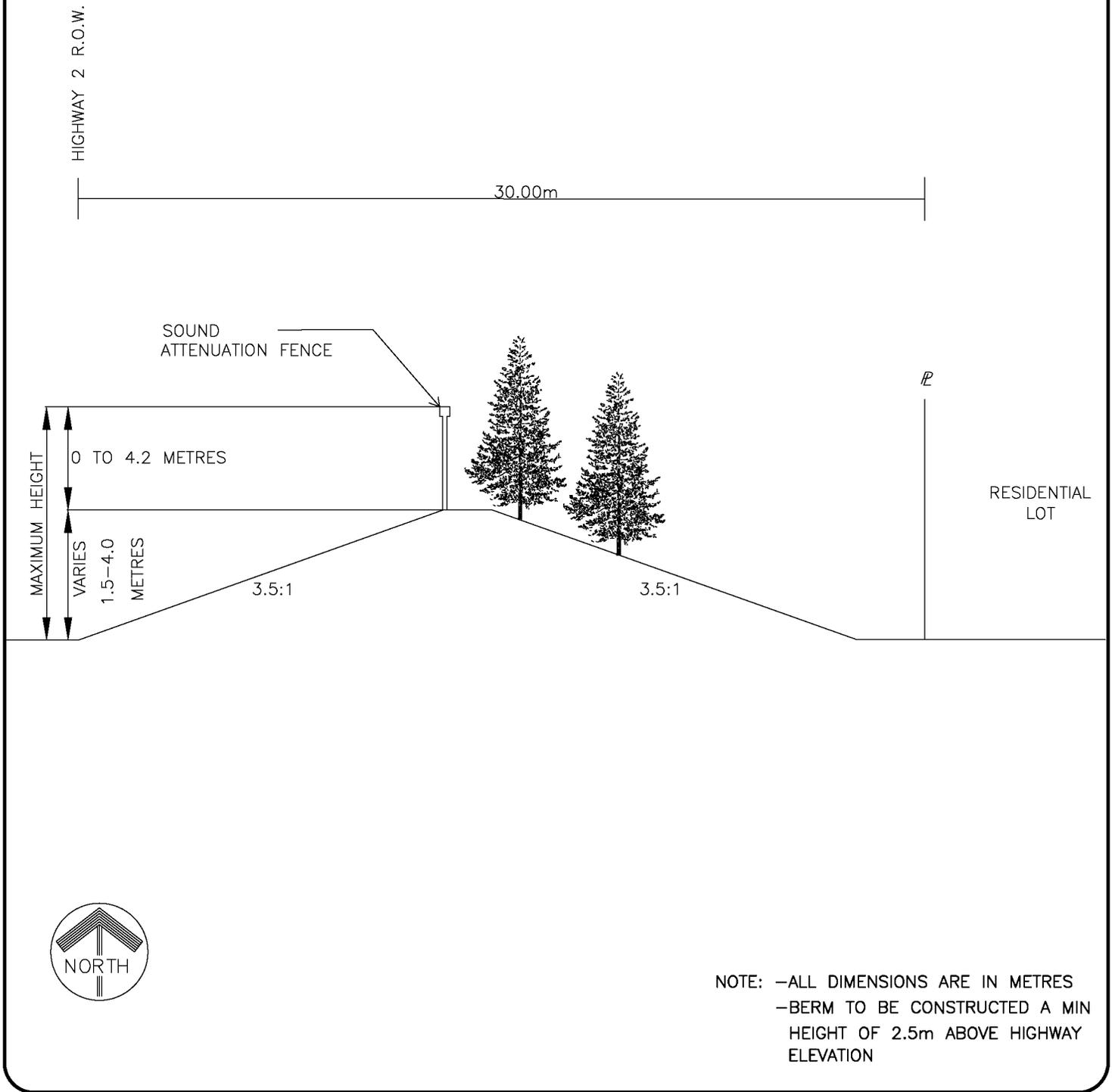


West Park Extension Grand Boulevard Concept Plan



*West Park Extension
Central Nature Park Concept Plan*

HIGHWAY BERM DETAIL



West Park Extension HIGHWAY BERM DETAIL



West Park Extension
 Northeast Wetland
 Park Concept Plan

FIGURE 10

WEST PARK EXTENSION AREA STRUCTURE PLAN

ENTRANCE COLLECTOR ROADWAY (ENTRANCE OFF CRONQUIST DRIVE)

