

City of Surrey
PLANNING & DEVELOPMENT REPORT

File: 7915-0179-00

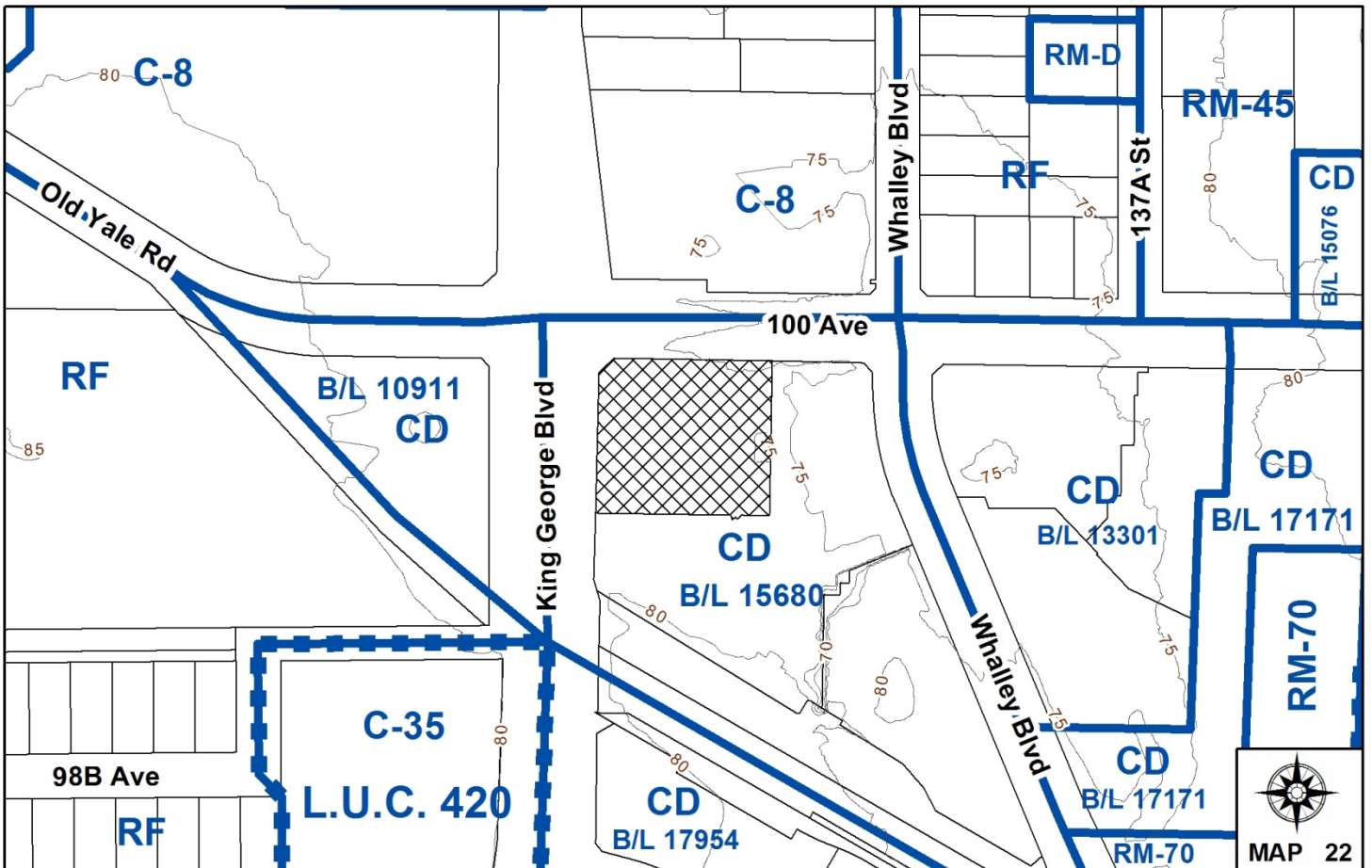
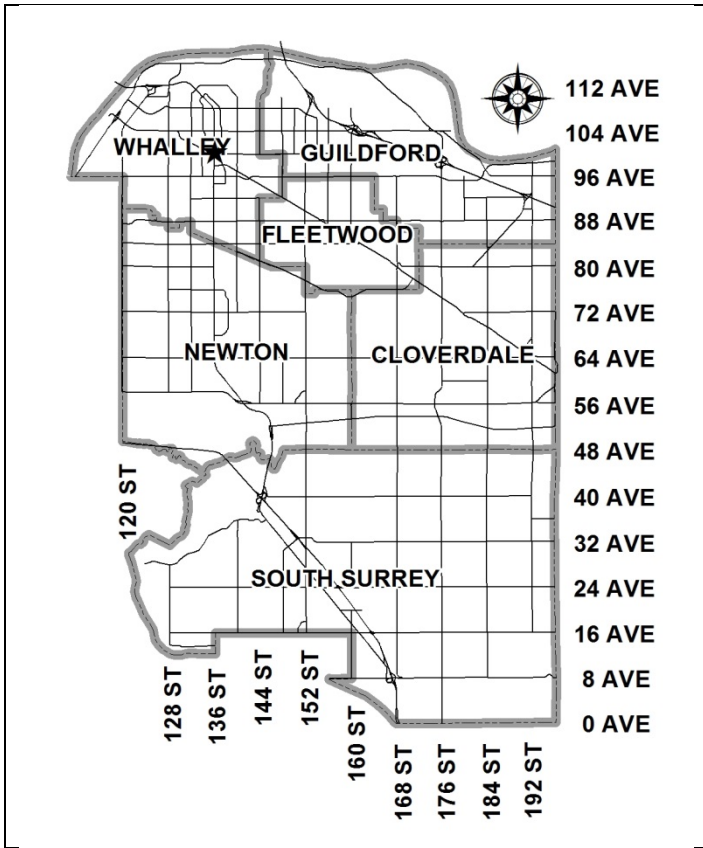
Planning Report Date: July 27, 2015

PROPOSAL:

- **Development Variance Permit**

to permit a 15-metre (49 ft.) high radio communication tower on top of an existing residential high-rise building (Infinity Tower) in City Centre.

LOCATION: 13618 - 100 Avenue
OWNERS: Strata Owners of Plan BCS52785
ZONING: CD By-law No. 15680
OCP DESIGNATION: Central Business District



RECOMMENDATION SUMMARY

- Denial

DEVIATION FROM PLANS, POLICIES OR REGULATIONS

- Seeking a variance to increase the height of a radio communication tower erected upon a building from 3.0 metres (10 ft.) to 15 metres (49 ft.) above the roof of the building on which it is located.

RATIONALE OF RECOMMENDATION

- The proposed 15-metre (49 ft.) high radio communication tower protrudes 7.5 metres (25 ft.) above the 7.5-metre (25 ft.) Infinity Tower parapet. The Infinity Tower is located in a prominent gateway in the City Centre along King George Boulevard next to the King George SkyTrain Station. The design of the proposed radio tower is not integrated into the design/architecture of the Infinity Tower.
- The radio tower design would detract from the architectural character and quality of the Infinity Tower and the remaining Park Place development and is not in keeping with the design intent for City Centre.
- The radio tower would be visible throughout the City Centre area as well as for residents and visitors approaching City Centre from multiple directions.
- Staff have requested that the tower design be revised from its current lattice structure to one that is more streamlined and thinner, however the applicant has advised that the design is required to meet radio frequency engineering requirements.
- To expedite a decision, the applicant has requested to proceed to Council knowing that, should there be Council support, a full Development Permit submission will be required to address form and character.

RECOMMENDATION

The Planning & Development Department recommends that this application be denied.

If, however, Council finds merit in the proposal, it should be referred back to staff to complete the application review process and to require the applicant to install the development proposal sign for the associated Development Permit.

REFERRALS

Engineering: Should the application be supported, Engineering will be requested to provide comments with respect to the proposal.

