

City of Surrey
PLANNING & DEVELOPMENT REPORT

File: 7915-0412-00

Planning Report Date: February 6, 2017

PROPOSAL:

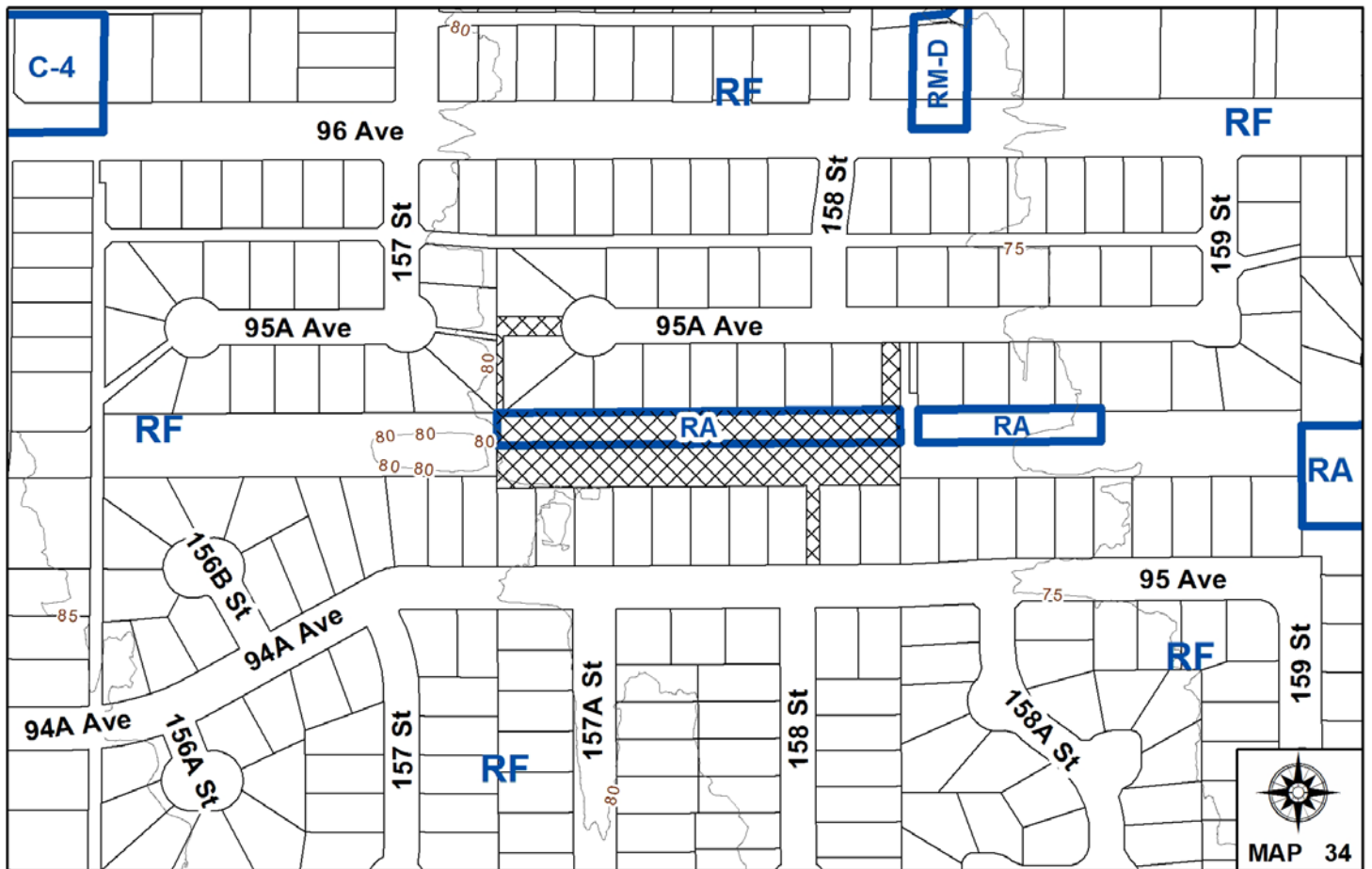
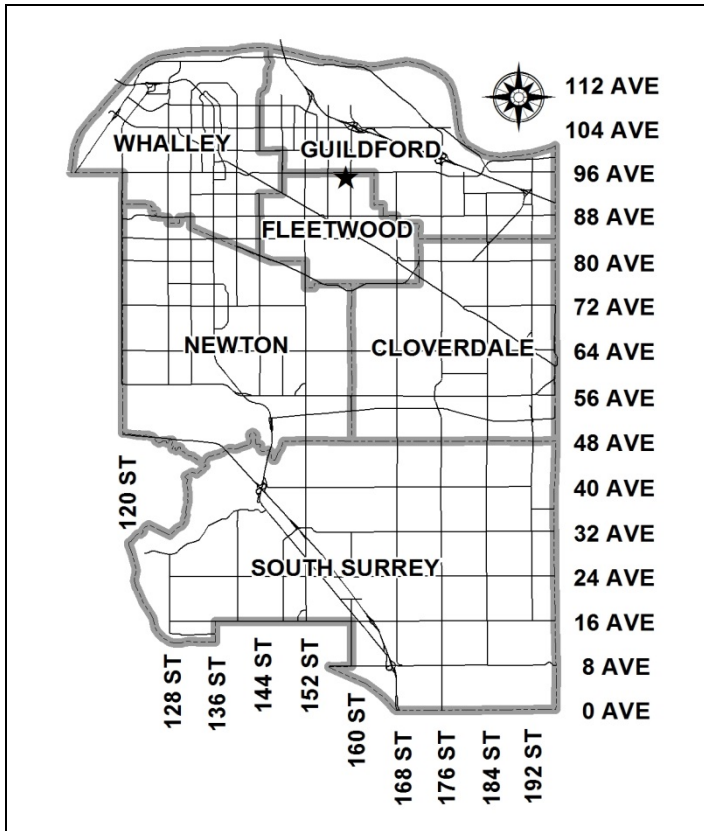
- **Development Variance Permit**
 to increase the height of a free-standing telecommunications tower from 12 metres (40 ft.) to 20 metres (66 ft.).

LOCATION: Adjacent to 15814 - 95A Avenue

OWNER: City of Surrey

ZONING: RA and RF

OCP DESIGNATION: Urban



RECOMMENDATION SUMMARY

- Approval for Development Variance Permit to proceed to Public Notification.

DEVIATION FROM PLANS, POLICIES OR REGULATIONS

- Seeking a variance to the Zoning By-law to increase the maximum permitted height of a free-standing telecommunications tower from 12 metres (40 ft.) to 20 metres (66 ft.).

RATIONALE OF RECOMMENDATION

- The applicant has proposed a monopole design telecommunications tower that will replace an existing wooden hydro pole and will house a single carrier, with the capacity to accommodate additional carriers.
- The applicant has provided information indicating that there are no existing structures that are suitable within a 500-metre (1,640 ft.) radius of the subject site.
- The public notification for the proposal generated 19 comments from the 65 property owners within 240 metres (787 ft.) of the subject site. The applicant has reduced the size of the compound to partially address resident concerns.
- The proposed location of the tower is within a greenway on a City-owned lot.
- The applicant has provided documentation which indicates that there is a demonstrated coverage gap in the area, which the wireless carrier would like to resolve to provide better service to existing and potentially new customers.

RECOMMENDATION

The Planning & Development Department recommends that Council approve Development Variance Permit No. 7915-0412-00 (Appendix III), to vary Part 4 General Provisions of the Zoning By-law to increase the maximum height of a free-standing telecommunications tower from 12 metres (40 ft.) to 20 metres (66 ft.), to proceed to Public Notification.

REFERRALS

- Engineering:** The Engineering Department has no objection to the project.
- Parks, Recreation & Culture:** Parks requires that the proposed cabinets be screened with a black fibreglass picket fence compound to screen the equipment. As the site is located within the Green Infrastructure Network (GIN), the applicant is volunteering a cash contribution to Parks to allow for additional planting and maintenance within the GIN.
- BC Hydro:** BC Hydro is supportive of the proposed replacement of the existing wooden hydro pole with a metal monopole design telecommunications tower. BC Hydro requires that the compound is constructed of fibreglass pickets rather than metal pickets.

SITE CHARACTERISTICS

Existing Land Use: Greenway containing multi-use pathway, encumbered by BC Hydro and Fortis BC rights-of-way.

Adjacent Area:

Direction	Existing Use	OCP Designation	Existing Zone
North:	Single family dwellings.	Urban	RF
East:	Continuation of greenway with multi-use pathway encumbered by utility rights-of-way.	Urban	RF
South:	Single family dwellings.	Urban	RF
West:	Continuation of greenway with multi-use pathway encumbered by utility rights-of-way.	Urban	RF

DEVELOPMENT CONSIDERATIONS

- The subject site has a civic address adjacent to 15814 – 95A Avenue and is part of a linear park greenway with a multi-use pathway running through it. The site is located between 95 Avenue and 95A Avenue and is approximately 400 metres (1,312 ft.) to the east of 156 Street and 300 metres (984 ft.) to the west of 159A Street and is encumbered by BC Hydro and Fortis BC rights-of-way. The site is designated Urban in the Official Community Plan (OCP) and is split-zoned "Single Family Residential Zone (RF)" and "One-Acre Residential Zone (RA)".
- Cypress Land Services Ltd. on behalf of Telus is proposing to erect a telecommunications tower and equipment compound on the subject site.
- Staff and the applicant explored whether there were existing structures of sufficient height within a 500-metre (1,640- ft.) radius of the subject site but no such structures were found.
- The proposal will provide improved telecommunication coverage and capacity for the area generally bound by 96A Avenue to the north, 160 Street to the east, 93A Avenue to the south, and 155 Street to the west (see Appendix IV).
- The applicant is seeking a Development Variance Permit (DVP) to increase the maximum height of a free-standing telecommunications tower from 12 metres (40 ft.) to 20 metres (66 ft.).
- The applicant proposes to swap out an existing 13.9-metre (46 ft.) tall wooden hydro pole with a 20-metre (66 ft.) tall metal monopole. BC Hydro has recently changed their requirements and now requires that all wooden poles swapped out for telecommunications towers must be replaced with metal poles. The proposed telecommunications tower is a monopole that is approximately 55 centimetres (2 ft.) wide at the base and tapers to approximately 30 centimetres (1 ft.) at the top. Exact width dimensions will not be known until final engineering of the pole has taken place.
- The applicant is proposing to install on the proposed monopole, two rows of three panel antennas for a total of six panel antennas.
- BC Hydro requires that existing power lines must be kept at the same elevation. The applicant requires 2 metres (6.5 ft.) of separation between the lines and the panel antennas.
- The proposed tower is intended to be located to the northwest of the existing walkway entering the greenway from 95 Avenue. The associated cabinet will be located across the walkway from the proposed monopole with wiring connecting the two to be located under the pathway.
- The applicant has provided a rendering of what the proposed grey-coloured monopole will look like from the east along the greenway (Appendix V).
- Due to neighbourhood concerns about the size of the equipment compound, the applicant has reduced the size of the compound from 6.1 metres (20 ft.) by 5.7 metres (19 ft.) for a total area of 35 square metres (374 sq. ft.) to 5.6 metres (18 ft.) by 4.7 metres (15 ft.) for a total area of 26 square metres (374 sq. ft.), which is a reduction of approximately 30%. The proposed

cabinet within the compound is 2.6 metres (8.5 ft.) wide by 1.7 metres (5.5 ft.) deep for a total area of 4.42 square metres (47 sq. ft.).

- The compound is proposed to be constructed with a high quality 2.4-metre (8 ft.) high black fibreglass picket fence design.
- Due to on-going maintenance concerns for the City, no landscaping is required surrounding the compound.

City's Telecommunications Strategy

- The key message staff have relayed to telecommunication companies is the importance of a comprehensive strategy to ensure adequate coverage for all carriers while minimizing the number of singular user installations and keeping the height of installations to a minimum without compromising the existing policy guidelines, especially proximity to residential areas and aesthetics being adequately addressed.
- Improving high speed wireless service supports the growing high technology sector, high tech education, emergency services and broadens community consultation opportunities through social media.
- The proposed telecommunications tower supports the City of Surrey's vision for building a strong economy.
- The subject application generally complies with the current Telecommunications Tower Policy No. O-49 and is therefore being presented for Council's consideration.
- The City policy on telecommunication towers was developed in conjunction with wireless providers and approved by Council on June 18, 2001 (Policy No. O-49 Telecommunication Towers). The policy provides parameters on how the towers should be sited and designed.
- The following is an evaluation of the current proposal in relation to Policy No. O-49:

Location and Siting

- When considering the siting of telecommunication tower facilities, every effort should be made to locate new equipment on existing structures such as BC Hydro transmission line towers, utility poles, roof tops, etc.

The applicant has indicated that they require a 20-metre (66 ft.) height in order to ensure an expanded infill coverage area bounded by 96A Avenue to the north, 160 Street to the east, 93A Avenue to the south, and 155 Street to the west (see Appendix IV).