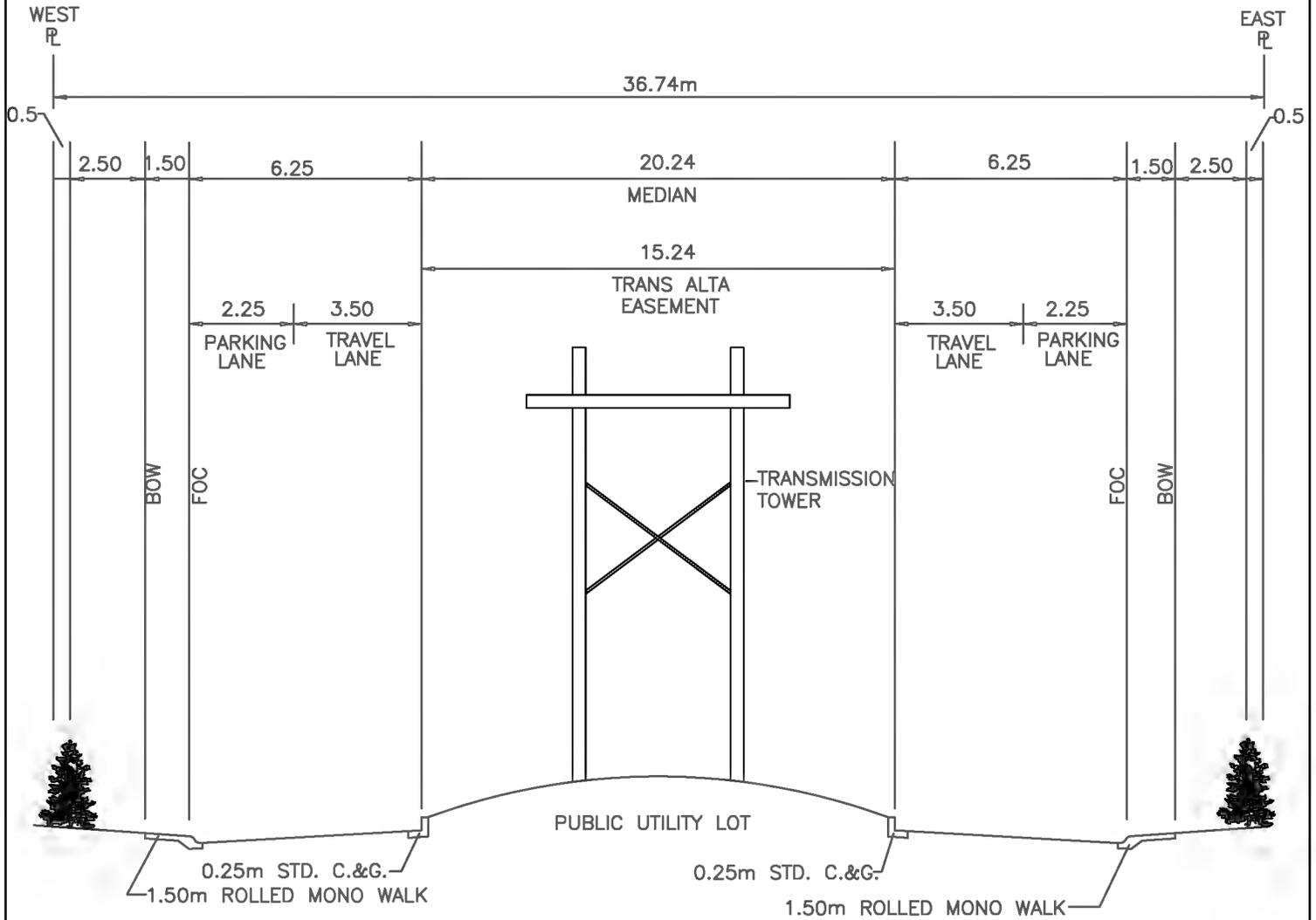


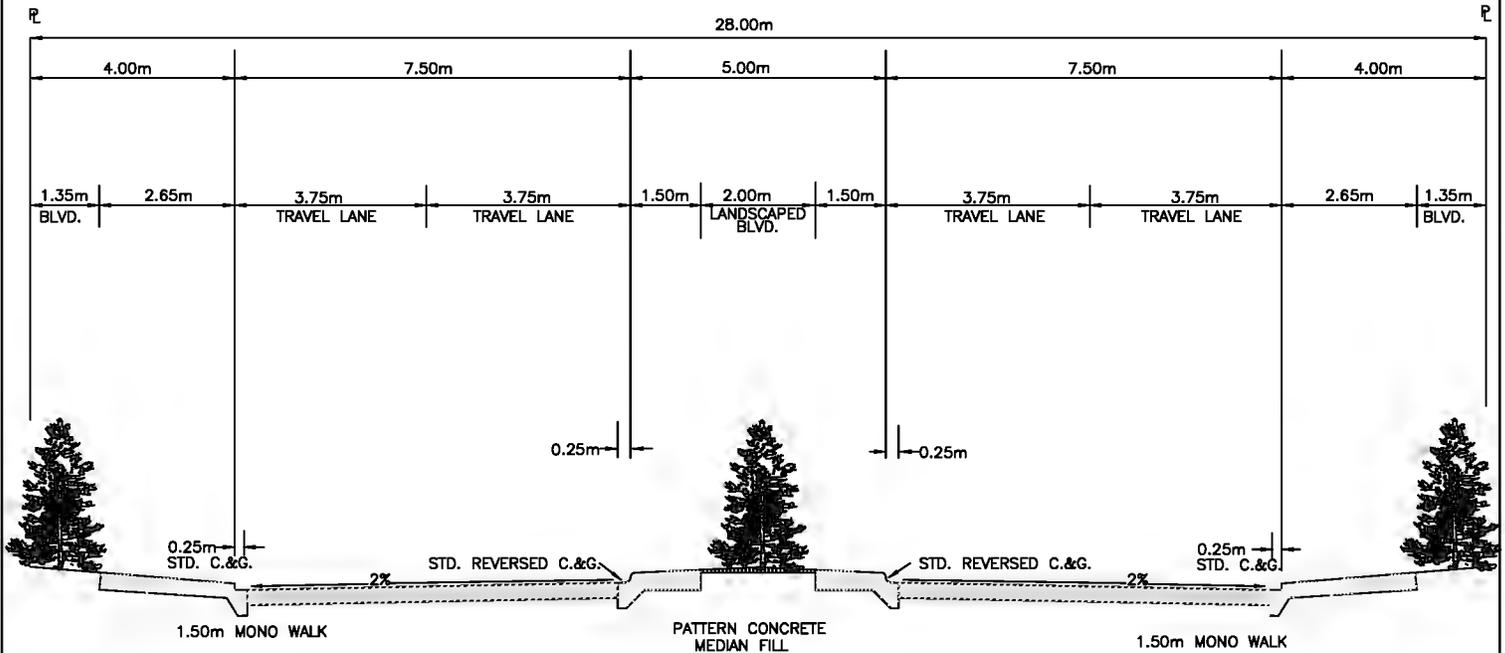
FIGURE 12
ENTRANCE COLLECTOR
ROADWAY DETAIL

PREPARED BY:

AL-TERRA
ENGINEERING LTD.

WEST PARK EXTENSION AREA STRUCTURE PLAN

DIVIDED RESIDENTIAL COLLECTOR (ENTRANCE OFF 32 STREET)