SITE CHARACTERISTICS

Existing Land Use: Infinity Tower, 36-storey apartment building.

Adjacent Area:

Direction	Existing Use	OCP Designation	Existing Zone
North (Across 100 Avenue):	One-storey multi-tenant commercial building	Central Business District	C-8
East:	Two 35-storey residential towers with ground-oriented townhouses (Development Permit No. 7905-0323-01).	Central Business District	CD (By-law No. 13301)
South:	Two-storey multi-tenant commercial building and King George SkyTrain Station.	Central Business District	CD (By-law No. 15680)
West (Across King George Boulevard):	Holland Park	Central Business District	CD (By-law No. 10911) and RF

DEVELOPMENT CONSIDERATIONSBackground

- The subject site is located at the southeast corner of 100 Avenue and King George Boulevard in the City Centre. The site is zoned CD (By-law No. 15680), designated Central Business District in the Official Community Plan (OCP) and Mixed-Use (5.5 FAR) in the Land Use and Density Concept of the City Centre Plan Update.
- The site is part of a high density, mixed use residential/commercial development approved by Council on July 25, 2005 (File No. 7904-0434-00). The development was originally named Infinity and later renamed to Park Place.

- The subject site consists of a 36-storey residential tower located in the northwest corner of the approved project, which was completed and occupied in 2008. This tower is still commonly referred to as the Infinity Tower.

Current Proposal

- The applicant proposes to install a 15-metre (49 ft.) high radio tower (antenna) on top of the Infinity Tower building. The applicant has provided minutes of the January 20, 2015 Strata Council meeting indicating support for the radio tower installation.
- This proposal requires Council approval of a Development Variance Permit (DVP) as the Zoning By-law requires that communication towers, when erected upon a building, not exceed 3.0 metres (10 ft.) above the height of the building of which it is located (see By-law Variance section). The proposal also requires a Development Permit to address form and character.
- The proposed radio tower is for a new Surrey-based radio station (MySurreyFM 107.7) operating at the 107.7 FM frequency. The applicant is proposing to have their station office located within City Centre.

Proposed Radio Station

- MySurreyFM 107.7 proposes to have a strong emphasis, approximately 30 hours per week, on local news, information, public service announcements and discussion with a mix of adult contemporary music.
- The 107.7 FM frequency is a challenging frequency to work with and requires special radio frequency engineering. The proposed station has a much weaker signal than many other radio stations operating in the region, which have radio towers located on Grouse and Seymour Mountains.
- The 107.7 FM frequency will service primarily the Surrey area and is considered a "drop-in frequency" which requires the tower to be located within the middle of the service area (Appendix IV). The radio range is impacted by neighbouring stations in Seattle, Chilliwack, Salt Spring Island and Gibsons. As such, the applicant requires a tower located centrally within Surrey and the Infinity Tower is among the tallest buildings and sits at 75 metres (246 ft.) geodetic elevation.

Alternate Locations Explored

- The applicant has contacted ownership representatives from several towers within City Centre, as illustrated on Appendix III, and has been turned down by all of them for a variety of reasons.

Alternate Plan

- The applicant was granted a license by Industry Canada in approximately 2013 and due to Industry Canada's timeline, the applicant must be on air by June, 2016 or potentially lose their license.
- Should Council deny the proposed Development Variance Permit (DVP) application, the applicant is open to applying for a Temporary Use Permit (TUP) for a 3-year period and the potential for one, 3-year extension until other options for the radio tower become feasible. This would allow for the applicant to find a better suited location.
- Given the high profile nature of the site and the design of the radio tower, as well as the significant cost of the construction and relocation, staff are not supportive of the TUP option and suggest that the applicant explore alternative locations where the radio tower could be sited, designed, integrated, or screened to be less visible at a suitable permanent location.
- The applicant argues that the TUP will be temporary as it is in the best economic interest to move to a higher structure in the future to have a clearer and stronger signal.
- Staff would also have concerns with a Temporary Use Permit (TUP) proposal given that the costs to install the radio tower will be significant and it would likely be difficult to remove the radio tower upon expiration of the TUP, if an alternative location is not secured by that time and the radio station is up and running.

PRE-NOTIFICATION

- In order to expedite a directive from Council, the proposal is being presented for initial consideration without the necessary development proposal sign being erected on the site for the Development Permit component of the proposal. Should Council deem the proposal to have merit, the applicant would be required to erect a development proposal sign.
- Unlike the Council-endorsed notification process applied to telecommunication tower proposals (City Policy No. O-49), no public consultation has taken place to date for this proposed radio tower. Furthermore, it is unclear what information has been provided to the strata owners of the subject site.

DESIGN PROPOSAL AND REVIEW

- The proposed radio tower is a lattice style tower with radio transmitting antennas affixed in three rows along the upper half.
- The proposed radio tower is approximately 15 metres (49 ft.) in height and is affixed to the roof of the Infinity Tower. An existing penthouse parapet screens approximately 7.5 metres (25 ft.) of the lower half of the tower, which leaves approximately 7.5 metres (25 ft.) of the tower and associated antennae visible (see photo simulation attached as Appendix II).

- The proposed 15-metre (49 ft.) high radio tower base will be located at the top of the approximately 110-metre (361 ft.) tall residential building, resulting in an ultimate height of 125.2 metres (410 ft.).
- Due to radio frequency (RF) engineering requirements, the applicant states that the design of the radio tower has to have three rows of antennae vertically spread over the top 7.5 metres (25 ft.) of the tower. The 1.47-metre (5 ft.) width of the triangular lattice tower is not designed to be structural but rather provides spatial separation between the antennae. The measurement from end of antenna to end of antenna will be more than 1.47-metre (5 ft.) in width likely closer to 3 metres (10 ft.).
- The applicant has submitted a photo simulation/montage of the proposed radio tower as seen from Holland Park, which is west of the site across King George Boulevard (Appendix II). The lattice structure and antennae lack any architectural integrity. Due to the width of the tower and antennae, it is unlikely that the proposed radio tower can be integrated into the design building.

BY-LAW VARIANCE AND JUSTIFICATION

(a) Requested Variance:

- To vary Part 4 General Provisions of Surrey Zoning By-law, 1993, No. 12000, as amended, to increase the maximum height of a telecommunication/radio tower erected on a building, from 3 metres (10 ft.) to 15 metres (49 ft.) above the roof of the building on which is it located.

Applicant's Rationale:

- The proposed 15 metres (49 ft.) height is the minimum height required to meet safety requirements and separation requirements between antennas.
- Several alternate locations have been explored for the proposed radio tower with the subject site having the only willing owners.
- The Infinity Tower has an existing 7.5-metre (25 ft.) parapet which will screen half of the 15-metre (49 ft.) tower. Infinity Tower is one of the only towers in City Centre with a large penthouse parapet which screens approximately half of the tower height.
- The variance is required in order to provide a Surrey radio station which provides an important social benefit to Surrey. Market research has determined that there is a need for a Surrey focused radio station as Surrey residents see themselves as separate and distinct from Vancouver. The proposed radio station will have a studio in Surrey City Centre.
- The radio station will be vital for getting important information out to Surrey citizens concerning new initiatives in the city and traffic information.
- Gateway Station (13401 – 108 Avenue) tower has a similar communication tower on its rooftop.

Staff Comments:

- The subject site is a high profile, gateway location in the City Centre along King George Boulevard and next to the King George Sky Train Station.
- The proposed massing and design of the proposed radio tower is incongruent with the design of the existing Infinity Tower and would be highly visible within City Centre and approaching City Centre from multiple directions.
- The design of the radio tower is not aesthetically appropriate and would detract from the architectural character and quality of the Infinity Tower and the remaining Park Place development and is not keeping with the design intent for City Centre.
- The radio tower installed on top of the high-rise building at Gateway Station (13401 - 108 Avenue) was installed for exclusive use of Industry Canada. The City did not have jurisdiction to prohibit the installation of this radio tower.
- Staff would be open to exploring alternate locations with the applicant, where the tower could be sited, designed, integrated or screened to be less visible.
- Staff do not support the requested variance.