The applicant has informed staff that there are no existing structures within a 500-metre (1,640 ft.) radius from the proposed location of the telecommunication tower that have the necessary height to facilitate the increased coverage area. They have provided a map of all existing telecommunication towers in the area (Appendix VIII).

- It is preferable that new free-standing telecommunication towers be sited in non-residential locations and preferably in industrial areas.

The proposed location is within a greenway and has residences to the north and south. Several years ago, staff explored an alternate site behind the North Surrey Works Yard within Hemlock Park. However, an approximately 40-metre (131 ft.) tall tower would be required to house several carriers and to exceed the height of the trees. Technology and the industry have further evolved which now require, ideally, a finer network composed of several shorter towers.

- Towers on prominent natural and cultural features, environmentally sensitive areas or areas with historically significant buildings are discouraged.

The proposed location of the installation is located on a greenway within a hydro corridor and is designed to be low impact. The applicant has designed the compound with a black fibreglass picket fence design to screen the equipment and will provide a cash contribution to Parks to improve the Green Infrastructure Network within the City (see Appendix VI).

- New free-standing telecommunication towers should be located at a distance from the edge of an existing or future road allowance no less than the height of the tower.

The wireless installation borders single family lots on the north and south side and does not border any roads.

- Location of telecommunication towers on sites with mature trees is encouraged.

Due to the greenway being completely encumbered by a BC Hydro transmission corridor, mature trees are not allowed due to conflict with the hydro lines.

- All applicants for free-standing telecommunication structures will be requested to identify any other structure (e.g. hydro transmission tower, existing telecommunication towers, etc.) within a radius of 500 metres (1,640 ft.) from the proposed location and to provide reasons why other existing structures within that radius are not acceptable for use (i.e. structural capabilities, safety, available space or failing to meet service coverage needs).

There are no suitable structures within a 500-metre (1,640 ft.) radius of the subject site that have the necessary height to facilitate the increased coverage area.

Co-Location

- The carriers and other telecommunication tower owners are encouraged to work cooperatively in reaching agreements which allow for sharing of tower structures so as to minimize the total number of towers in the City. This practice is typically referred to as "co-location".

Co-location would require an additional height of approximately 5 metres (16 ft.) as well as additional width and massing which would make the proposed tower much more prominent. On December 16, 2016, Council approved Development Variance Permit No. 7916-0427-00 for a 21-metre (69 ft.) high telecommunications tower approximately 350 metres (1,150 ft.) to the west for Freedom Mobile (Appendix VI). Staff recommend two shorter telecommunication towers rather than one taller and bulkier telecommunication tower.

Tower Design and Landscaping Criteria

- Towers and ancillary equipment shelters will be designed to fit their surroundings and to minimize their visual impact on surrounding properties.

BC Hydro has recently changed their policy regarding swapping out wooden poles and now requires that telecommunication towers be metal poles with increased separation from the power lines.

- The use of the monopole is encouraged. Where a tower is being constructed to accommodate a single user, a monopole design is required.

Due to the height proposed, the proposed tower will be for a single carrier and is a monopole design that is replacing an existing wooden hydro pole.

- Landscaping shall be appropriately placed around telecommunication towers and ancillary facilities, such as equipment shelters, to minimize their visual impact on the neighbourhood.

The applicant proposes a 5.6-metre (18 ft.) by 4.7-metre (15 ft.) equipment compound constructed of black fibreglass picket fence approximately 2.4 metres (8 ft.) tall. Due to maintenance concerns, Parks staff have requested that the proposed compound not be screened with landscaping.

PUBLIC CONSULTATION

In accordance with the City policy, the applicant sent out 64 notification packages on March 7, 2016 to property owners within a notification area of 120 metres (400 ft.), which is approximately six times the height of the proposed tower. The notification package included an erroneous attachment and on March 21, 2016 the applicant resent the information packages.

As a result of these notifications, 19 responses against the proposal were received by the agent concerning the proposed tower. The comments are as follows:

- The original mail-out included erroneous renderings and site plan displaying the wrong location.

The applicant resent the notification package when they were alerted of their error.

- The proposed site should be located within a park or school site.

The City generally avoids cell towers close to schools but has recently approved cell towers within parks site when they are able to be disguised as park infrastructure such as a soccer field lighting poles.

- This facility would be more suitably located in a nearby commercial area or the church located at 160 Street and 96 Avenue.

The proposed gas station and church are both located across the street from North Surrey Secondary School and therefore deemed unsuitable.

- No consideration was given in the proposal as to the effects on property values in the area.

According to the applicant, there is no consistent evidence to suggest wireless facilities impact property values.

- The proposed site will attract vandalism and should be relocated to a well-lit travelled area.

The proposed compound will be constructed of 2.4-metre (8 ft.) high quality black fibreglass slats which will deter vandalism.

- Natural state of greenway will be compromised by the proposed tower.

The proposed telecommunications tower is a monopole design replacing an existing wooden hydro pole. The applicant will be required to screen the equipment compound with a black fibreglass picket fence compound.

- The Parks Department planted shrubs in this area a few years ago for bird habitat. The area chosen is a low lying area (swale) and other areas may be higher ground.

The area was planted with bushes several years ago to increase natural vegetation in the area. The applicant will not be removing any of the existing bushes as part of the installation and the proposed location chosen is located on high ground and not located within the swale.

- The proposed compound and monopole are too close to the pathway and will ruin the aesthetics of the area.

The applicant explored alternate designs which included removing the compound and reducing cabinet sizes (see Appendix VI) as well as exploring other locations along the greenway and the subject site was determined to be the best location.

- Concerns about a red beacon located at the top of the tower.

The tower will not include any lighting or red beacon as part of the design.

- Concern was expressed that other carriers in the future, would attach their antennas to the proposed tower.

Due to spatial separation requirements between frequencies, it will not be possible for other carriers to add their equipment to the proposed tower.

- The proposed tower is too tall and is taller than the fir tree on a neighbouring property.

The proposed tower is 20 metres (66 ft.) in height which is the minimum height that can be achieved while still maintaining spatial separation requirements from the hydro lines.

- In 2015, safety code 6 was updated to become more stringent. Does the proposed tower meet the latest guidelines.

The proposed tower will exceed the latest guidelines.

- Concerns about health impacts of the proposed cellular tower.

Cellular tower installations are required to be designed, constructed, and operated in adherence with the minimum standards set by Health and Industry Canada.

- One resident stated that the Telus signal is sufficient in the area.

As more residents rely on wireless service as their only means of communication to meet their personal, business and emergency needs, the demand for wireless services increases.

BIODIVERSITY CONSERVATION STRATEGY

- The City of Surrey Biodiversity Conservation Strategy (BCS) Green Infrastructure Network (GIN) map, adopted by Council on July 21, 2014 (Corporate Report No. R141; 2014), identifies the entire greenway as a 30-metre (98 ft.) GIN corridor.
- The BCS further identifies the GIN area of the subject site as having a low habitat suitability rating, derived from species at risk presence, species accounts and known ecosystem habitat inventories.
- The applicant is volunteering a cash contribution to Parks in the amount of \$6,000 to allow for additional GIN planting and maintenance within the parkland.

BY-LAW VARIANCE AND JUSTIFICATION

(a) Requested Variance:

- To vary Part 4 General Provisions of the Zoning-By-law, to increase the maximum height of a free-standing telecommunications tower from 12 metres (40 ft.) to 20 metres (66 ft.).

Applicant's Reasons:

- The applicant has submitted documentation demonstrating that there is a coverage gap in the area, which the proposed telecommunications tower would assist in resolving.
- No existing structures of adequate height exist in the area.
- The installation is replacing existing infrastructure to better blend into the greenway.
- The proposed installation provides better service to the area to meet business, pleasure and emergency needs.
- There are limited options for cell towers in the area.

Staff Comments:

- The proposal complies with the majority of the criteria identified in the City's Policy for Telecommunications Towers. The proposed location is within a City-owned greenway.
- The proposed tower is replacing an existing wooden hydro pole.
- Staff support the requested variance.

INFORMATION ATTACHED TO THIS REPORT

The following information is attached to this Report:

Appendix I.	Lot Owners and Action Summary
Appendix II.	Site Plan, Elevations and Perspective
Appendix III.	Development Variance Permit No. 7915-0412-00
Appendix IV.	Coverage Maps
Appendix V.	Renderings
Appendix VI.	Alternate Designs Explored to Address Neighbourhood Concerns
Appendix VII.	Aerial Photo of Area
Appendix VIII.	Existing Towers in Area

original signed by Judith Robertson

Jean Lamontagne
General Manager
Planning and Development

JKS/dk

Information for City Clerk

Legal Description and Owners of all lots that form part of the application:

1. (a) Agent: Name: Tawny Verigin
 Cypress Land Services Inc.

 Address: 736 - Granville Street, Unit 120
 Vancouver, BC V6Z 1G3

2. Properties involved in the Application
 - (a) Civic Address: Adjacent to 15814 - 95A Avenue

 - (b) Civic Address: Adjacent to 15814 - 95A Avenue
 Owner: City of Surrey
 PID: 003-027-791
 Lot 63 Section 35 Township 2 New Westminster District Plan 70957

3. Summary of Actions for City Clerk's Office
 - (a) Proceed with Public Notification for Development Variance Permit No. 7915-0412-00 and bring the Development Variance Permit forward for issuance and execution by the Mayor and City Clerk.



KEY PLAN
1 : 750

ALL UNITS ARE IN MILLIMETERS
UNLESS OTHERWISE NOTED

REVISIONS	DATE	NO.
CLIENT REVIEW	AUG. 01 1	
REVISED PER SURVEY	FEB. 11 2	
ISSUED FOR APPROVAL	FEB. 17 3	
ELECTRICAL CABINET ADDED	FEB. 24 4	
REVISED TO SHELTER	MAY 05 5	
REVISED TO 118 MIC	APR. 28 6	
REVISED PER BC HYDRO	2018 7	
CLIENT REVIEW	MAY 13 8	
FENCE REMOVED	MAY 12 9	
ISSUED FOR BC HYDRO APPROVAL	JULY 29 10	
FENCE ADDED	JAN. 23 11	

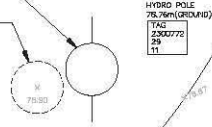
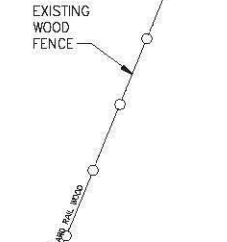
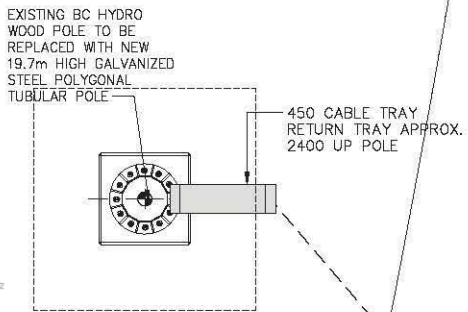
ROBERTSON KOLBEINS TEEVAN GALLAHER ASSOCIATES LTD
CONSULTING ENGINEERS
1943 W. 4TH AVE. VANCOUVER, BRITISH COLUMBIA V6J 1A5

RKTG DRAWING No.: **B19-2377-100** REV. 11

BC1294 - 162 ST. & 92 AVE.
BC HYDRO TRANSMISSION/DIST. WOOD POLE
KEY PLAN

ENG: G. ANDERSEN	DATE: JUNE 2013
DR: E. DAUZ	PLOT: 1 : 1
CHK: C. ANDERSEN	PLOT DATE:
APP: M. RAMSAY	JAN 23, 2017





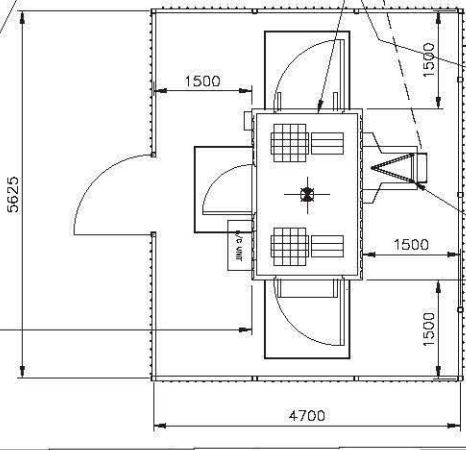
EXISTING PAVED PATHWAY

PROPOSED UNDERGROUND POWER & FIBRE

TELUS EQUIPMENT BUILDING
1TB WIC 5'x8' (1.5mx2.4m o/o)
DELIVERY AND INSTALL
BY CIVIL'S CONTRACTOR

2440 h (8") AND 2440 w PANELS
'FIBREFENCE' AS MANUFACTURED
BY F&F COMPOSITE GROUP INC
c/w ALL ACCESSORIES TO MAKE
FOR A COMPLETE INSTALLATION

CABLE TRAY SUPPORT FRAME.
SEE DRAWING 105 FOR DETAILS



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COMPOUND LAYOUT PLAN
1 : 75

REVISIONS	DATE	NO.
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REVISED PER SURVEY	FEB. 11 2013	2
ISSUED FOR APPROVAL	FEB. 17 2013	3
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PERMITS TO SHELTER	MAY 24 2013	5
REMOVED TO IIB MIC	APR. 28 2013	6
REMOVED PER BC HYDRO	2013	7
CLIENT REVIEW	MAY. 13 2013	8
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ISSUED PER BC HYDRO APPROVAL	MAY. 29 2013	10
FENCE ADDED	JAN. 23 2017	11