UNDIVIDED RESIDENTIAL COLLECTOR

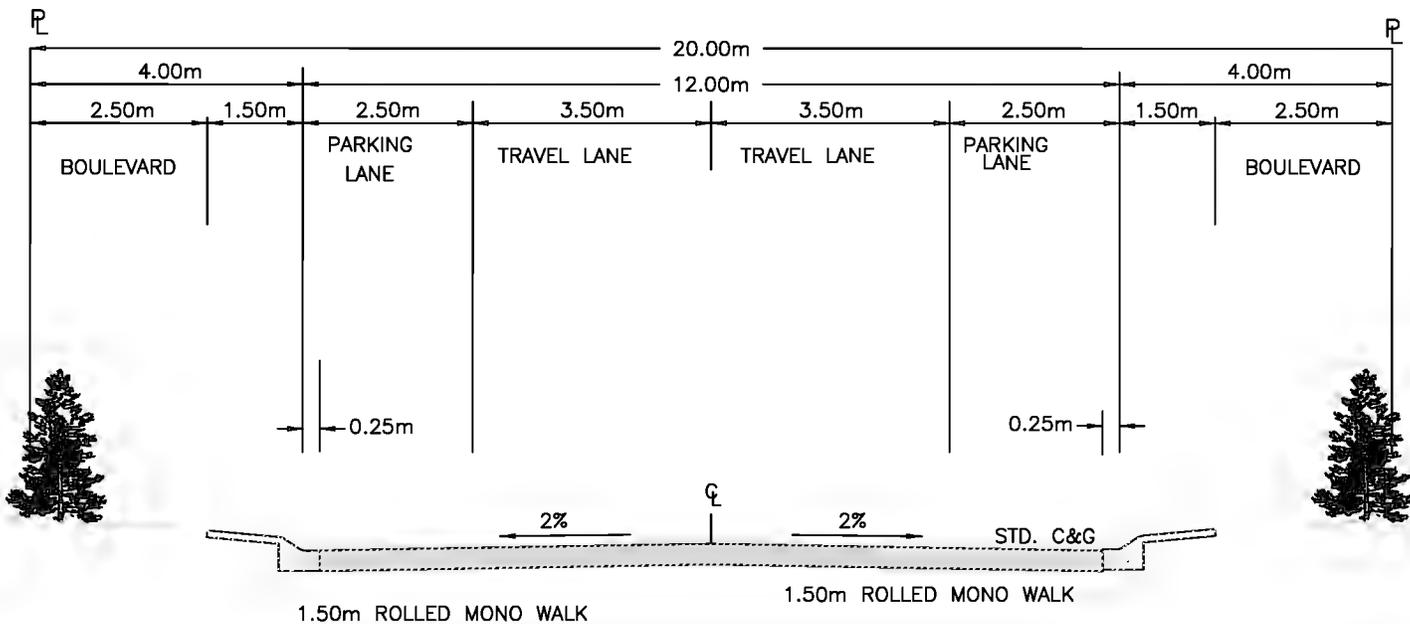


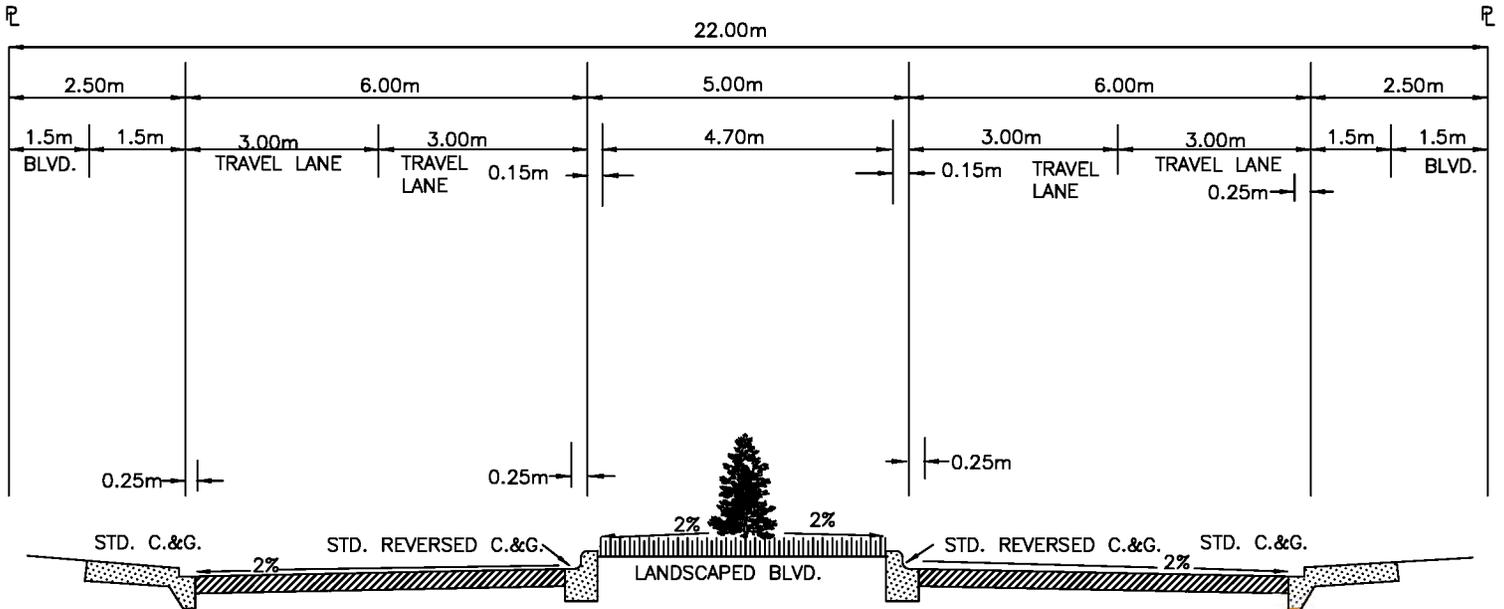
FIGURE 13
DIVIDED AND UNDIVIDED RESIDENTIAL
COLLECTOR ROADWAY DETAIL

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WEST PARK EXTENSION AREA STRUCTURE PLAN

DIVIDED RESIDENTIAL ROADWAY



UNDIVIDED LOCAL ROADWAY

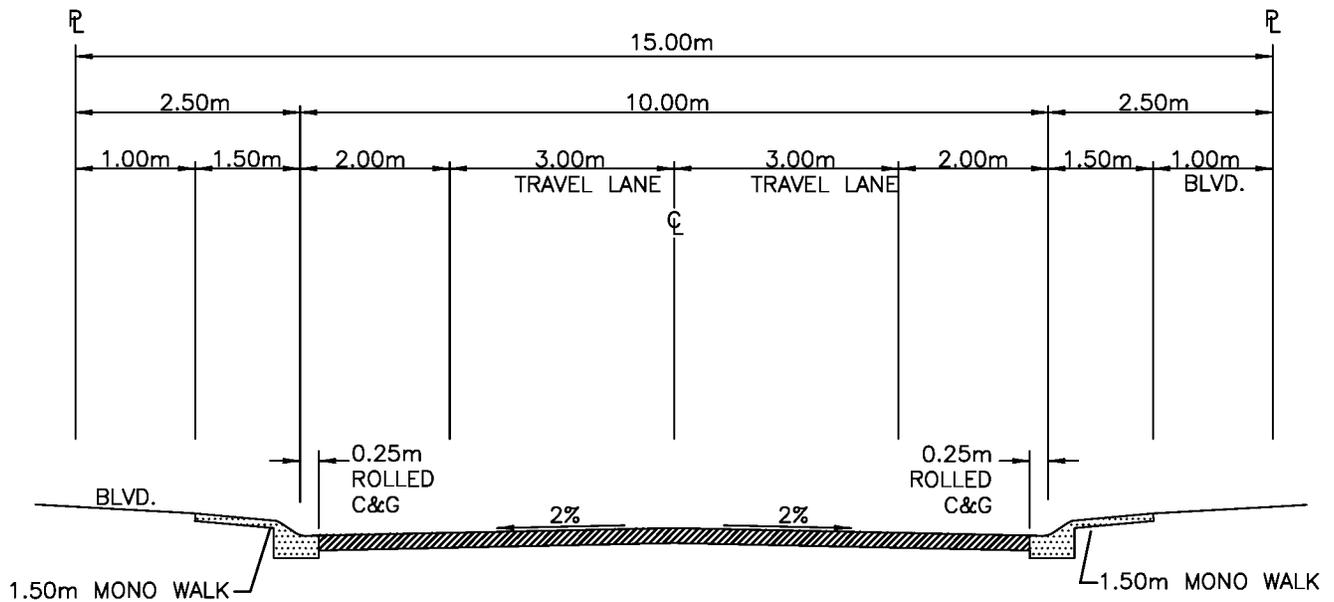
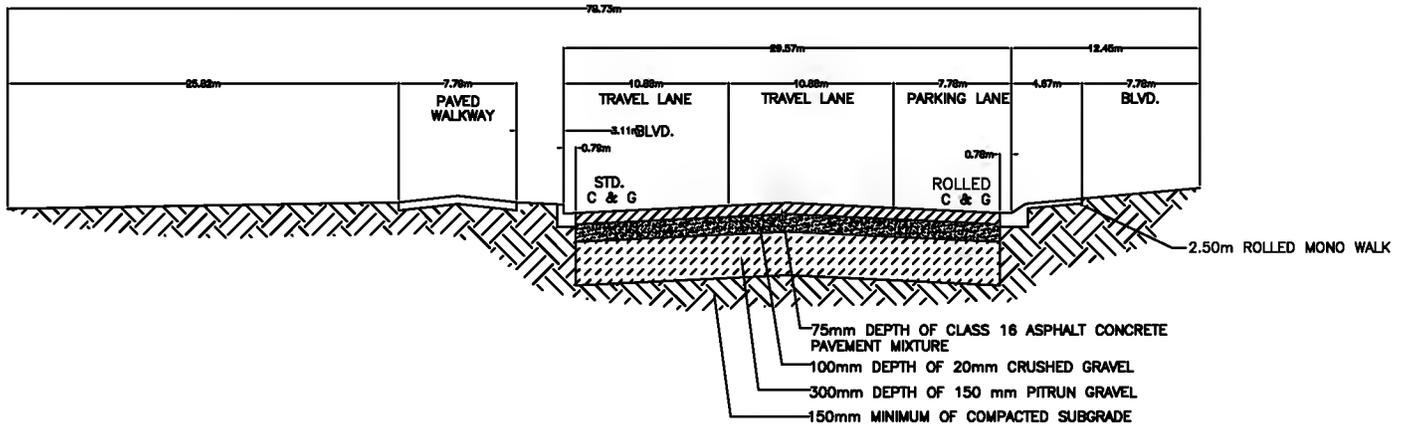