CONCLUSION

- In considering the advantages and disadvantages of the proposed radio tower, the Planning and Development Department believes that the negative impacts of the proposal are considerable, and therefore, recommends that this project be denied.
- If Council believes that the merits of the application are sufficient to allow the proposal to proceed, the application should be referred back to staff to complete the application review process and to require the applicant to install the development proposal sign for the associated Development Permit.

INFORMATION ATTACHED TO THIS REPORT

The following information is attached to this Report:

- Appendix I. Lot Owners and Action Summary
- Appendix II. Rendering, Site Plan and Building Elevations
- Appendix III. Alternate Locations Explored
- Appendix IV. Proposed Coverage Map

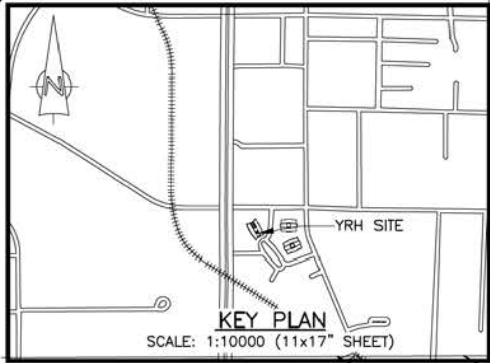
original signed by Judith Robertson

Jean Lamontagne
General Manager
Planning and Development

JKS/da

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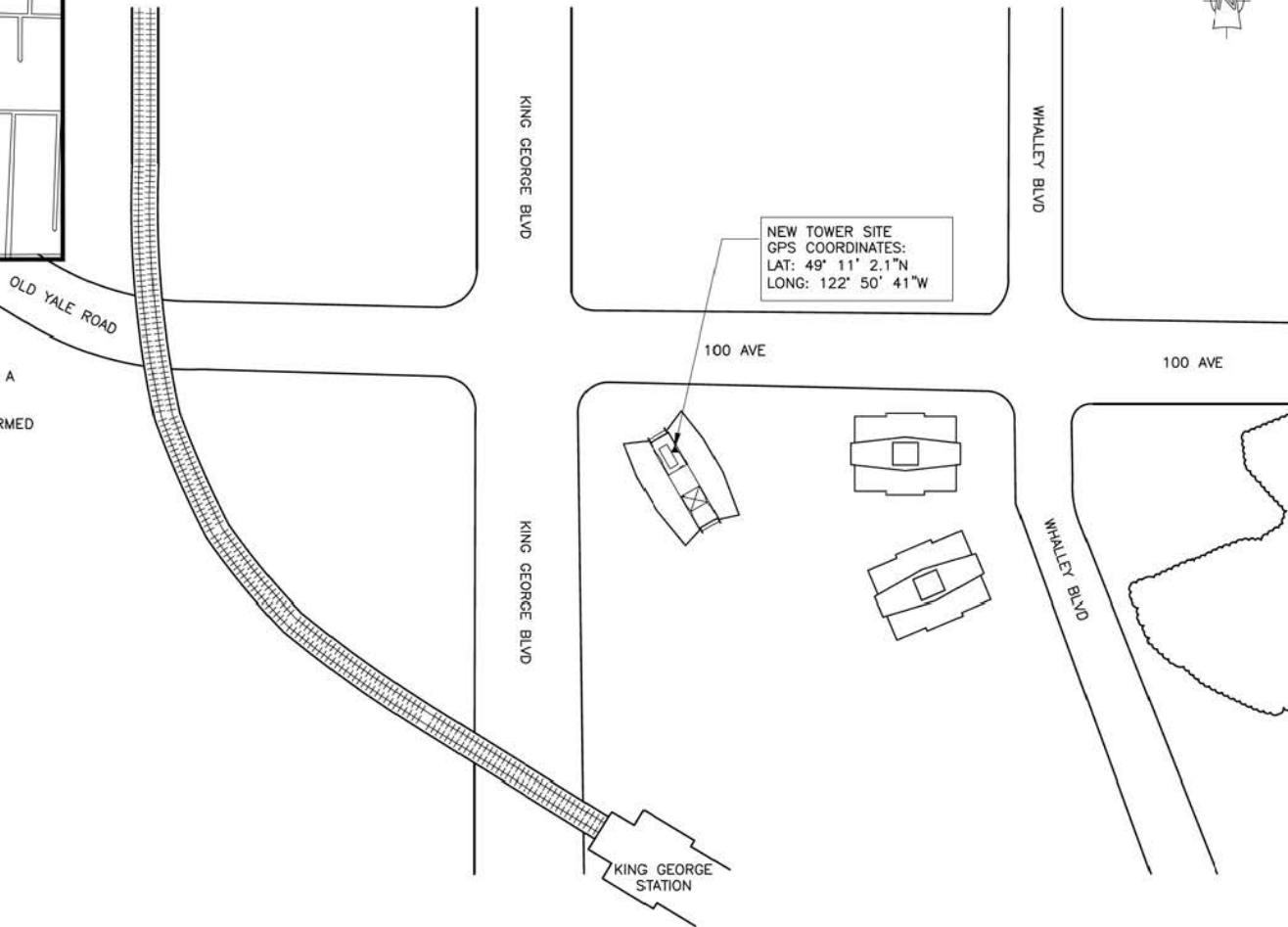


NOTE:

1. SITE PLAN INFORMATION WAS OBTAINED FROM A SATELLITE IMAGE. THIS DRAWING DOES NOT REPRESENT A SURVEY. DIMENSIONS ARE APPROXIMATE ONLY. VARCON HAS NOT CONFIRMED THE ACCURACY OF INFORMATION DEPICTED.

LEGEND:

- (E) (E) DENOTES EXISTING
- (E) ROADWAY ALLOWANCE
- (E) HYDRO ONE O/H LINES
- (E) BUILDING
- +++++ (E) RAILWAY LINE
- PROPOSED FENCE
- ~ (E) TREE LINE
- ~ PROPOSED TREE LINE
- PROPOSED ELECTRICAL U/G CONDUCTORS
- UTILITY POLE



SITE PLAN

SCALE: 1:1500 (11x17" SHEET)



CLIENT INFORMATION

CLIENT PROJECT MANAGER:
JOSEPH SADOUN
CONSTRUCTION MANAGER

PROJECT INFORMATION

PROJECT TITLE:
NEW TOWER BID DRAWINGS

SITE NAME:
SURREY, BC

DRAWN BY:
JLN

DESIGNED BY:
GRAHAM HICKS, CIVIL TECH.

APPROVED BY:
TREVOR BOLT, P.ENG.