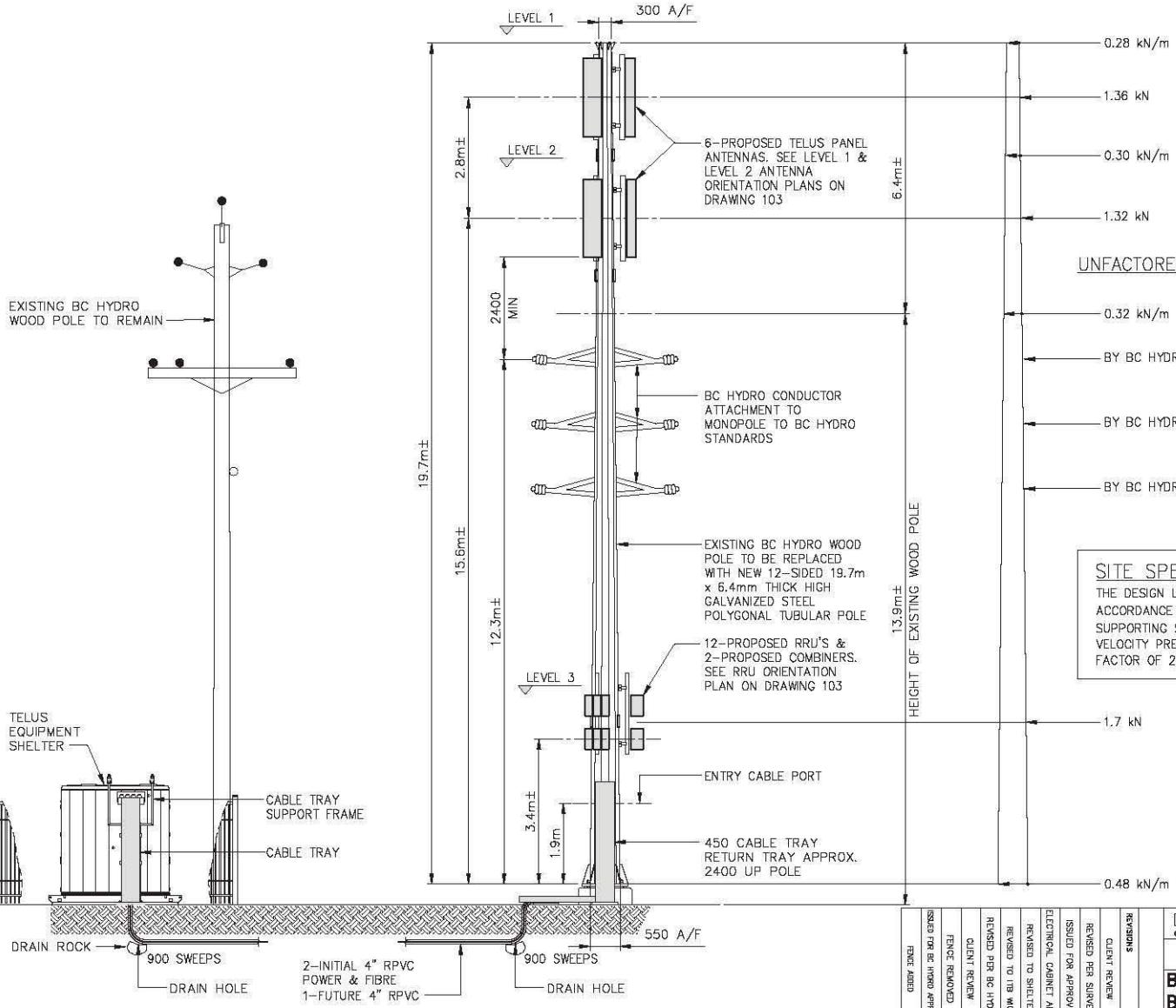
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CONSULTING ENGINEERS
1563 W. 4TH AVE. VANCOUVER, BRITISH COLUMBIA V6J 1M5

RKTG DRAWING No.: **B19-2377-101** REV. 11

BC1294 - 162 ST. & 92 AVE.
BC HYDRO TRANSMISSION/DIST. WOOD POLE
EQUIPMENT LAYOUT PLAN

ENR: G. ANDERSEN	DATE: JUNE 2013
DR: ED/RJ	PLOT: 1 : 1
CHK: C. ANDERSEN	PLOT DATE:
APP: M. RAMSAY	JAN 23, 2017





SITE SPECIFIC HOURLY WIND PRESSURE
 THE DESIGN LOADS ON THE STRUCTURE/ANTENNAS TO BE DETERMINED IN ACCORDANCE WITH CAN/CSA STD. S37-13, "ANTENNAS, TOWERS AND ANTENNA SUPPORTING STRUCTURES," USING A 50 YEAR RETURN PERIOD REFERENCE WIND VELOCITY PRESSURE $q_{50}=0.440 \text{ kPa}$ WITH A GUST FACTOR OF 2.5 AND AN ALLOWANCE FOR 12.5mm GLAZE ICE.

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EAST ELEVATION OF POLES
 1 : 100


REVISIONS	DATE	NO.
CLIENT REVIEW	AUG. 01	1
REVISED PER SURVEY	FEB. 11	2
ISSUED FOR APPROVAL	FEB. 17	3
ELECTRICAL CABINET ADDED	FEB. 24	4
REVISED TO SHELTER	MAY 05	5
REVISED TO 118 MIC	APR. 28	6
REVISED PER BC HYDRO	2013	7
CLIENT REVIEW	MAY 13	8
FENCE REMOVED	MAY 12	9
ISSUED PER BC HYDRO APPROVAL	JULY 29	10
FENCE ADDED	JAN. 23	11

ROBERTSON KOLBEINS TEEVAN GALLAHER ASSOCIATES LTD
 CONSULTING ENGINEERS 1263 W. 4TH AVE. VANCOUVER, BRITISH COLUMBIA V6Z 1M5

RKTG DRAWING No.: **B19-2377-102** REV. 11

BC1294 - 162 ST. & 92 AVE.
BC HYDRO TRANSMISSION/DIST. WOOD POLE
EAST ELEVATION OF MONOPOLE

ENR: G. ANDERSEN	DATE: JUNE 2013
DR: E. DAUZ	PLOT: 1 : 1
CHK: C. ANDERSEN	PLOT DATE:
APP: M. RAMSAY	JAN 23, 2017



WESPAC MANUFACTURING LTD. CLASS D1 450 WIDE GALVANIZED STEEL SOLID CABLE TRAY WITH 152 (6") RAIL HEIGHT c/w COVERS, REDUCERS, VERTICAL RISERS, HORIZONTAL ELBOWS, HORIZONTAL TEES ETC. REQUIRED FOR A COMPLETE INSTALLATION PROVIDE 600 RADIUS ELOWS FOR CHANGE IN ANY DIRECTION

TELUS EQUIPMENT BUILDING
ITB WIC 5'x8'

COMPOSITE FENCE.
SEE DRAWING 200


CABLE TRAY
SUPPORT FRAME.
SEE DRAWING 105
FOR DETAILS

U/S CABLE TRAY
/SLAB LEVEL

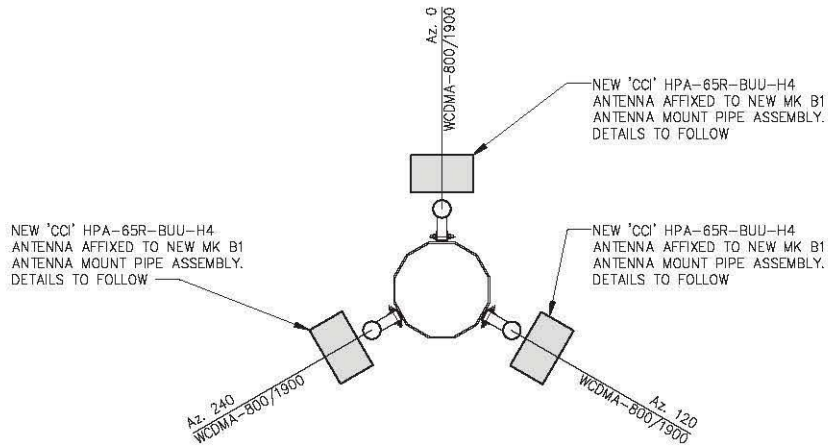
U/G POWER & FIBRE

PARTIAL WEST ELEVATION
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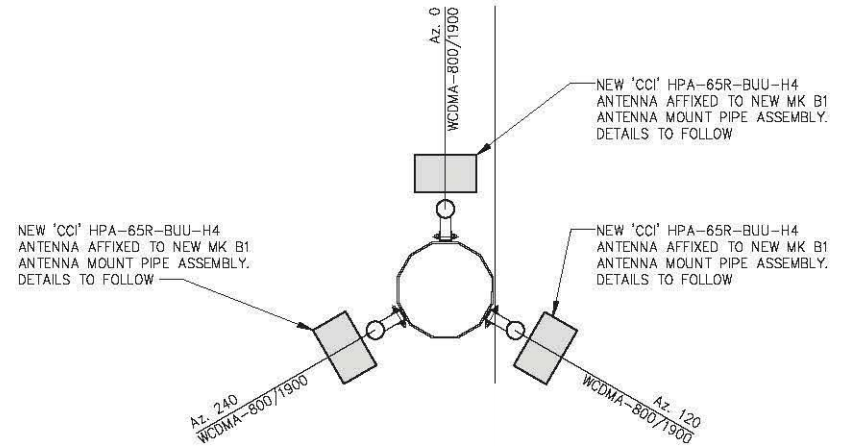
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RKTG	DRAWING No.: B19-2377-102.1 REV. 3
BC1294 - 162 ST. & 92 AVE. BC HYDRO TRANSMISSION/DIST. WOOD POLE EAST ELEVATION OF MONOPOLE	
ENGR: G. ANDERSEN DR: E. DAUZ CHK: C. ANDERSEN APP: M. RAMSAY	DATE: JUNE 2013 PLOT: 1 : 1 PLOT DATE: JAN 23, 2017
	

REVISIONS	DATE	NO.
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ISSUED FOR BC HYDRO APPROVAL	AUG 29	2
FENCE APPROV	JAN 23	3



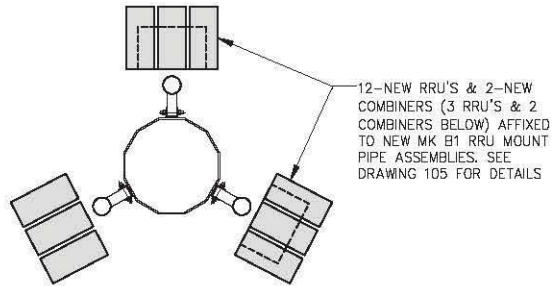
LEVEL 1 ANTENNA ORIENTATION PLAN

1 : 30



LEVEL 2 ANTENNA ORIENTATION PLAN

1 : 30



LEVEL 3 RRU ORIENTATION PLAN

1 : 30

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UNLESS OTHERWISE NOTED

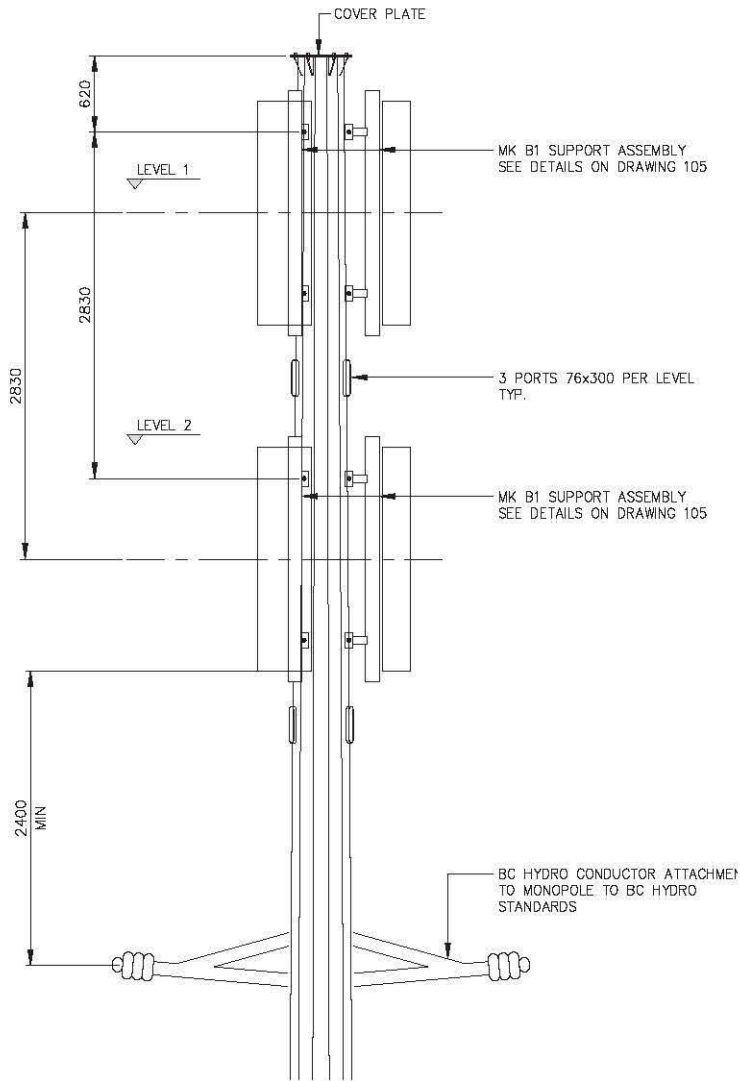
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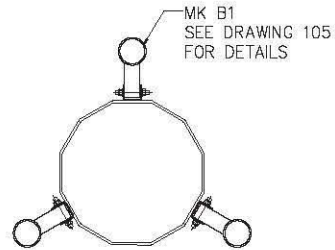
BC1294 - 162 ST. & 92 AVE.
BC HYDRO TRANSMISSION/DIST. WOOD POLE
ANTENNA ORIENTATION PLAN