FIGURE 14
DIVIDED AND UNDIVIDED RESIDENTIAL
LOCAL ROADWAY DETAILS

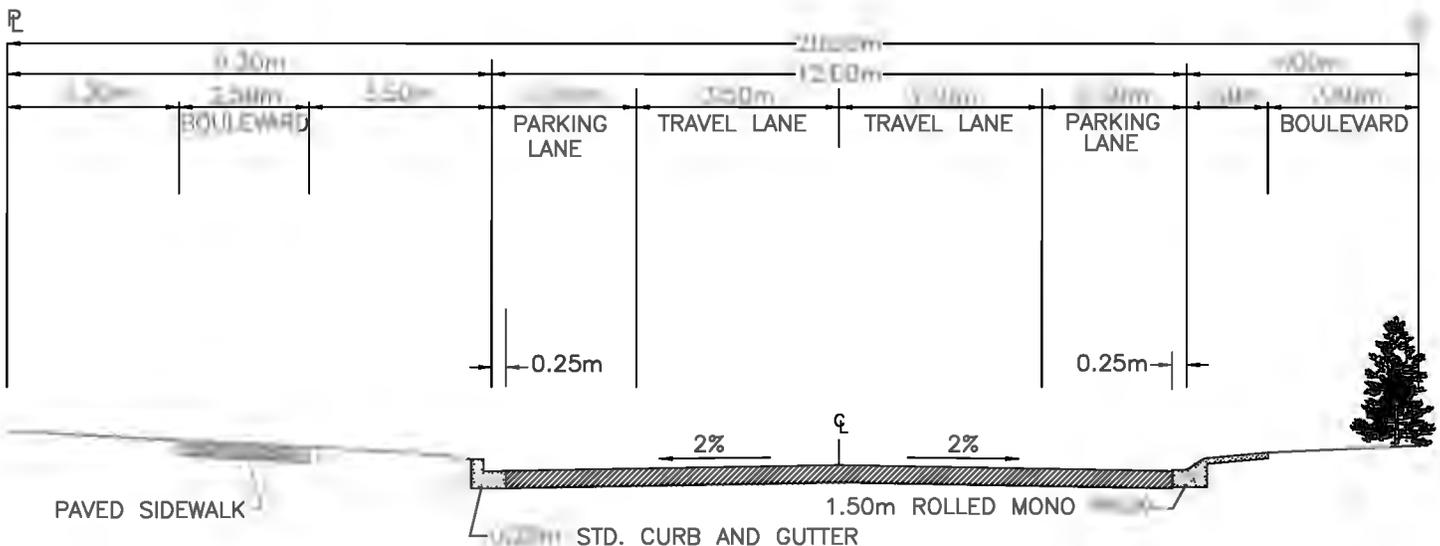
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WEST PARK EXTENSION AREA STRUCTURE PLAN



UNDIVIDED RURAL LOCAL RESIDENTIAL (FROM GRANDE BOULEVARD TO HERITAGE RANCH)