ENGINEERING SEAL

DRAWING TITLE

SITE PLAN

REV.	BY	DATE	DESCRIPTION
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0	JLN	2015-05-20	ISSUED FOR INFORMATION

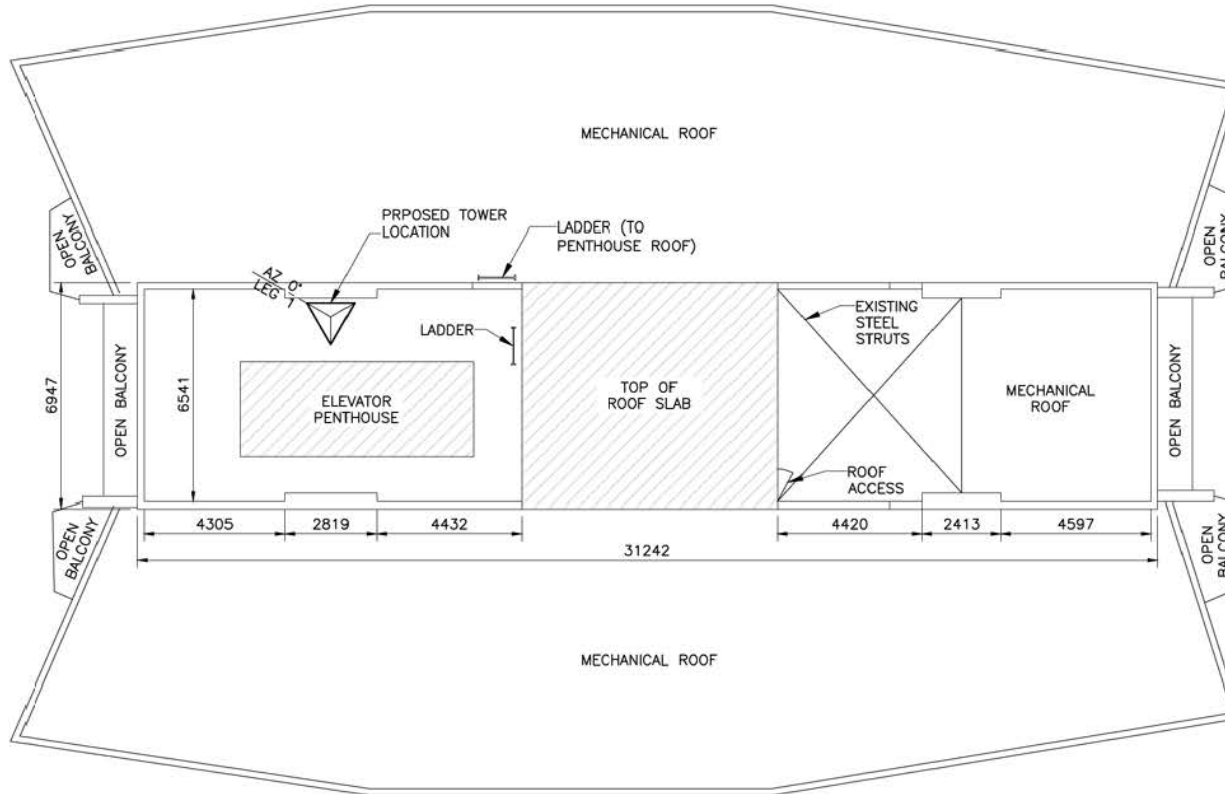
PROJECT NUMBER

50356

SHEET 01

LEGEND:

- (E) (E) DENOTES EXISTING
- (E) ROADWAY ALLOWANCE
- - - - (E) HYDRO ONE O/H LINES
- (E) BUILDING
- PROPOSED FENCE
- PROPOSED 300mm ELECTRICAL CABLE TRAY
- #2/0 AWG BARE Cu. GROUND WIRE 600mm BELOW GRADE
- ⊙ 3m(10') Cu. CLAD STEEL GROUNDING ROD



NEW ROOF PLAN
SCALE: 1:150 (11x17" SHEET)

CLIENT INFORMATION

CLIENT PROJECT MANAGER:
JOSEPH SADOUN
CONSTRUCTION MANAGER

PROJECT INFORMATION

PROJECT TITLE:
NEW TOWER BID DRAWINGS

SITE NAME:
SURREY, BC

DRAWN BY:
JLN

DESIGNED BY:
GRAHAM HICKS, CIVIL TECH.

APPROVED BY:
TREVOR BOLT, P.ENG.

ENGINEERING SEAL

DRAWING TITLE

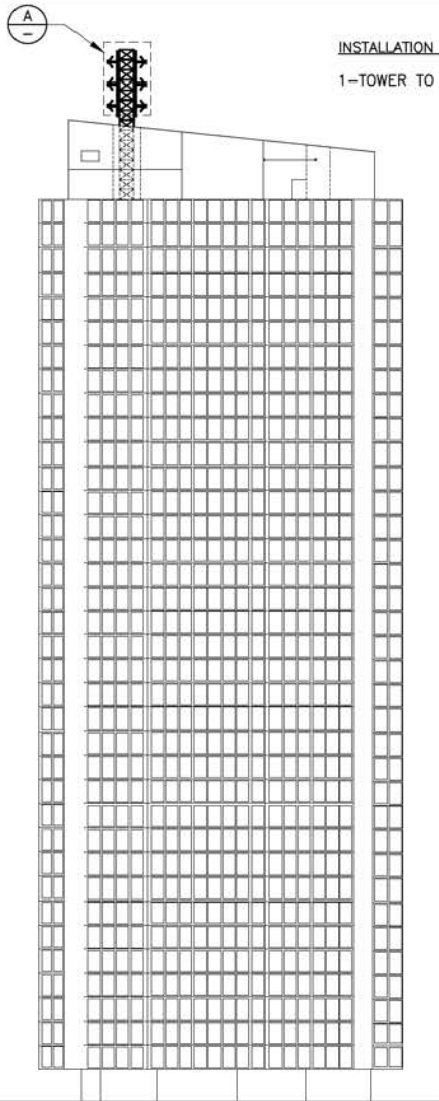
NEW ROOF PLAN

REV.	BY	DATE	DESCRIPTION	PROJECT NUMBER
1	GHI	2015-07-16	ISSUED FOR INFORMATION	50356
0	JLN	2015-05-20	ISSUED FOR INFORMATION	
				SHEET 03

EL. 125.2m
T.O. TOWER

EL. 110.0m
T.O. MECHANICAL
ROOF

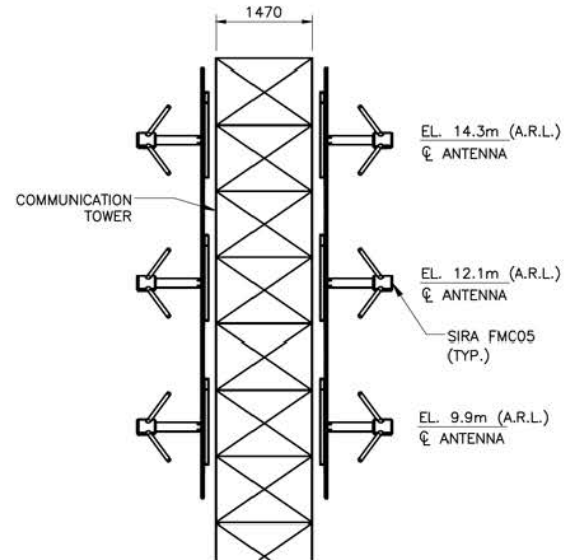
EL. 0.0m
STREET LEVEL



INSTALLATION NOTES:

1-TOWER TO MEET DESIGN REQUIREMENTS OF CSA S37-13.

TOWER ELEVATION (SOUTHWEST OF BUILDING)
SCALE 1:500 (11x17" SHEET)



A ANTENNA MOUNTING DETAIL
SCALE 1:75 (11x17" SHEET)



CLIENT INFORMATION

CLIENT PROJECT MANAGER:
JOSEPH SADOUN
CONSTRUCTION MANAGER

PROJECT INFORMATION

PROJECT TITLE:
NEW TOWER BID DRAWINGS

SITE NAME:
SURREY, BC

DRAWN BY:
JLN

DESIGNED BY:
GRAHAM HICKS, CIVIL TECH.

APPROVED BY:
TREVOR BOLT, P.ENG.