ENG: G. ANDERSEN DATE: JUNE 2013
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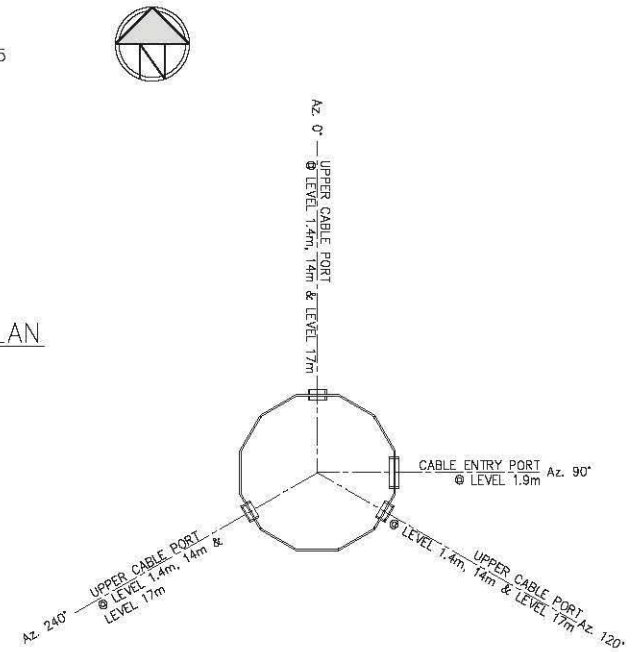
PARTIAL EAST ELEVATION

1:40



ANTENNA SUPPORT FRAMING PLAN

1:20



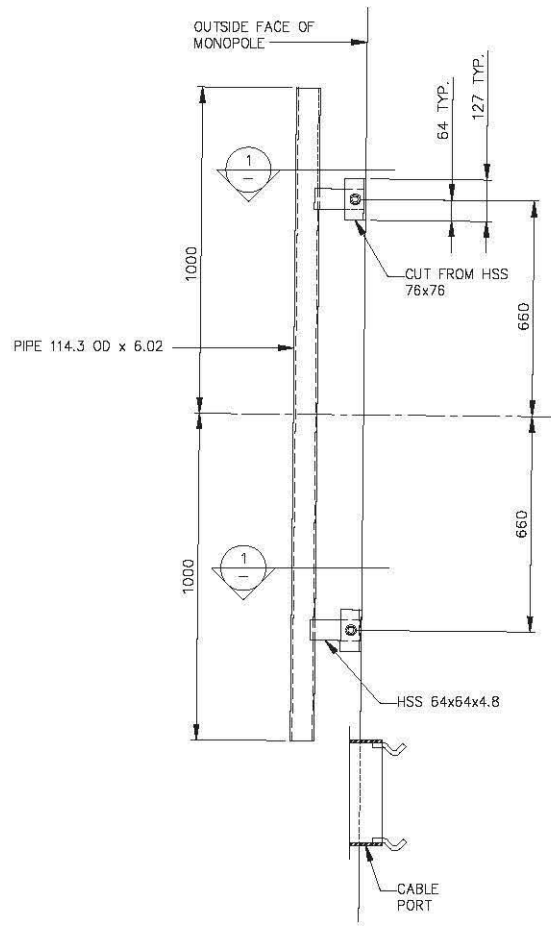
PORT ORIENTATION PLAN

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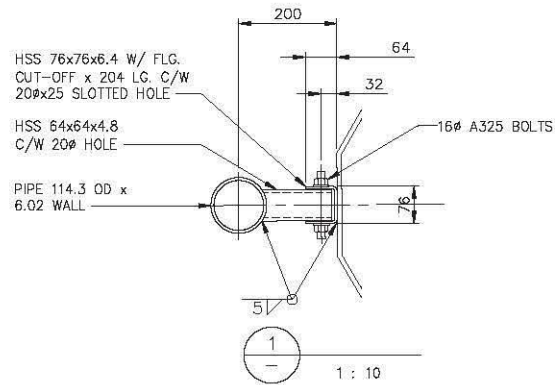
ALL UNITS ARE IN MILLIMETERS
UNLESS OTHERWISE NOTED

REVISIONS		ROBERTSON KOLBEINS TEEVAN GALLAHER ASSOCIATES LTD CONSULTING ENGINEERS 1963 W. 4TH AVE. VANCOUVER, BRITISH COLUMBIA V6J 1M5	
CLIENT REVIEW	DATE	DRAWING No.:	REV. 4
FENCE REMOVED	MAY 13 1	RKTG	B19-2377-104
ISSUED FOR BC HYDRO APPROVAL	MAY 28 2	BC1294 - 162 ST. & 92 AVE.	
FENCE ASBID	JAN 23 3	JOINT USE POLE SITE	
	JAN 23 4	PARTIAL ELEVATION	
		ENG: G. ANDERSEN	DATE: APR 2016
		DR: ANP	PLOT: 1 : 1
		CHK: C. ANDERSEN	PLOT DATE:
		APP: M. RAMSAY	JAN 23, 2017

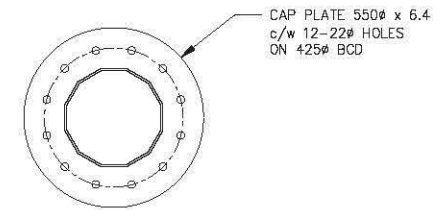




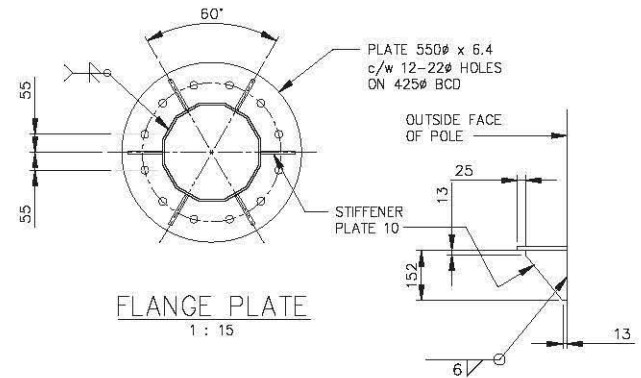
1 : 15



1 : 10



CAP PLATE
1 : 15



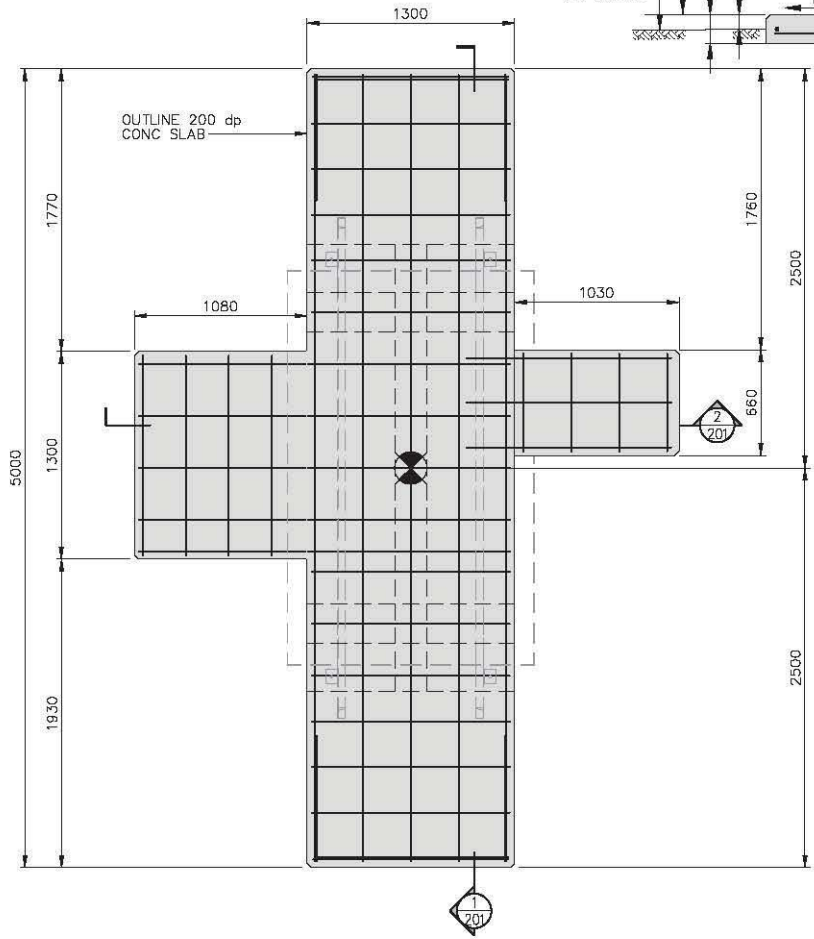
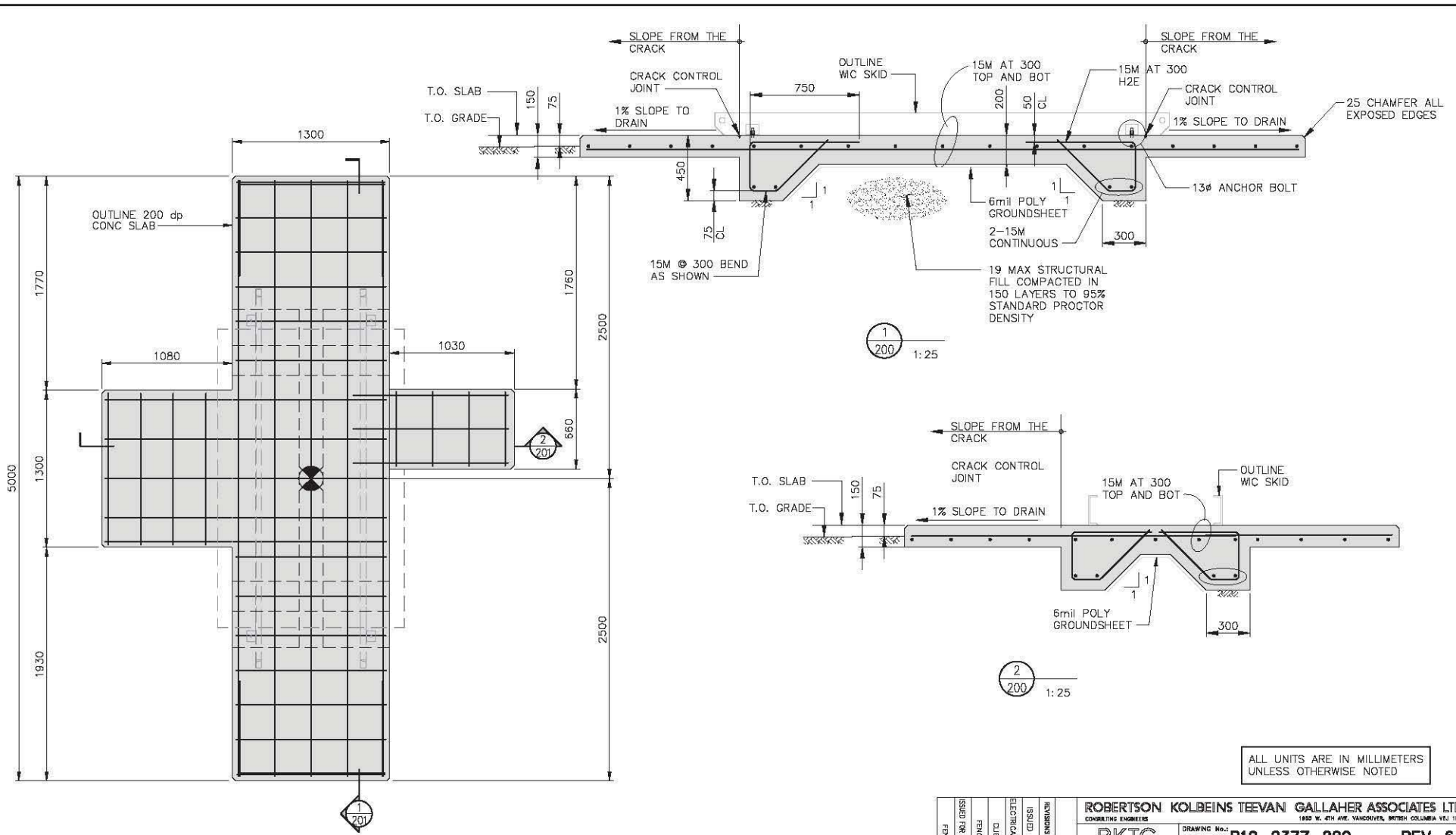
FLANGE PLATE
1 : 15