**FIGURE 15
CRONQUIST DRIVE DETAIL**

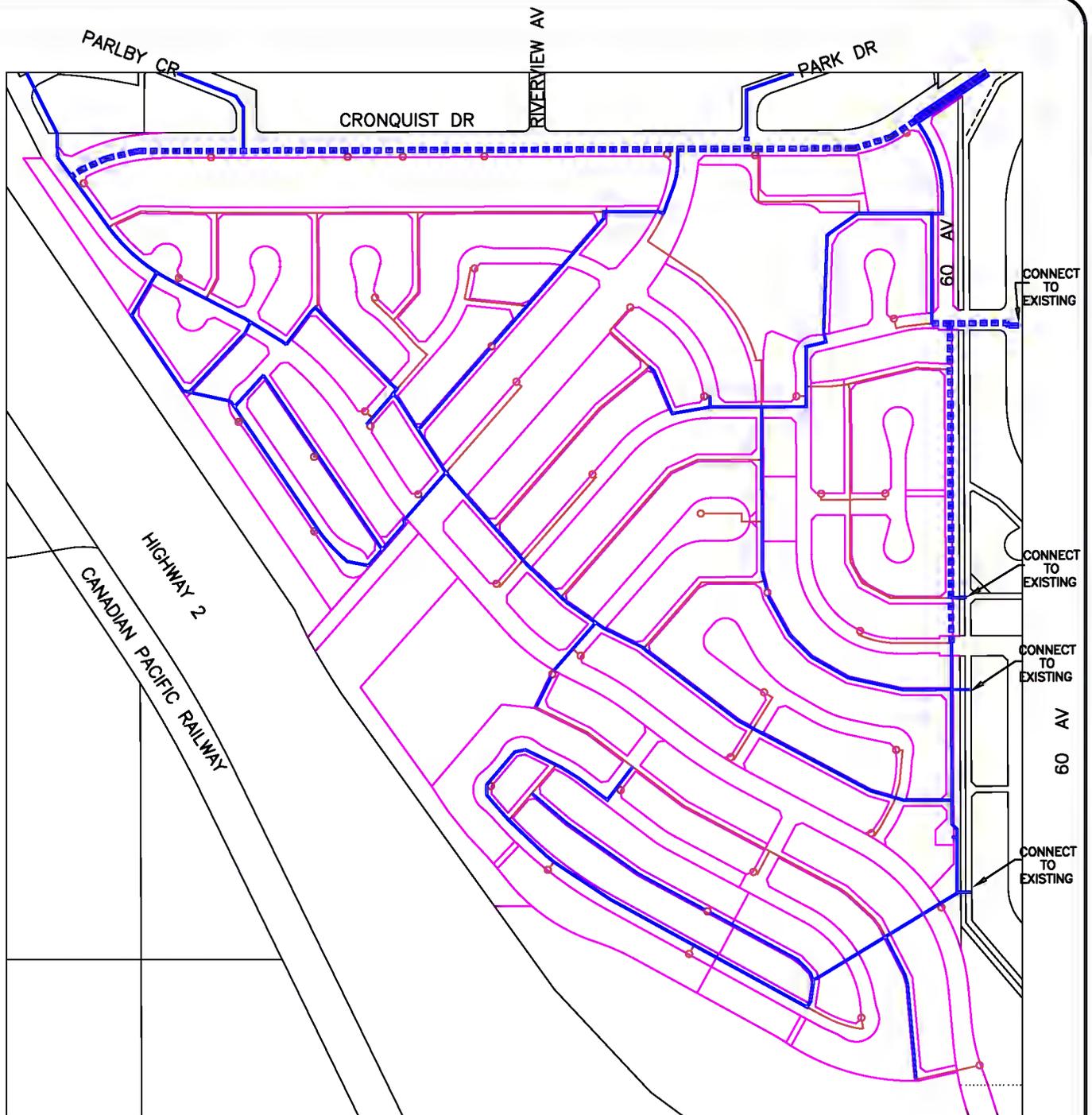
PREPARED BY:

AL-TERRA
ENGINEERING LTD.

REVISED APR 5/02
PREPARED OCT 29/01

EDMONTON

RED DEER



LEGEND

- 300mm WATER ▬
- 250mm WATER ▬▬▬▬
- 200mm WATER —
- 150mm WATER —
- PROPOSED HYDRANT ○

West Park Extension
Proposed Water Main

WEST PARK EXTENSION AREA STRUCTURE PLAN

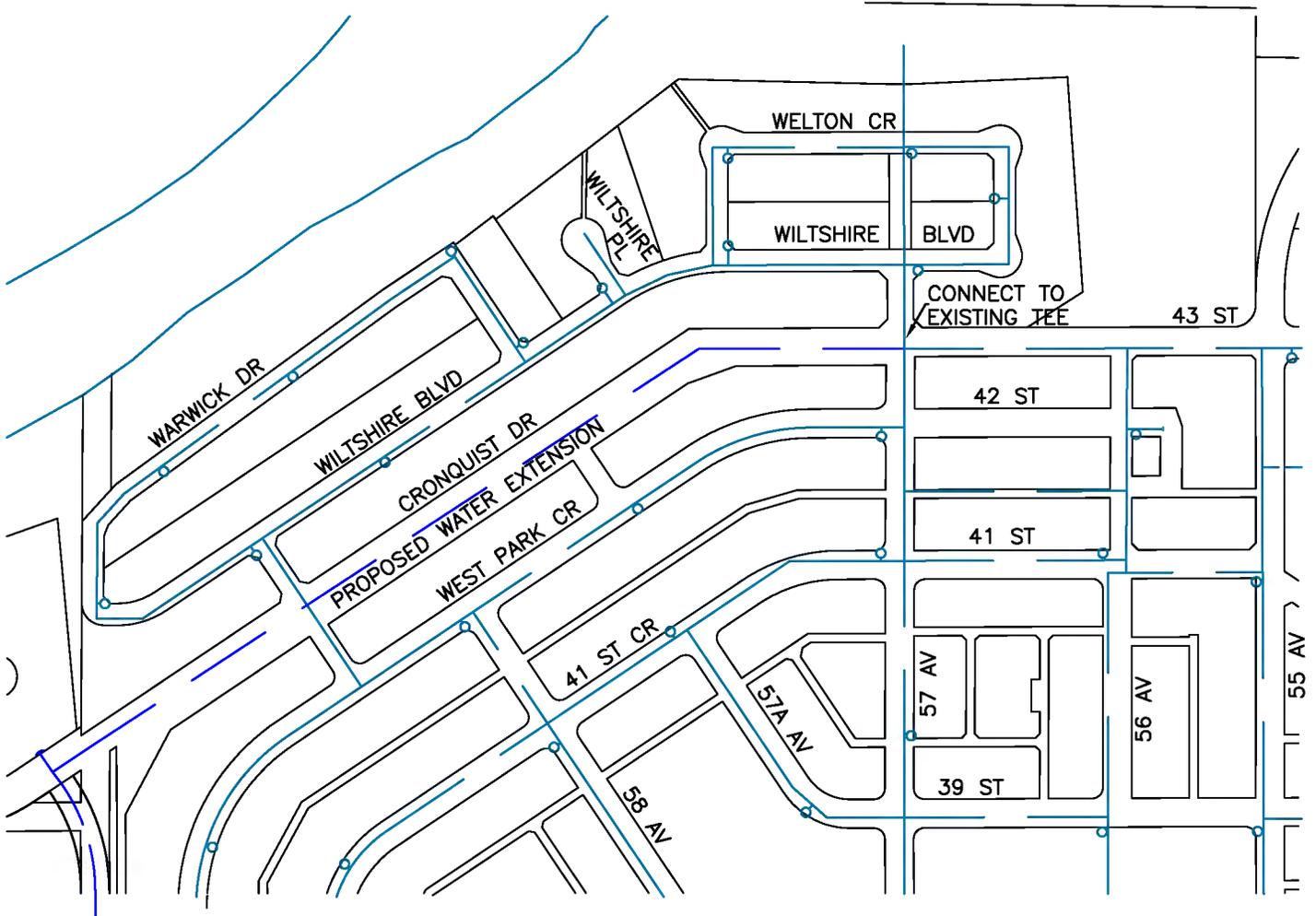
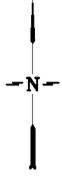