ENGINEERING SEAL

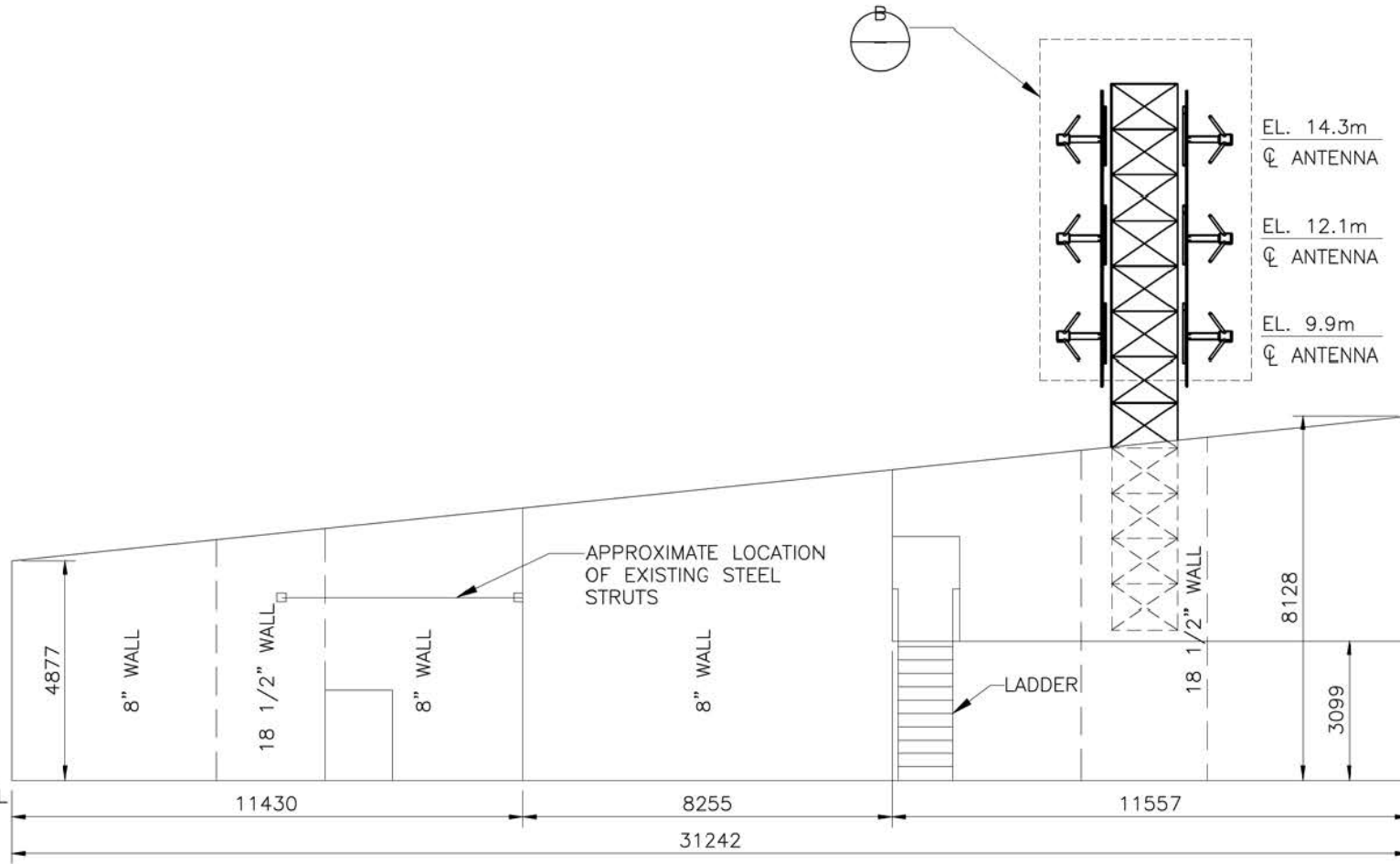
DRAWING TITLE

TOWER ELEVATION

REV.	BY	DATE	DESCRIPTION	PROJECT NUMBER
2	GHI	2015-07-16	ISSUED FOR INFORMATION	50356
1	GHI	2015-06-11	ISSUED FOR INFORMATION	
0	JLN	2015-05-20	ISSUED FOR INFORMATION	
				SHEET 04

EL. 15.2m
T.O. TOWER

EL. 0.0m
T.O. MECHANICAL
ROOF



TOWER ELEVATION (NORTH EAST OF PENTHOUSE)

SCALE 1:150 (11x17" SHEET)



CLIENT INFORMATION

CLIENT PROJECT MANAGER:
JOSEPH SADOUN
CONSTRUCTION MANAGER

PROJECT INFORMATION

PROJECT TITLE:
NEW TOWER BID DRAWINGS

SITE NAME:
SURREY, BC

DRAWN BY:
JLN

DESIGNED BY:
GRAHAM HICKS, CIVIL TECH.

APPROVED BY:
TREVOR BOLT, P.ENG.

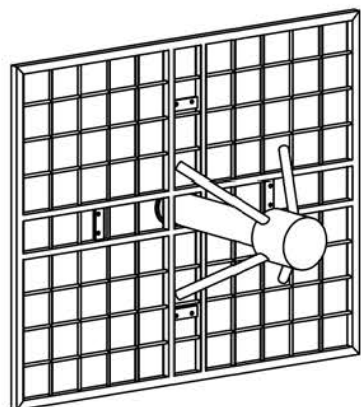
ENGINEERING SEAL

DRAWING TITLE
PENTHOUSE ELEVATION

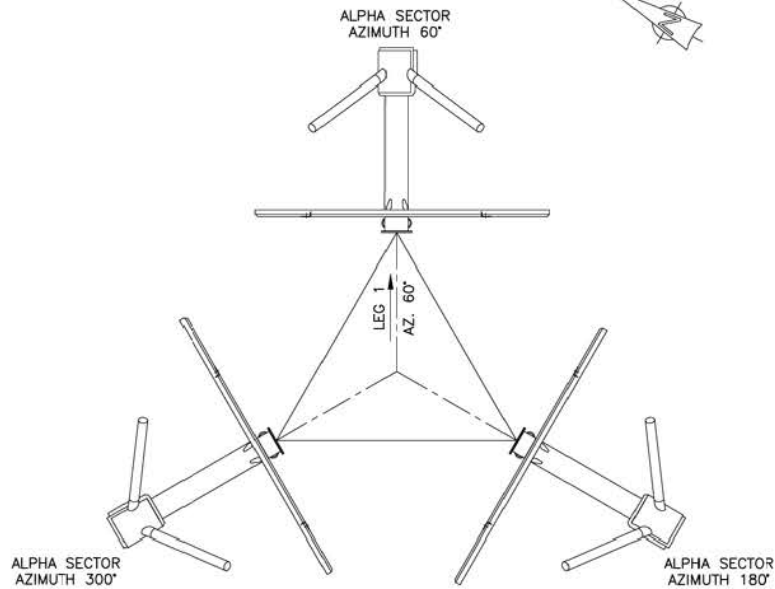
REV.	BY	DATE	DESCRIPTION
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0	GHI	2015-06-17	ISSUED FOR INFORMATION

PROJECT NUMBER
50356

SHEET 05



ANT. TYPE: SIRA CIRCULAR POLARIZATION
 MODEL: FMC-05
 HEIGHT: 2200mm
 WIDTH: 1800mm
 WEIGHT: 82kg



TYPICAL ANTENNA LAYOUT

SCALE 1:30 (11x17" SHEET)

CLIENT INFORMATION

CLIENT PROJECT MANAGER:
 JOSEPH SADOUN
 CONSTRUCTION MANAGER

PROJECT INFORMATION

PROJECT TITLE:
 NEW TOWER BID DRAWINGS

SITE NAME:
 SURREY, BC

DRAWN BY:
 JLN

DESIGNED BY:
 GRAHAM HICKS, CIVIL TECH.

APPROVED BY:
 TREVOR BOLT, P.ENG.