ALL UNITS ARE IN MILLIMETERS
UNLESS OTHERWISE NOTED

MK_B1 – ANTENNA SUPPORT PIPE ASSEMBLY (9 THUS)

REVISIONS		ROBERTSON KOLBEINS TEEVAN GALLAHER ASSOCIATES LTD CONSULTING ENGINEERS 1963 W. 4TH AVE. VANCOUVER, BRITISH COLUMBIA V6J 1M5	
CLIENT REVIEW	DATE	DRAWING No.: B19-2377-105	REV. 4
ENGINEERED	MAY 13 2016	BC1294 – 162 ST. & 92 AVE.	
PERMIT REVIEW	MAY 13 2016	JOINT USE POLE SITE	
ISSUED FOR BE HBRD APPROVAL	MAY 28 2016	DETAILS AND SECTIONS	
PERMITS APPROVED	JAN 23 2017	ENG: G. ANDERSEN	DATE: APR 2016
		DR: ANP	PLT: 1 : 1
		CHK: G. ANDERSEN	PLT DATE:
		APP: M. RAMSAY	JAN 23, 2017





FOUNDATION PLAN
1:30

ALL UNITS ARE IN MILLIMETERS
UNLESS OTHERWISE NOTED

REVISIONS	DATE	BY
ISSUED FOR APPROVAL	FEB 27 2015	1
ELECTRICAL CABINET ADDED	FEB 24 2015	2
CLIENT REVIEW	MAY 13 2016	3
FENCE REMOVED	JULY 12 2016	4
ISSUED FOR BC HYDRO APPROVAL	JULY 29 2016	5
FENCE ADDED	AUG 27 2017	6

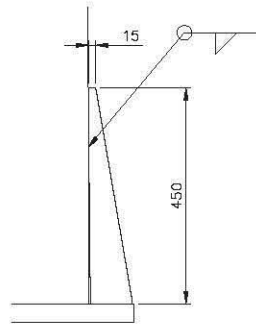
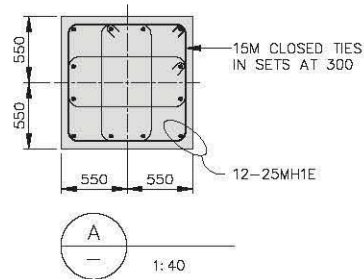
ROBERTSON KOLBEINS TEEVAN GALLAHER ASSOCIATES LTD
CONSULTING ENGINEERS
1880 W. 4TH AVE. VANCOUVER, BRITISH COLUMBIA V6J 1A8

RKTG DRAWING No.: **B19-2377-200** REV. **6**

BC1294 - 162 ST. & 92 AVE.
BC HYDRO TRANSMISSION/DIST. WOOD POLE
EQUIPMENT FOUNDATION PLAN & DETAILS

ENG: G. ANDERSEN DATE: FEB 2015
DR: RJ/ANP PLOT: 1 : 1
CHK: G. ANDERSEN PLOT DATE:
APP: M. RAMSAY JAN 23, 2017

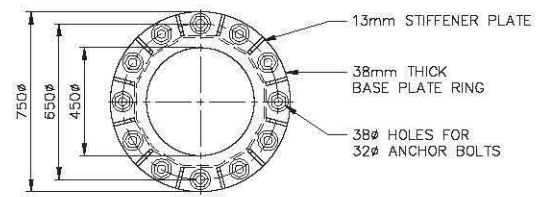
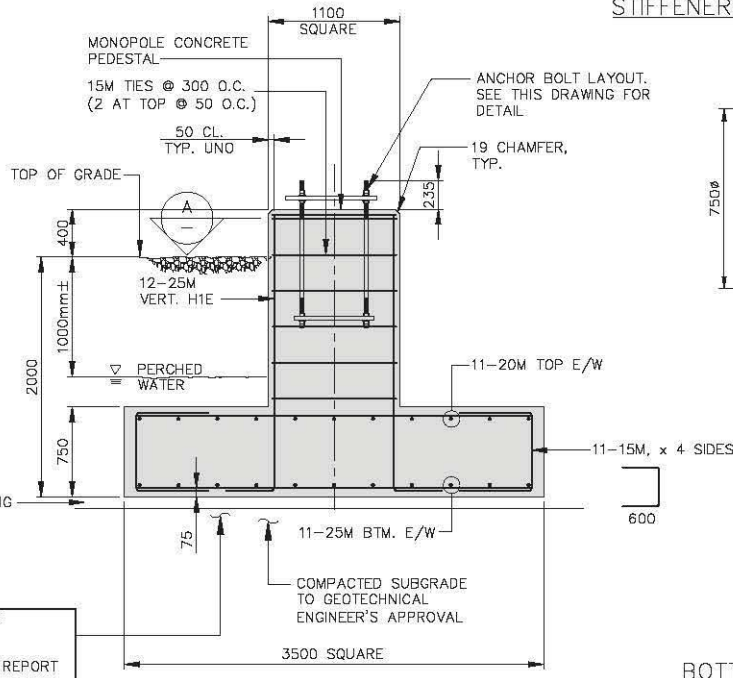
TELUS



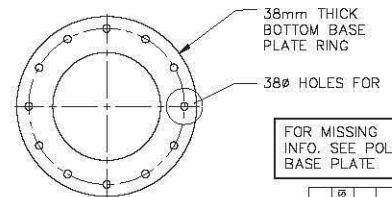
STIFFENER PLATE

CONCRETE

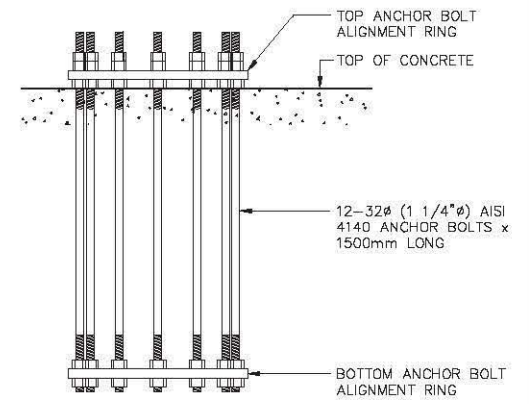
- 1 - ALL CONCRETE WORK INCLUDING DESIGN OF COMPONENTS SHALL BE CARRIED OUT IN ACCORDANCE WITH CSA A23.1/A23.2/A23.3 AND CSA-S37.
- 2 - MINIMUM CONCRETE COVER TO REINFORCING STEEL SHALL BE: CONCRETE CAST AGAINST EARTH = 75mm. FORMED CONCRETE, EXPOSED TO EARTH AND WEATHER = 50mm OR IN ACCORDANCE WITH SECTION A12.6 OF CSA A23.3.
- 3 - MINIMUM CONCRETE STRENGTH SHALL BE 30 MPa AT 28 DAYS. CONCRETE EXPOSED TO FREEZE/THAW CYCLES SHALL BE ENTRAINED AIR IN ACCORDANCE WITH CSA A23.1.
- 4 - PROVIDE DEFORMED REINFORCING STEEL CONFORMING TO CSA G30.18. USE GRADE 300R BARS (OR 300W FOR WELDED REINFORCING STEEL) FOR STIRRUPS AND TIES, AND GRADE 400R (OR 400W FOR WELDED REINFORCING STEEL) BARS FOR ALL OTHER REINFORCING. DETAIL, BEND, PLACE AND SUPPORT REINFORCING STEEL IN CONFORMANCE WITH ACI 315.
- 5 - MINIMUM SOIL BEARING PRESSURE OF SLS 400 kPa, ULS 600 kPa TO BE APPROVED BY GEOTECHNICAL ENGINEER AT GENERAL CONTRACTOR'S EXPENSE.
- 6 - BACKFILL TO BE COMPACTED IN LAYERS TO AT LEAST 95% STANDARD PROCTOR DENSITY. USE IMPORTED GRANULAR MATERIAL OR EXCAVATED NATIVE MATERIAL IF ALLOWED IN THE SOILS REPORT.
- 7 - NOTIFY CONSULTANT WHEN STEEL REINFORCEMENT INSTALLATION IS COMPLETE BEFORE PLACING CONCRETE. 48 HOUR NOTICE SHALL BE GIVEN TO OFFER REASONABLE OPPORTUNITY TO REVIEW WORK FOR COMPLIANCE WITH CONTRACT REQUIREMENTS.



POLE BASE PLATE PLAN



BOTTOM ANCHOR PLATE PLAN



ANCHOR BOLT CAGE

TILL BEARING PRESSURE
SLS 400 kPa
ULS 600 kPa
SEE GEO PACIFIC SOILS REPORT
APRIL 20, 2015

1
200
MONOPOLE FOUNDATION DETAIL
1:40

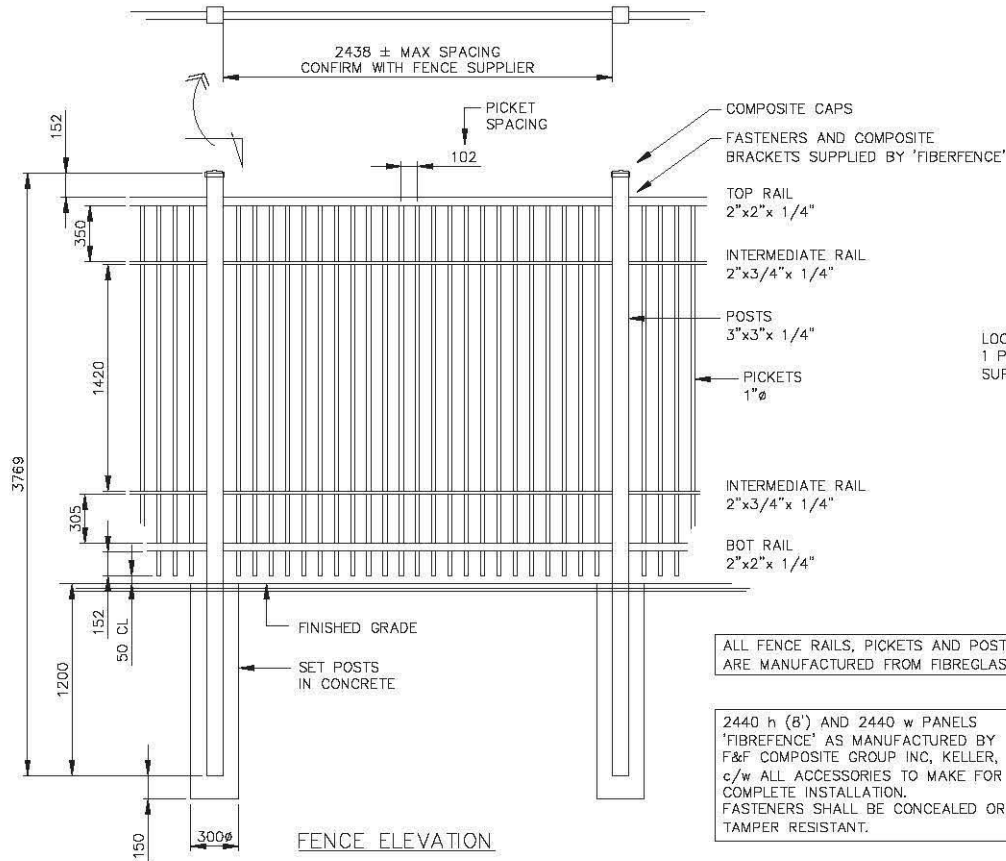
ALL UNITS ARE IN MILLIMETERS
UNLESS OTHERWISE NOTED

FOR MISSING
INFO. SEE POLE
BASE PLATE

ISSUED FOR APPROVAL	DATE
ISSUED FOR APPROVAL	FEB 27 2015
ELECTRICAL CABINET ADDED	FEB 24 2015
CLIENT REVIEW	MAY 13 2015
FENCE REMOVED	JUL 12 2015
ISSUED FOR BC HYDRO APPROVAL	JULY 29 2015
FENCE ADDED	AUG 27 2015

ROBERTSON KOLBEINS TEEVAN GALLAHER ASSOCIATES LTD CONSULTING ENGINEERS 1880 W. 4TH AVE. VANCOUVER, BRITISH COLUMBIA V6J 1A8	
RKTG	DRAWING No.: B19-2377-201 REV. 6
BC1294 - 162 ST. & 92 AVE. BC HYDRO TRANSMISSION/DIST. WOOD POLE MONOPOLE FOUNDATION DETAILS	
ENG: G. ANDERSEN	DATE: FEB 2015
DR: RJ/ANP	PLT: 1 : 1
CHK: G. ANDERSEN	PLT DATE:
APP: M. RAMSAY	JAN 23, 2017