FIGURE 16a

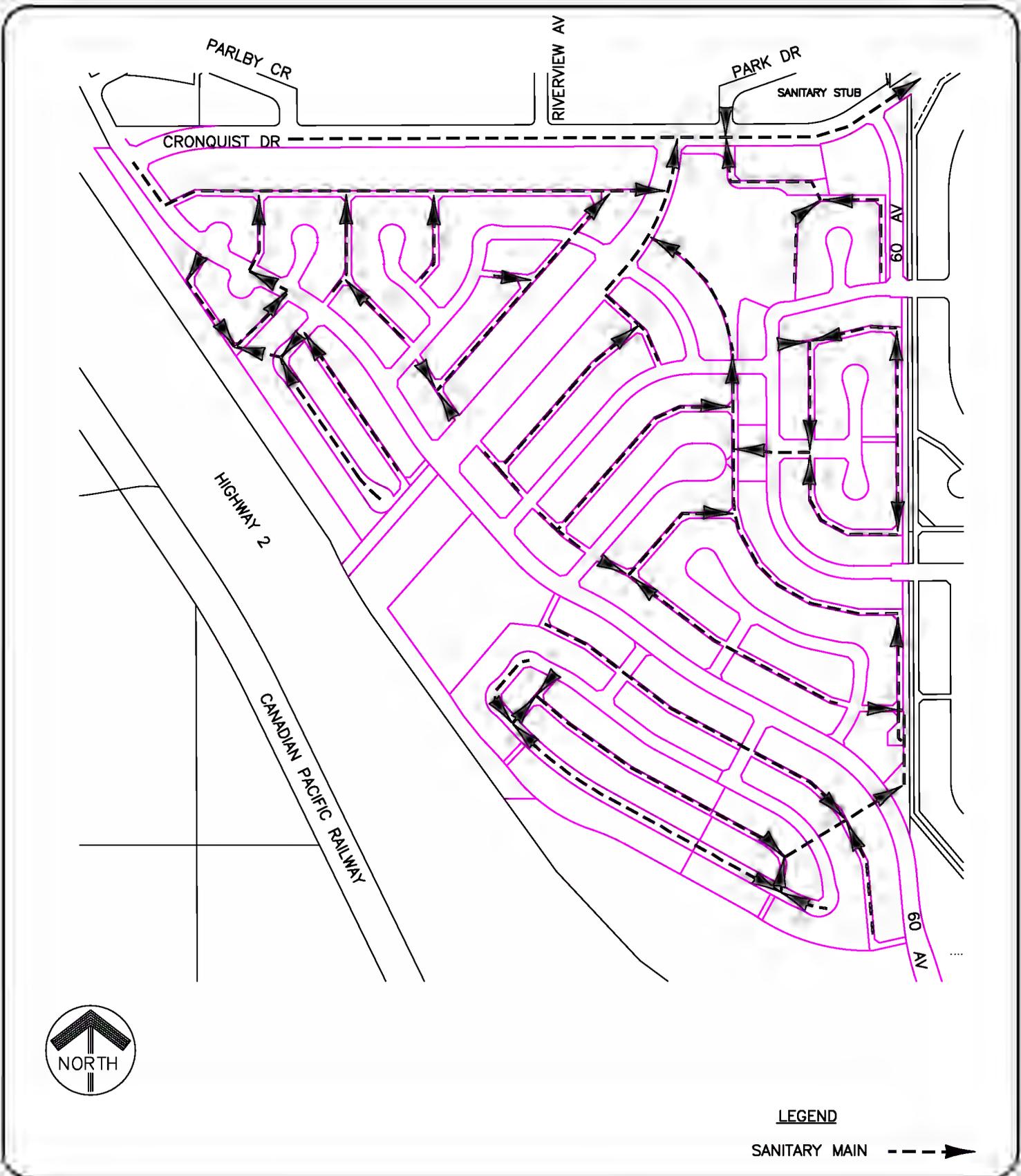
WATER MAIN CONNECTION — CRONQUIST DRIVE

SCALE 1:5000

LEGEND

- PROPOSED WATER ————
- EXISTING WATER ————
- HYDRANT ○

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West Park Extension
 Proposed Sanitary
 Sewer



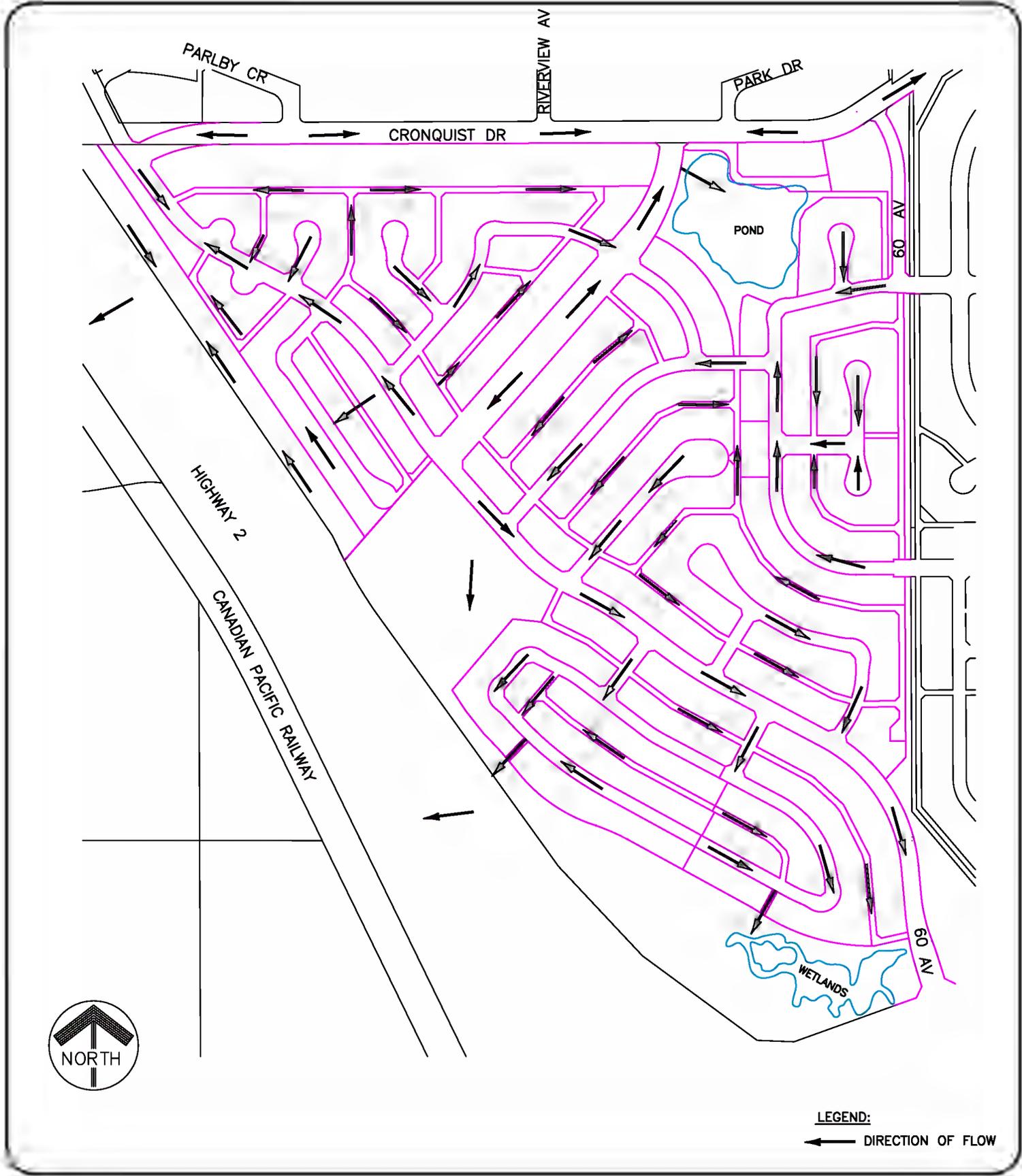
Legend :