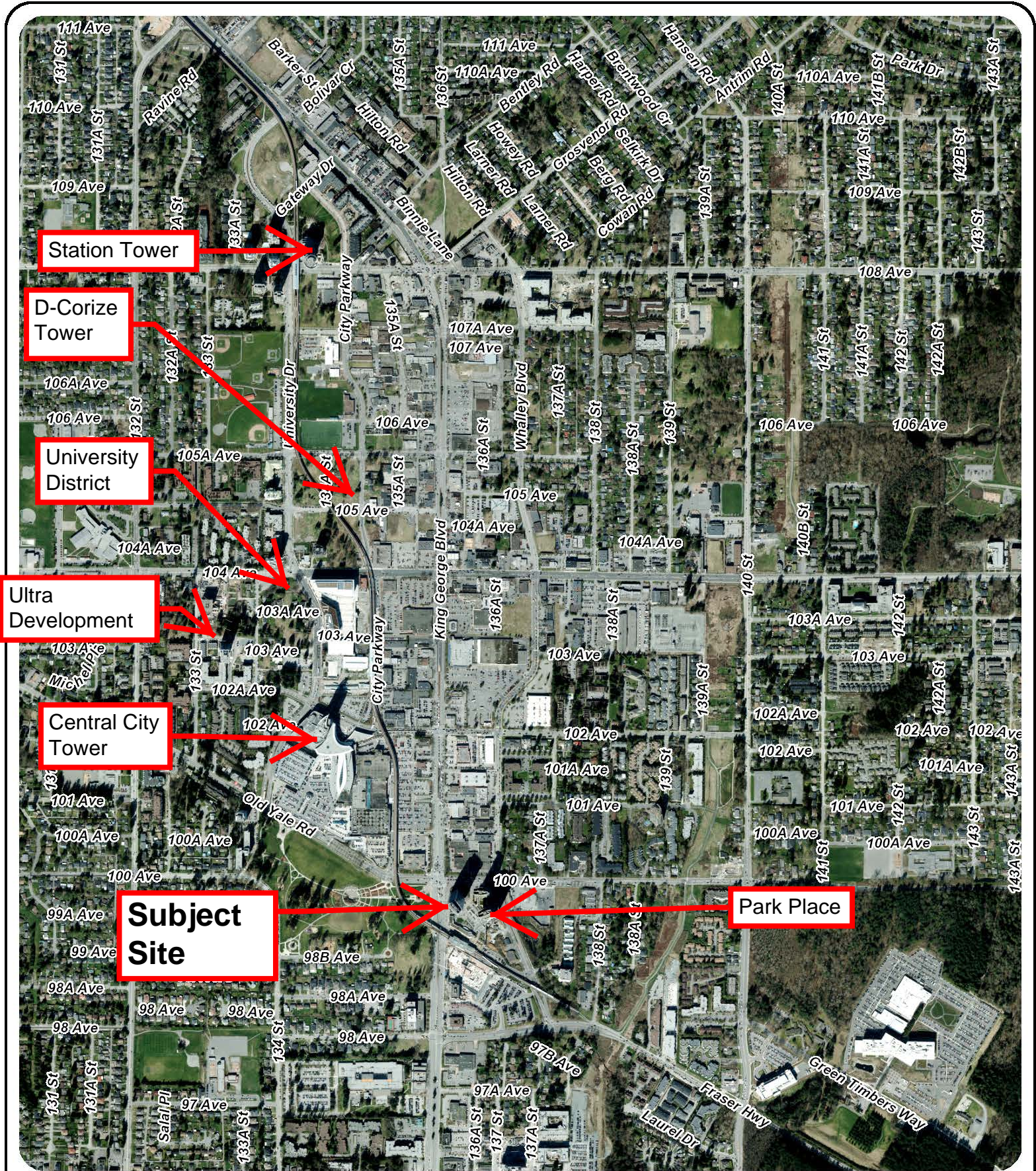
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DRAWING TITLE

ANTENNA DETAILS

				PROJECT NUMBER
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0	JLN	2015-05-20	ISSUED FOR INFORMATION	SHEET 07
REV.	BY	DATE	DESCRIPTION	

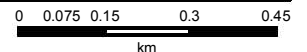
Alternate Locations Explored

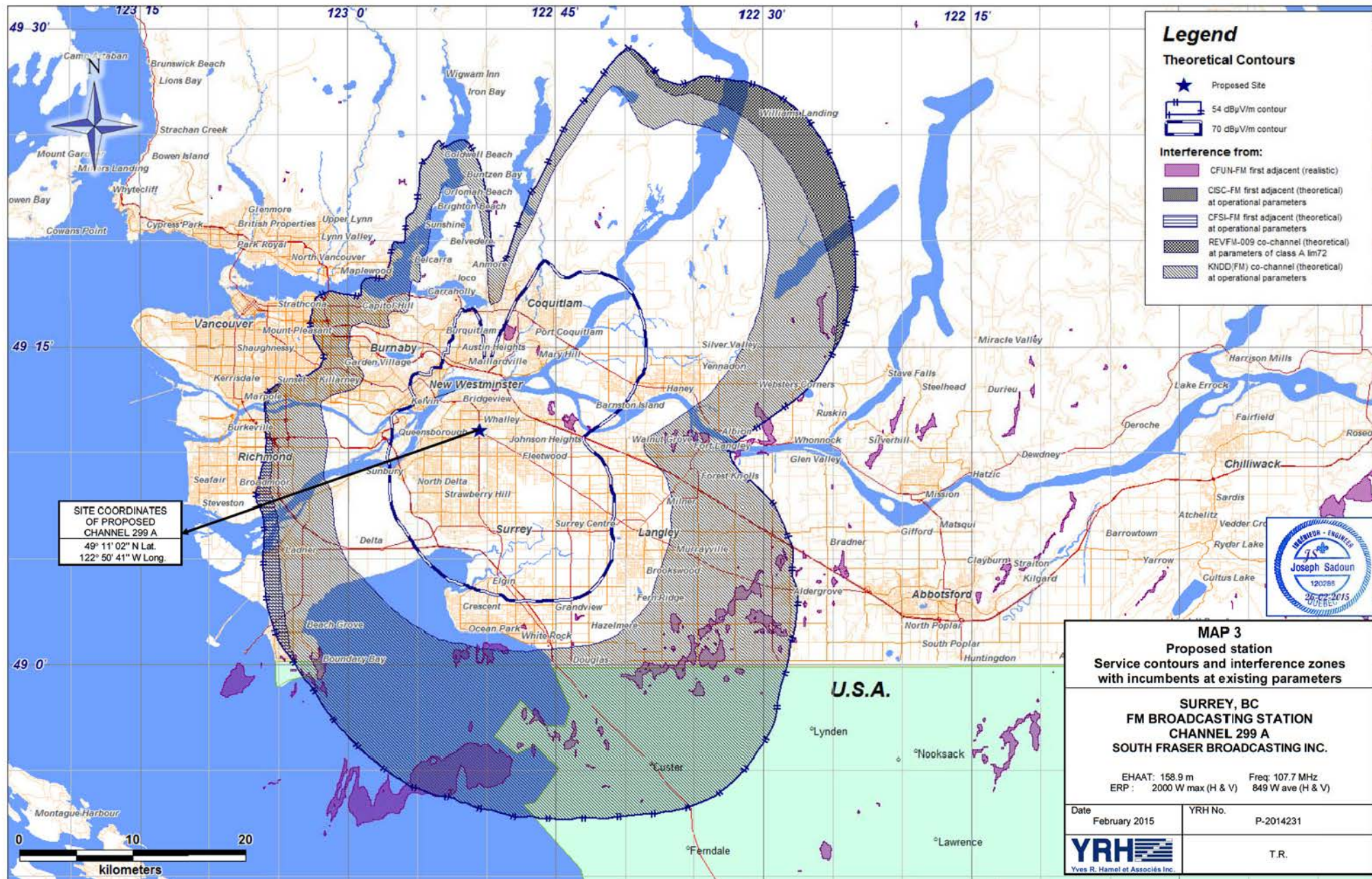


Enter Map Description

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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





Legend

Theoretical Contours

- ★ Proposed Site
- ▭ 54 dBµV/m contour
- ▭ 70 dBµV/m contour

Interference from:

- ▭ CFUN-FM first adjacent (realistic)
- ▭ CISC-FM first adjacent (theoretical) at operational parameters
- ▭ CFSI-FM first adjacent (theoretical) at operational parameters
- ▭ REVFM-009 co-channel (theoretical) at parameters of class A 1m72
- ▭ KNDD(FM) co-channel (theoretical) at operational parameters

SITE COORDINATES OF PROPOSED CHANNEL 299 A
 49° 11' 02" N Lat.
 122° 50' 41" W Long.