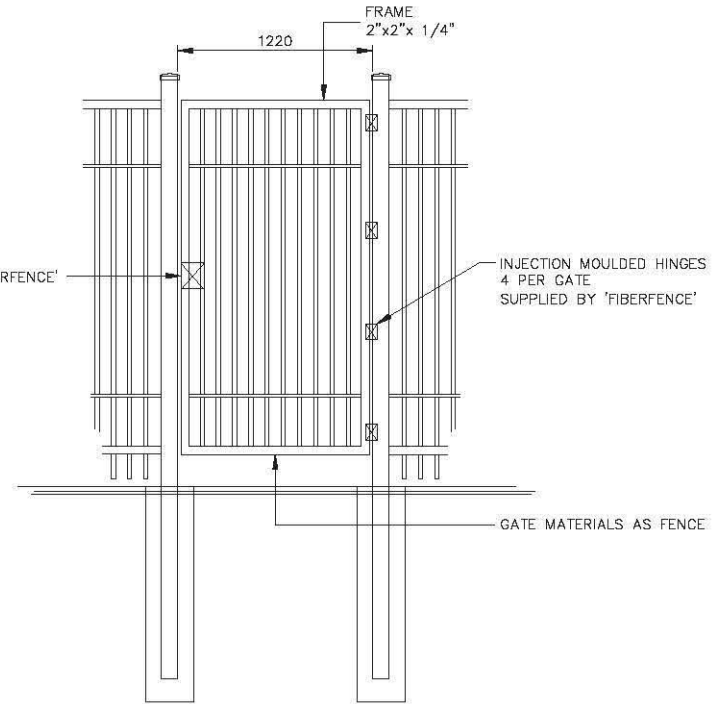


FENCE ELEVATION

COMPOSITE FENCE DETAILS

1:30

LOCKABLE LATCH
1 PER GATE
SUPPLIED BY 'FIBERFENCE'



GATE ELEVATION

ALL UNITS ARE IN MILLIMETERS
UNLESS OTHERWISE NOTED

ENGINEERS FENCE ADDED	ROBERTSON KOLBEINS TEEVAN GALLAHER ASSOCIATES LTD CONSULTING ENGINEERS 1800 W. 4TH AVE. VANCOUVER, BRITISH COLUMBIA V6J 1M8		
	RKTG	DRAWING No.: B19-2377-202	REV. 1
DATE JAN 23 2017	BC1294 - 162 ST. & 92 AVE. BC HYDRO TRANSMISSION/DIST. WOOD POLE FENCE DETAILS		
DATE JAN 23 2017	ENG: G. ANDERSEN	DATE: JAN 2017	TELUS
	DR: R. JOHNSON	PLT: 1 : 1	
	CHK: G. ANDERSEN	PLT DATE:	
	APP: M. RAMSAY	JAN 23, 2017	

CITY OF SURREY

(the "City")

DEVELOPMENT VARIANCE PERMIT

NO.: 7915-0412-00

Issued To: City of Surrey
("the Owner")

Address of Owner: 13450 - 104 Avenue
Surrey, BC V3T 1V8

1. This development variance permit is issued subject to compliance by the Owner with all statutes, by-laws, orders, regulations or agreements, except as specifically varied by this development variance permit.
2. This development variance permit applies to that real property including land with or without improvements located within the City of Surrey, with the legal description and civic address as follows:

Parcel Identifier: 003-027-791
Lot 63 Section 35 Township 2 New Westminster District Plan 70957
15811 - 93A Avenue (Adjacent to 15814 - 95A Avenue)

(the "Land")

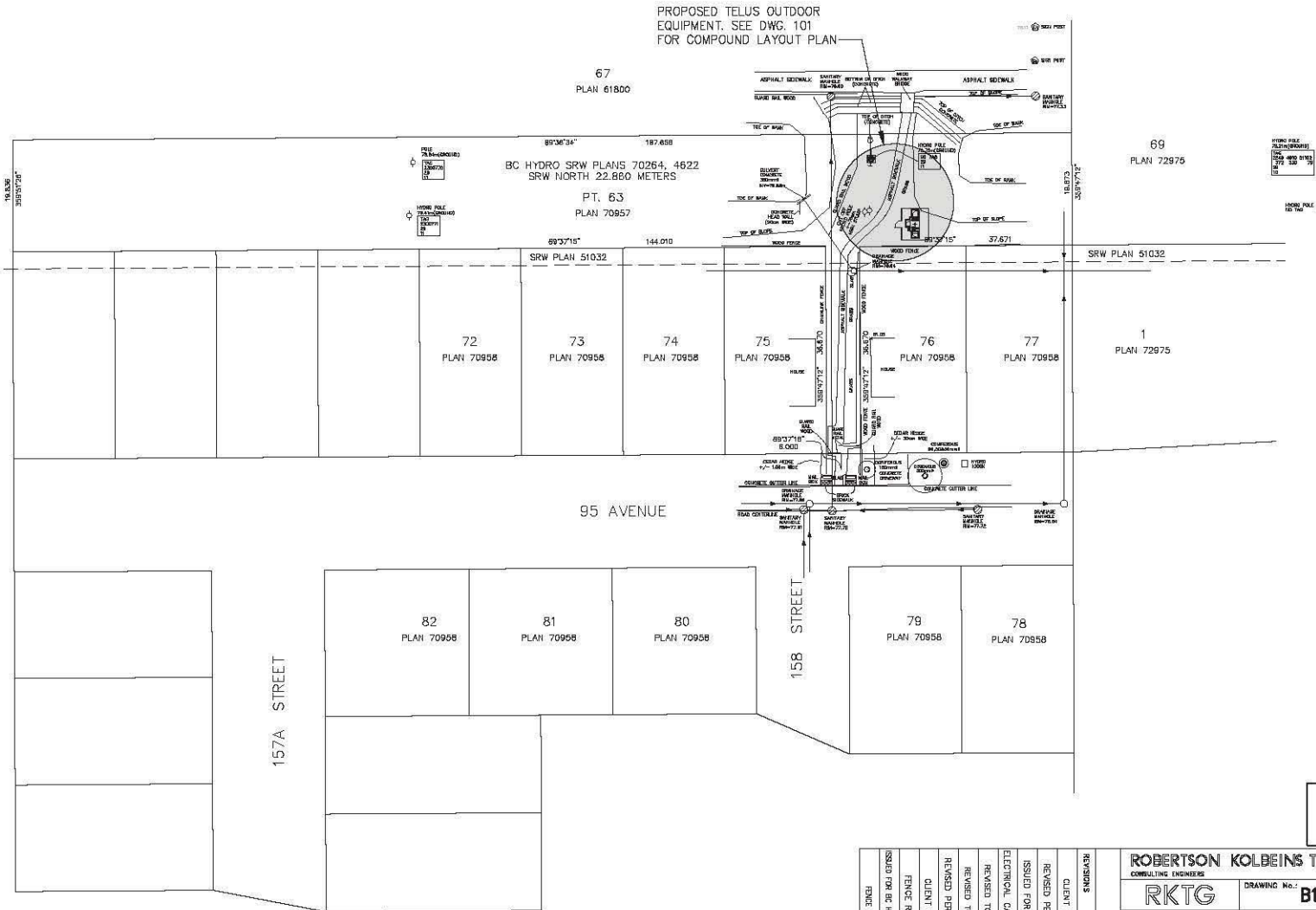
3. Surrey Zoning By-law, 1993, No. 12000, as amended is varied as follows:
 - (a) To vary Sub-section A.1(a)ii.b. of Part 4 General Provisions, to increase the height of a telecommunication tower from 12 metres (40 ft.) to 20 metres (66 ft.).
4. The siting of structures shall be in accordance with the drawings numbered 7915-0412-00(A) through to and including 7915-0412-00(E) (the "Drawings") which are attached hereto and form part of this development variance permit.
5. This development variance permit applies to only that portion of the structures on the Land shown on Schedule A which is attached hereto and forms part of this development variance permit. This development variance permit does not apply to additions to, or replacement of, any of the existing buildings shown on attached Schedule A, which is attached hereto and forms part of this development variance permit.

6. The Land shall be developed strictly in accordance with the terms and conditions and provisions of this development variance permit.
7. This development variance permit shall lapse if the Owner does not substantially start any construction with respect to which this development variance permit is issued, within two (2) years after the date this development variance permit is issued.
8. The terms of this development variance permit or any amendment to it, are binding on all persons who acquire an interest in the Land.
9. This development variance permit is not a building permit.

AUTHORIZING RESOLUTION PASSED BY THE COUNCIL, THE DAY OF , 20 .
ISSUED THIS DAY OF , 20 .

Mayor – Linda Hepner

City Clerk – Jane Sullivan



KEY PLAN
1 : 750

ALL UNITS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED

REVISIONS	DATE	NO.
CLIENT REVIEW	AUG. 01 2011	1
REVISED PER SURVEY	FEB. 11 2011	2
ISSUED FOR APPROVAL	FEB. 17 2011	3
ELECTRICAL CABINET ADDED	FEB. 24 2011	4
REVISED TO SHELTER	MAY 05 2011	5
REVISED TO 118 MIC	APR. 28 2011	6
CLIENT REVIEW	MAY 13 2011	7
FENCE REMOVED	MAY 12 2011	8
ISSUED FOR BC HYDRO APPROVAL	JULY 29 2011	9
FENCE ADDED	JAN. 23 2012	10
		11

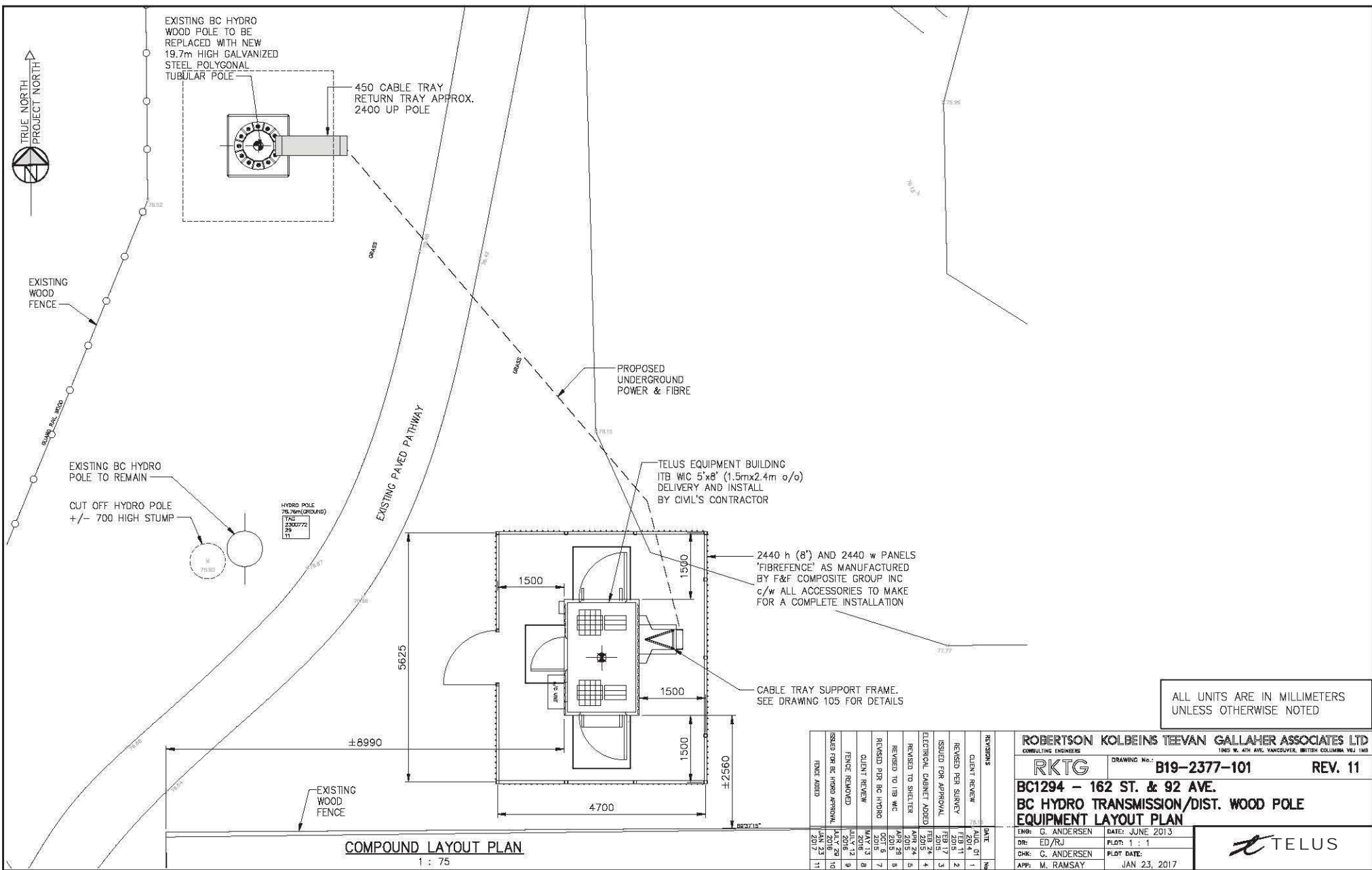
ROBERTSON KOLBEINS TEEVAN GALLAHER ASSOCIATES LTD
CONSULTING ENGINEERS
1943 W. 4TH AVE. VANCOUVER, BRITISH COLUMBIA V6J 1A5