- Proposed Sanitary
- Existing Sanitary

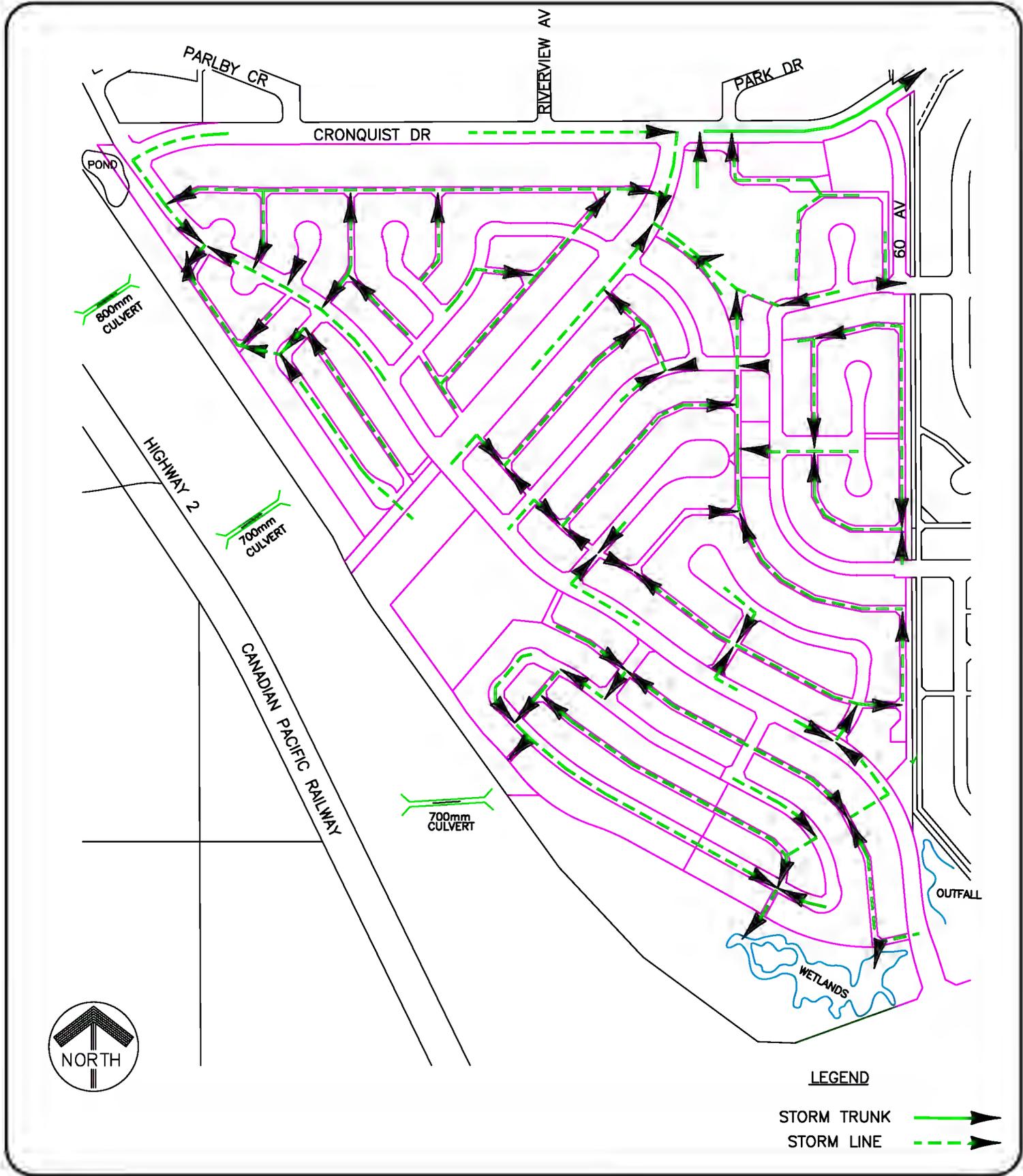
West Park Extension Sanitary Sewer Connection Cronquist Drive



West Park Extension
 Storm Sewer Connection
 Cronquist Drive



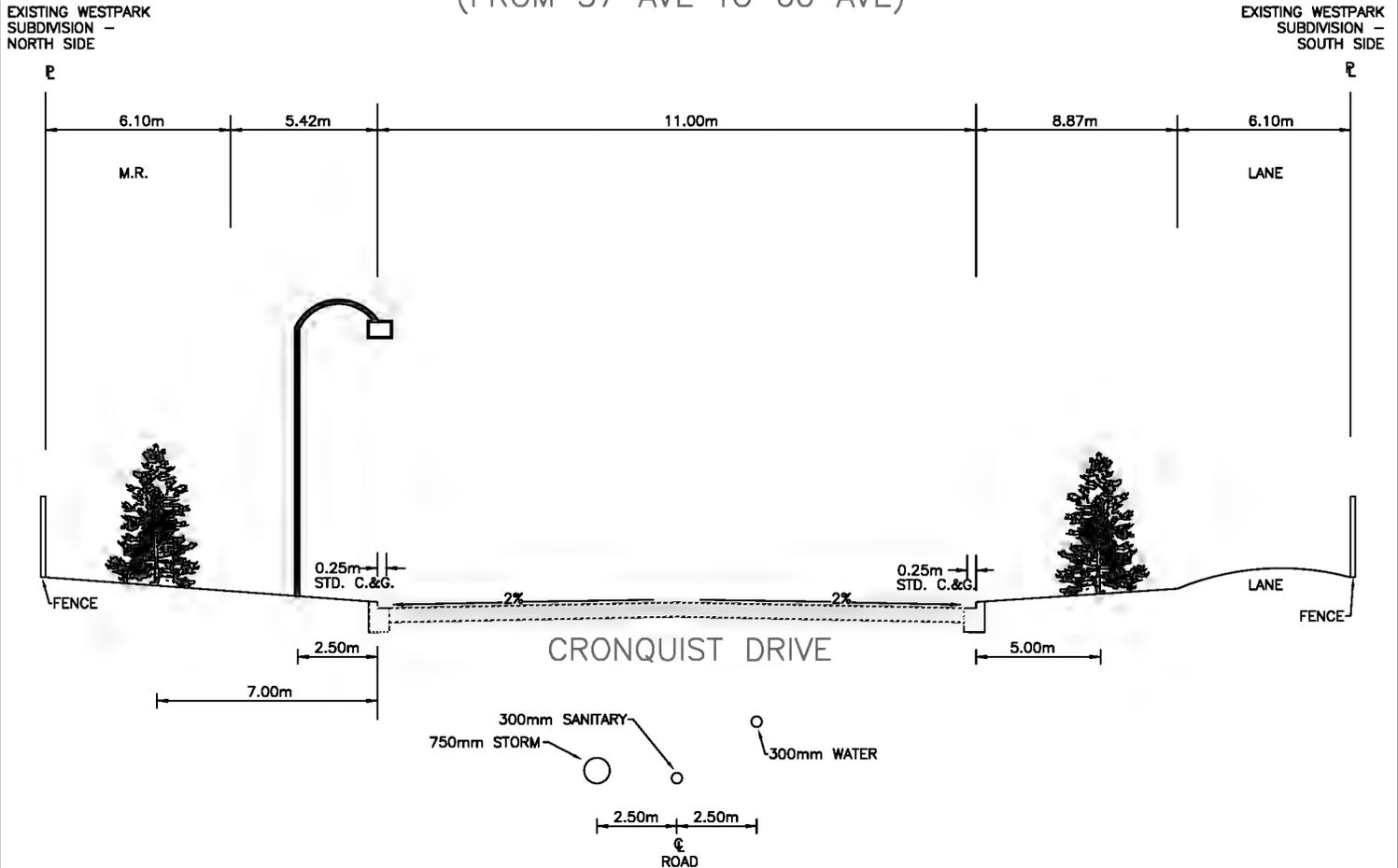
West Park Extension
 Proposed Overland
 Drainage