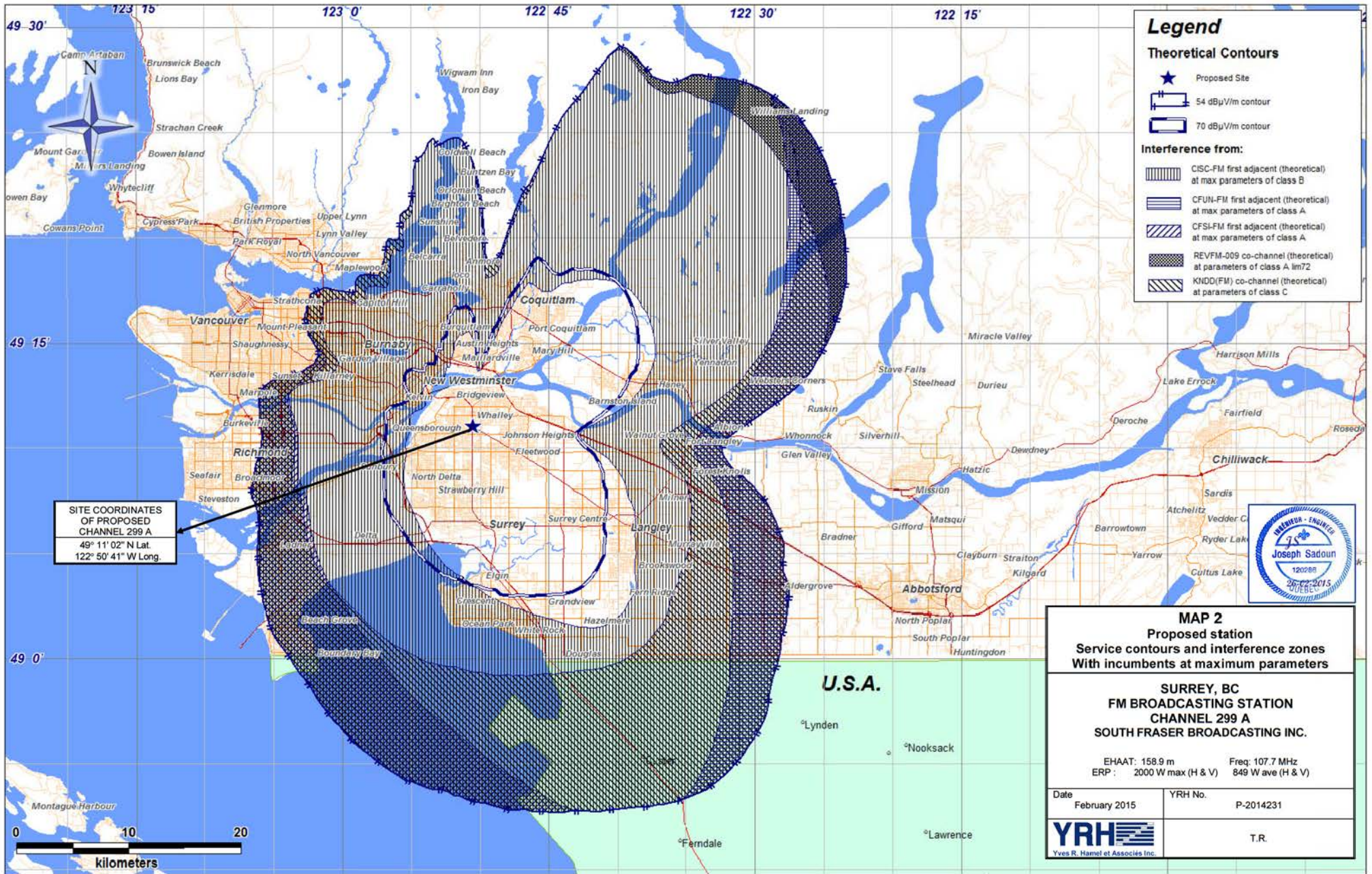


MAP 3
Proposed station
Service contours and interference zones
with incumbents at existing parameters

SURREY, BC
FM BROADCASTING STATION
CHANNEL 299 A
SOUTH FRASER BROADCASTING INC.

EHAAT: 158.9 m Freq: 107.7 MHz
 ERP: 2000 W max (H & V) 849 W ave (H & V)

Date	February 2015	YRH No.	P-2014231
YRH Yves R. Hamel et Associés Inc.		T.R.	



Legend

Theoretical Contours

- ★ Proposed Site
- 54 dBµV/m contour
- 70 dBµV/m contour

Interference from:

- CISC-FM first adjacent (theoretical) at max parameters of class B
- CFUN-FM first adjacent (theoretical) at max parameters of class A
- CFSI-FM first adjacent (theoretical) at max parameters of class A
- REVM-009 co-channel (theoretical) at parameters of class A 1m72
- KNDD(FM) co-channel (theoretical) at parameters of class C

SITE COORDINATES OF PROPOSED CHANNEL 299 A
 49° 11' 02" N Lat.
 122° 50' 41" W Long.



MAP 2
Proposed station
Service contours and interference zones
With incumbents at maximum parameters

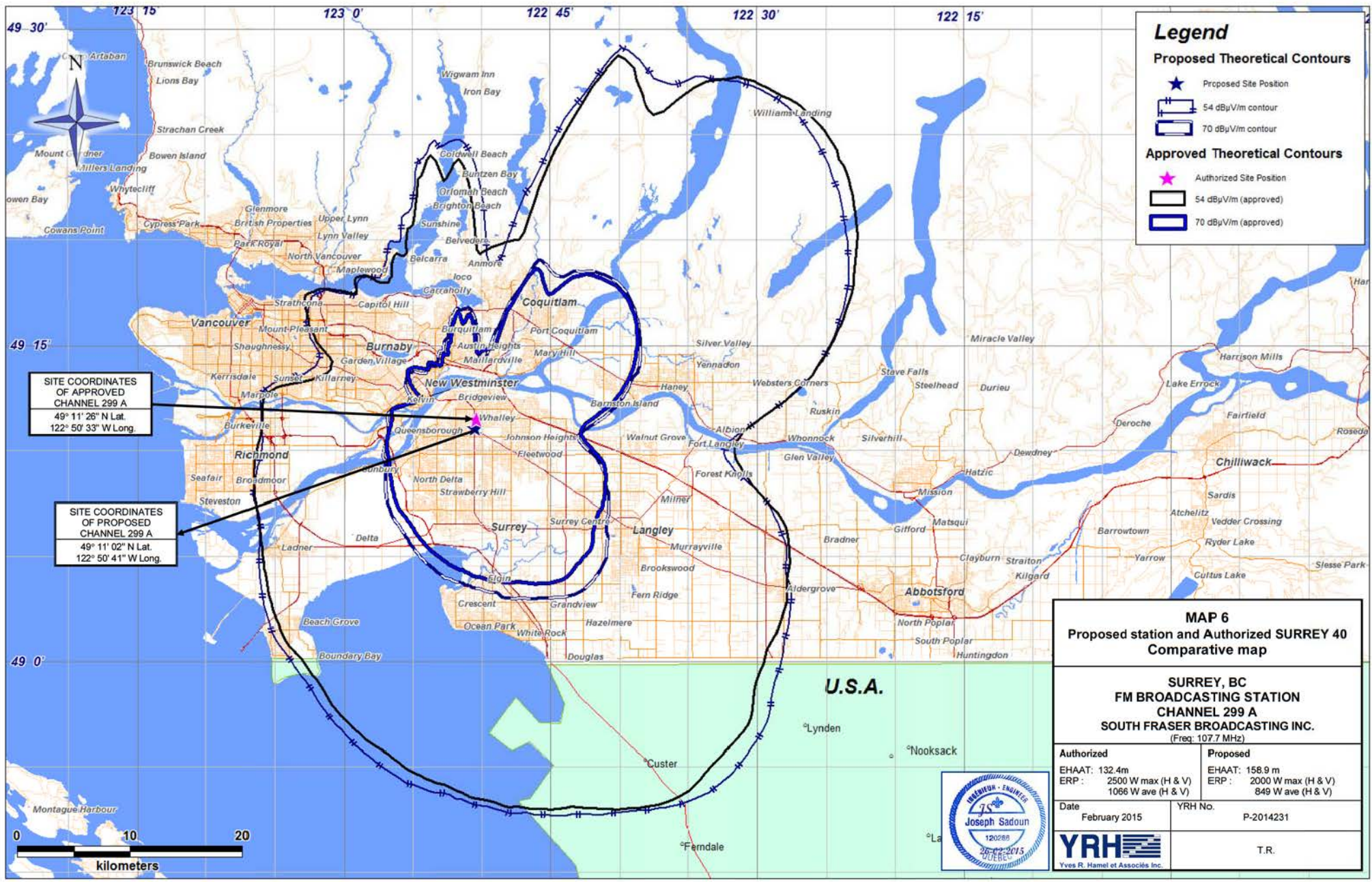
SURREY, BC
FM BROADCASTING STATION
CHANNEL 299 A
SOUTH FRASER BROADCASTING INC.