RKTG DRAWING No.: **B19-2377-100** REV. 11

BC1294 - 162 ST. & 92 AVE.
BC HYDRO TRANSMISSION/DIST. WOOD POLE
KEY PLAN

ENG: G. ANDERSEN	DATE: JUNE 2013
DR: E. DAUZ	PLOT: 1 : 1
CHK: C. ANDERSEN	PLLOT DATE:
APP: M. RAMSAY	JAN 23, 2017





ALL UNITS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED

REVISIONS	DATE	BY
CLIENT REVIEW	AUG. 01 1	
REVISED PER SURVEY	FEB 11 2	
ISSUED FOR APPROVAL	FEB 17 3	
ELECTRICAL CABINET ADDED	FEB 24 4	
REMOVED TO SHELTER	MAR 24 5	
REMOVED TO IIB MIC	APR 28 6	
REMOVED PER BC HYDRO	2013 7	
CLIENT REVIEW	MAY 13 8	
FENCE REMOVED	MAY 12 9	
ISSUED PER BC HYDRO APPROVAL	JULY 29 10	
FENCE ADDED	JAN 23 11	

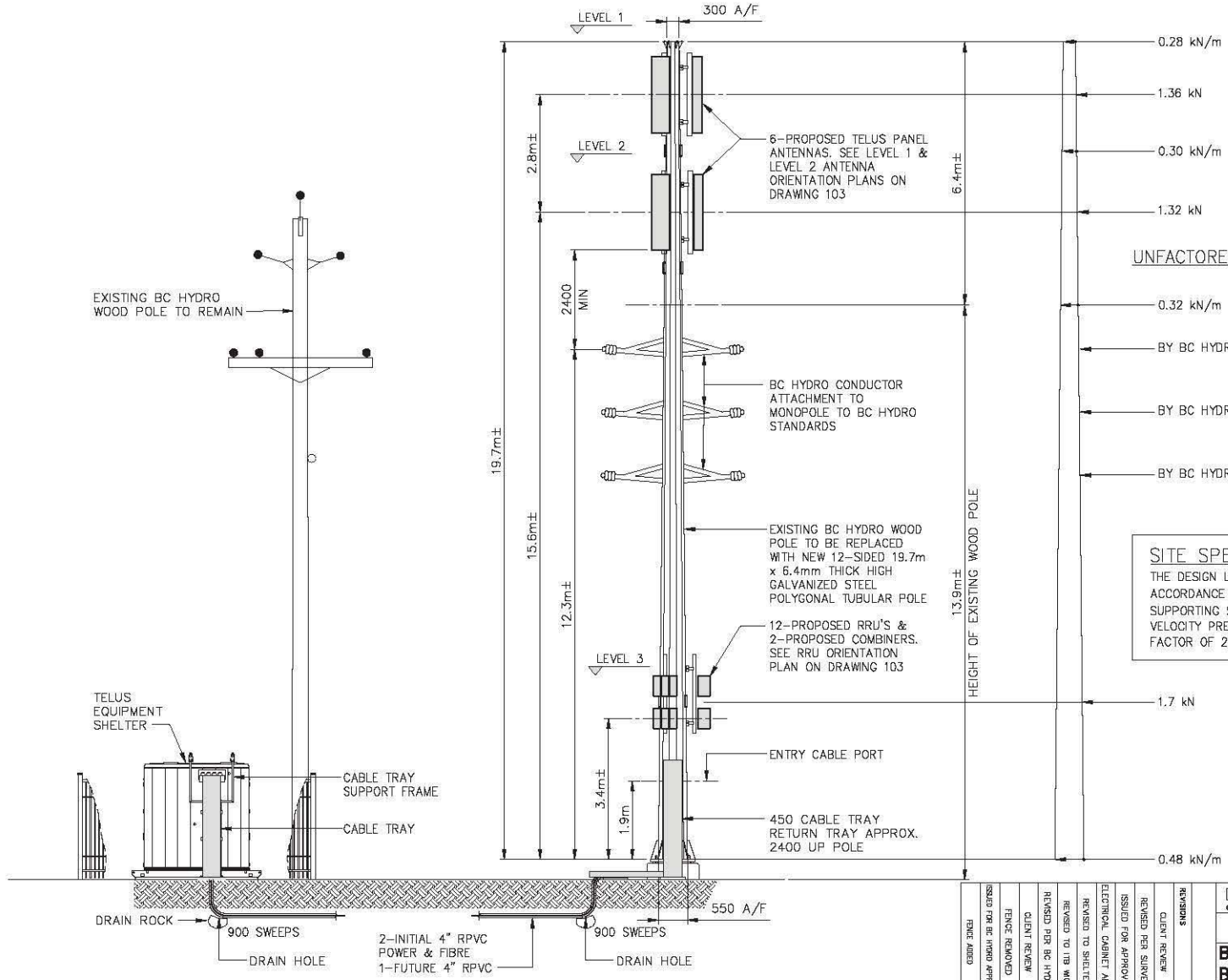
ROBERTSON KOLBEINS TEEVAN GALLAHER ASSOCIATES LTD
CONSULTING ENGINEERS
1943 W. 4TH AVE. VANCOUVER, BRITISH COLUMBIA V6J 1M5

RKTG DRAWING No.: **B19-2377-101** REV. 11

BC1294 - 162 ST. & 92 AVE.
BC HYDRO TRANSMISSION/DIST. WOOD POLE
EQUIPMENT LAYOUT PLAN

ENR: G. ANDERSEN DATE: JUNE 2013
DR: ED/RJ PLOT: 1 : 1
CHK: C. ANDERSEN PLOT DATE:
APP: M. RAMSAY JAN 23, 2017

TELUS



SITE SPECIFIC HOURLY WIND PRESSURE
 THE DESIGN LOADS ON THE STRUCTURE/ANTENNAS TO BE DETERMINED IN ACCORDANCE WITH CAN/CSA STD. S37-13, "ANTENNAS, TOWERS AND ANTENNA SUPPORTING STRUCTURES," USING A 50 YEAR RETURN PERIOD REFERENCE WIND VELOCITY PRESSURE $q_{50}=0.440 \text{ kPa}$ WITH A GUST FACTOR OF 2.5 AND AN ALLOWANCE FOR 12.5mm GLAZE ICE.

ALL UNITS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED

EAST ELEVATION OF POLES
 1 : 100

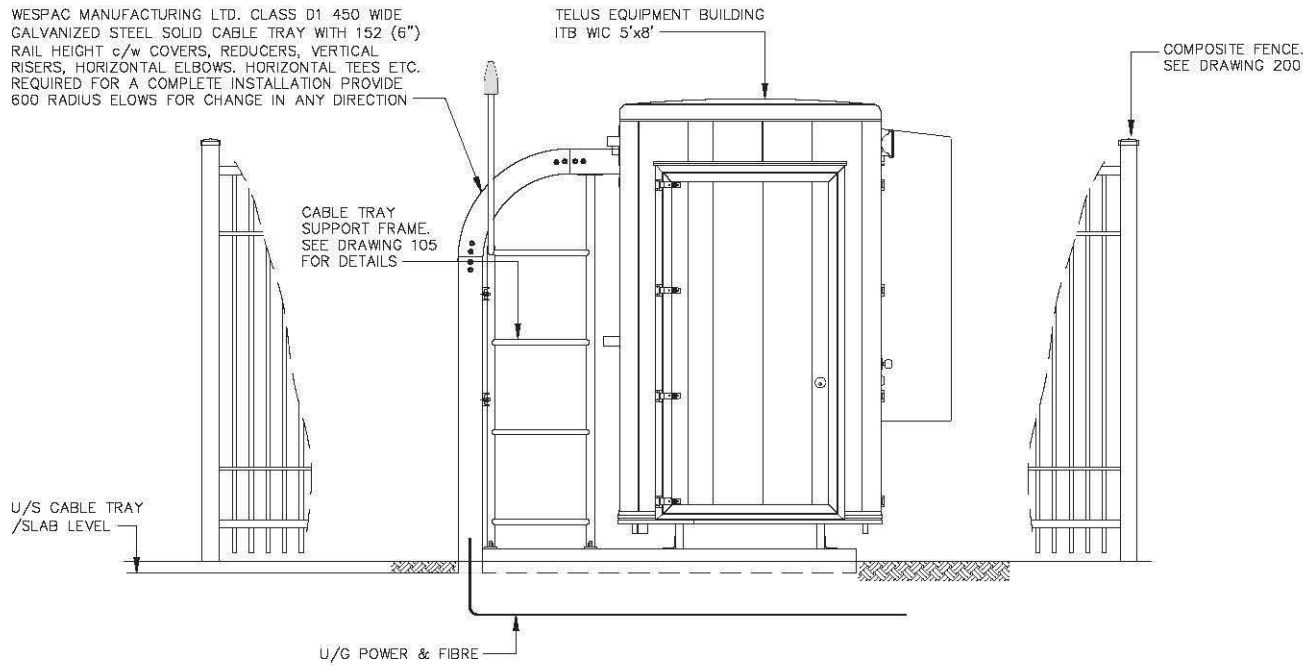
ISSUED FOR BC HYDRO APPROVAL	JAN 23 2013
ENG. APPROV.	JAN 23 2013
CLIENT REVIEW	MAY 13 2013
REVISION TO SHIELD	MAY 12 2013
REVISION TO IIB MIC	MAY 12 2013
REVISION TO SHELTER	MAY 12 2013
ELECTRICAL CABINET ADDED	MAY 12 2013
ISSUED FOR APPROVAL	FEB 24 2013
REVISION PER SURVEY	FEB 17 2013
CLIENT REVIEW	FEB 17 2013
REVISION PER SURVEY	FEB 17 2013
CLIENT REVIEW	AUG 20 2011

ROBERTSON KOLBEINS TEEVAN GALLAHER ASSOCIATES LTD
 CONSULTING ENGINEERS 1260 W. 4TH AVE. VANCOUVER, BRITISH COLUMBIA V6Z 1M5

RKTG DRAWING No.: **B19-2377-102** REV. 11

BC1294 - 162 ST. & 92 AVE.
BC HYDRO TRANSMISSION/DIST. WOOD POLE
EAST ELEVATION OF MONOPOLE

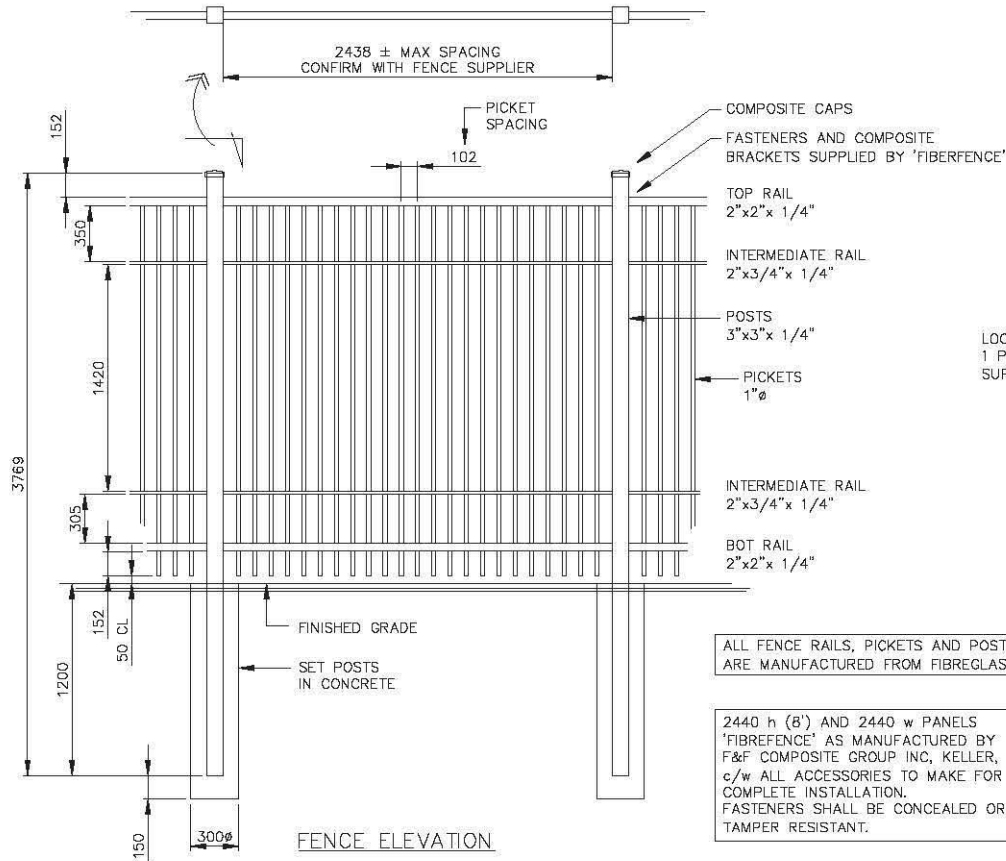
ENG: G. ANDERSEN	DATE: JUNE 2013
DR: E. DAUZ	PLOT: 1 : 1
CHK: C. ANDERSEN	PLOT DATE:
APP: M. RAMSAY	JAN 23, 2017