West Park Extension Proposed Storm Sewer

WEST PARK EXTENSION AREA STRUCTURE PLAN

SANITARY, STORM AND WATER TRUNK EXTENSIONS ALONG CRONQUIST DRIVE (FROM 57 AVE TO 60 AVE)



NOTE:

- EXISTING CONCRETE CURB AND GUTTER AND PAVEMENT TO BE REMOVED AND THEN RECONSTRUCTED AFTER TRUNK EXTENSIONS COMPLETED. ALSO BOULEVARDS TO BE RE-SEEDED.
- THE EXISTING TREES IN THE BOULEVARDS TO BE MAINTAINED DURING CONSTRUCTION.
- STREET LIGHTS WILL BE TEMPORARILY REMOVED AND THEN REPLACED ONCE TRUNKS ARE EXTENDED.

FIGURE 21a
TRUNK EXTENSION DETAIL

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WESTLAKE PHASING

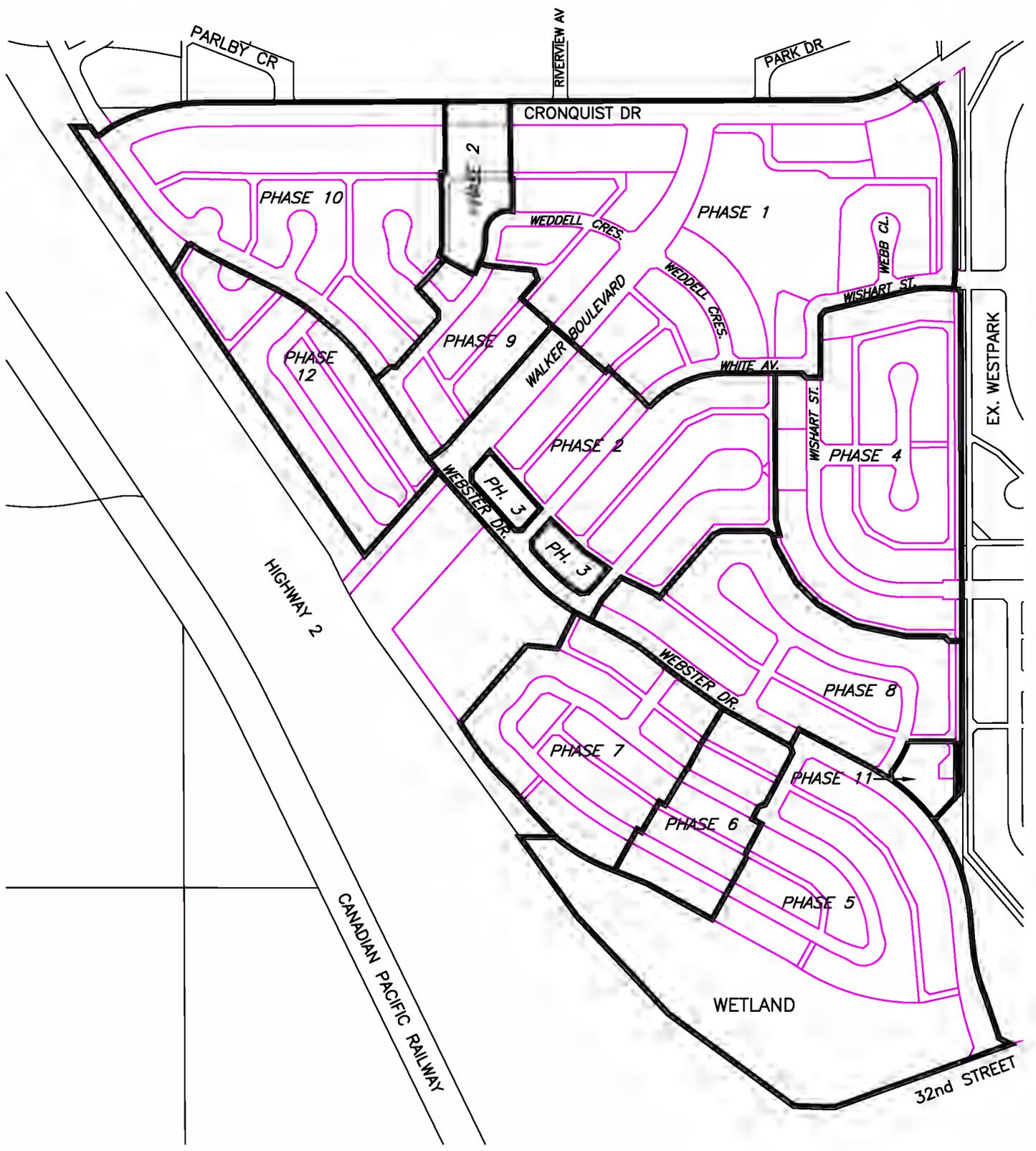


FIGURE 22
PHASING

SCALE 1:6000

REVISED APR 24/08
REVISED AUGUST 28/07
PREPARED JULY 17/03

LEGEND:

————— PHASE BOUNDARY

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