EHAAT: 158.9 m Freq: 107.7 MHz
 ERP : 2000 W max (H & V) 849 W ave (H & V)

Date	February 2015	YRH No.	P-2014231
		T.R.	

Yves R. Hamel et Associés Inc.





Legend

Proposed Theoretical Contours

- ★ Proposed Site Position
- ⊞ 54 dBuV/m contour
- ⊞ 70 dBuV/m contour

Approved Theoretical Contours

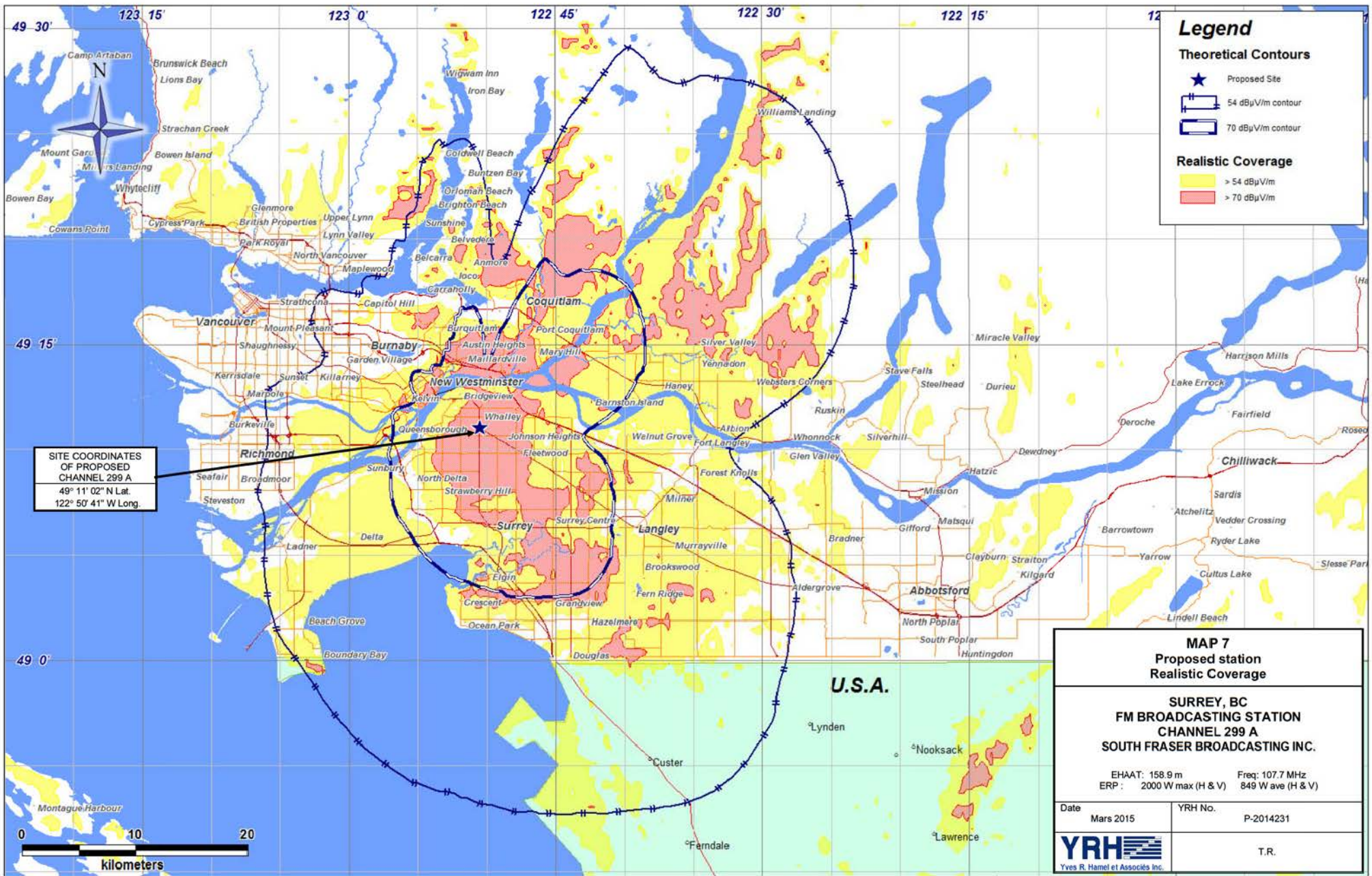
- ★ Authorized Site Position
- ⊞ 54 dBuV/m (approved)
- ⊞ 70 dBuV/m (approved)

SITE COORDINATES OF APPROVED CHANNEL 299 A
 49° 11' 26" N Lat.
 122° 50' 33" W Long.

SITE COORDINATES OF PROPOSED CHANNEL 299 A
 49° 11' 02" N Lat.
 122° 50' 41" W Long.

MAP 6 Proposed station and Authorized SURREY 40 Comparative map	
SURREY, BC FM BROADCASTING STATION CHANNEL 299 A SOUTH FRASER BROADCASTING INC. (Freq: 107.7 MHz)	
Authorized EHAAT: 132.4m ERP : 2500 W max (H & V) 1066 W ave (H & V)	Proposed EHAAT: 158.9 m ERP : 2000 W max (H & V) 849 W ave (H & V)
Date February 2015	YRH No. P-2014231
YRH Yves R. Hamel et Associés Inc.	
T.R.	





SITE COORDINATES OF PROPOSED CHANNEL 299 A
 49° 11' 02" N Lat.
 122° 50' 41" W Long.

Legend

Theoretical Contours

- ★ Proposed Site
- ⊞ 54 dBµV/m contour
- ⊞ 70 dBµV/m contour

Realistic Coverage

- Yellow > 54 dBµV/m
- Red > 70 dBµV/m

MAP 7
Proposed station
Realistic Coverage

SURREY, BC
FM BROADCASTING STATION
CHANNEL 299 A
SOUTH FRASER BROADCASTING INC.

EHAAT: 158.9 m Freq: 107.7 MHz
 ERP: 2000 W max (H & V) 849 V ave (H & V)

Date	Mars 2015	YRH No.	P-2014231
YRH Yves R. Hamel et Associés Inc.		T.R.	