PARTIAL WEST ELEVATION
1:30

ALL UNITS ARE IN MILLIMETERS
UNLESS OTHERWISE NOTED

ISSUED FOR BC HYDRO APPROVAL FENCE AREA		DATE JULY 12 AUG 29 JAN 23	NO. 1 2 3	ROBERTSON KOLBEINS TEEVAN GALLAHER ASSOCIATES LTD <small>CONSULTING ENGINEERS</small> 1503 W. 4TH AVE. VANCOUVER, BRITISH COLUMBIA V6J 1M5	
REVISIONS		DRAWING No.: B19-2377-102.1		REV. 3	
FENCE REQUIRED		DATE: JUNE 2013		RKTG BC1294 - 162 ST. & 92 AVE. BC HYDRO TRANSMISSION/DIST. WOOD POLE EAST ELEVATION OF MONOPOLE	
ENGR: G. ANDERSEN		DATE: JUNE 2013			
DR: E. DAUZ		PLOT: 1 : 1			
CHK: G. ANDERSEN		PLOT DATE:			
APP: M. RAMSAY		JAN 23, 2017			



FENCE ELEVATION

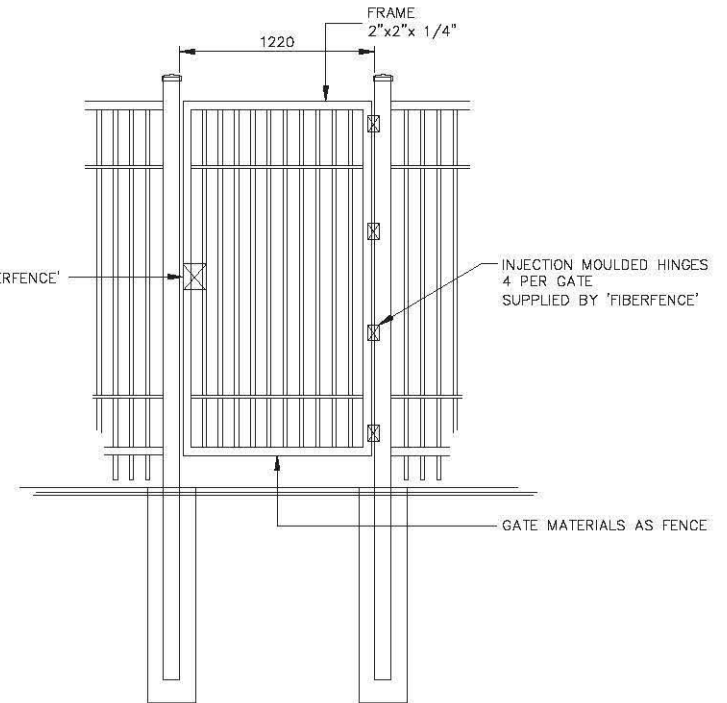
COMPOSITE FENCE DETAILS

1:30

ALL FENCE RAILS, PICKETS AND POST ARE MANUFACTURED FROM FIBREGLASS

2440 h (8') AND 2440 w PANELS 'FIBREFENCE' AS MANUFACTURED BY F&F COMPOSITE GROUP INC, KELLER, TEXAS c/w ALL ACCESSORIES TO MAKE FOR A COMPLETE INSTALLATION. FASTENERS SHALL BE CONCEALED OR TAMPER RESISTANT.

LOCKABLE LATCH 1 PER GATE SUPPLIED BY 'FIBERFENCE'



GATE ELEVATION

ALL UNITS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED

ENGINEERS FENCE ADDED	ROBERTSON KOLBEINS TEEVAN GALLAHER ASSOCIATES LTD CONSULTING ENGINEERS 1800 W. 4TH AVE. VANCOUVER, BRITISH COLUMBIA V6J 1M8		
	RKTG	DRAWING No.: B19-2377-202	REV. 1
DATE JAN 23 2017	BC1294 - 162 ST. & 92 AVE. BC HYDRO TRANSMISSION/DIST. WOOD POLE FENCE DETAILS		
DATE JAN 23 2017	ENG: G. ANDERSEN	DATE: JAN 2017	TELUS
	DR: R. JOHNSON	PLT: 1 : 1	
	CHK: G. ANDERSEN	PLT DATE:	
	APP: M. RAMSAY	JAN 23, 2017	

Appendix IV has been removed under Section 21 of the Freedom of Information
and Protection of Privacy Act

Please contact the Clerks Office should you need any further information.





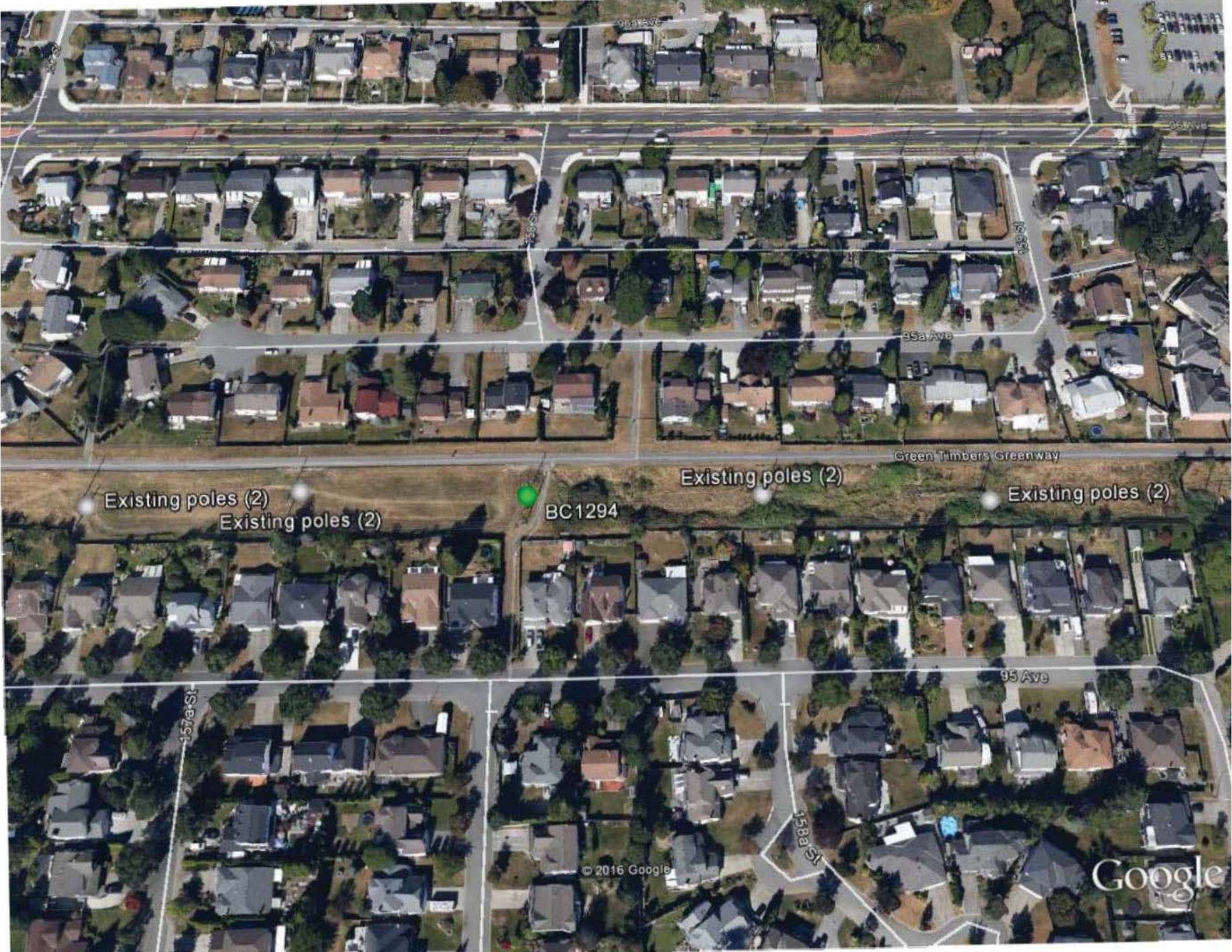
Alternate Designs Explored











Existing poles (2)
Existing poles (2)

BC1294

Existing poles (2)

Existing poles (2)

Green Timbers Greenway

35a Ave

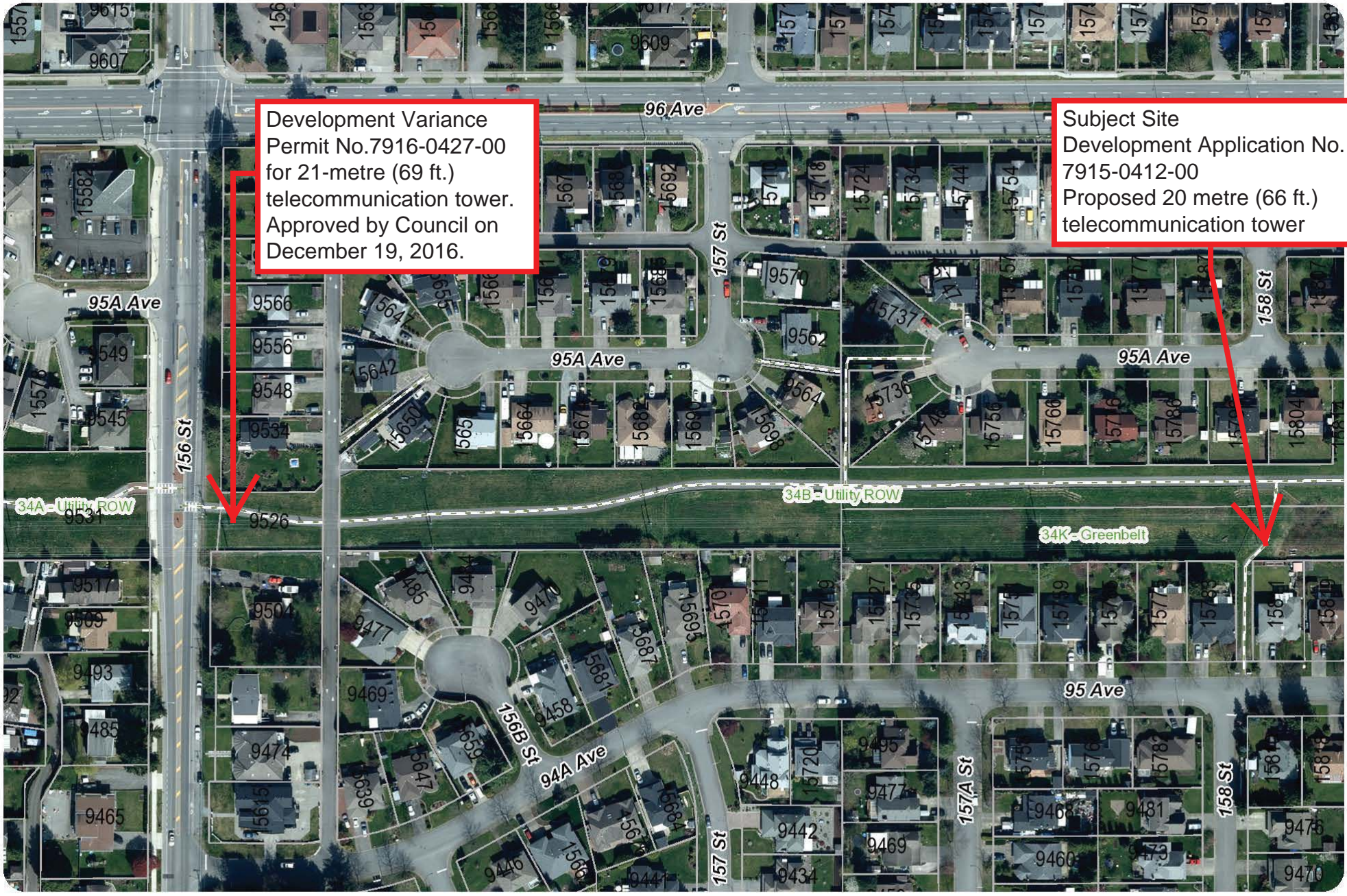
95 Ave

157a St

158a St

© 2016 Google

Google



Development Variance
 Permit No.7916-0427-00
 for 21-metre (69 ft.)
 telecommunication tower.
 Approved by Council on
 December 19, 2016.

Subject Site
 Development Application No.
 7915-0412-00
 Proposed 20 metre (66 ft.)
 telecommunication tower

Enter Map Description

Scale: 1:1,891

The data provided is compiled from various sources and is NOT warranted as to its accuracy or sufficiency by the City of Surrey. This information is provided for information and convenience purposes only. Lot sizes, legal descriptions and encumbrances must be confirmed at the Land Title Office. Use and distribution of this map is subject to all copyright and disclaimer notices at cosmos.surrey.ca



Map created on: 17/11/2016

BC1294

Map of Existing Sites

