

1 **1. Site Information**

2 **Q1.1 What are the exact dimensions of the proposed fenced area of the Fire Hall site as**  
3 **measured by FortisBC?**

4 A1.1 The proposed fenced area is approximately 43 meters wide at the north end, 28 meters  
5 wide at the south end and approximately 44 meters in length. Please also see BCUC  
6 Appendix 4.1.3.

7  
8 **Q1.2 What are the exact dimensions of the proposed fenced are of the Arawana site as**  
9 **measured by FortisBC?**

10 A1.2 The proposed fenced area will be approximately 40 meters by 65 meters. Please also see  
11 BCUC Appendix A4.1.3.

12  
13 **Q1.3 To what length, width, and depth will the earth on the north side of the Fire Hall**  
14 **site have to be excavated?**

15 A1.3 The exact dimensions would be determined during detailed design and would be  
16 dependent on final siting of the substation on a site. Cross sections are provided as  
17 Appendix A1.3.

18  
19 **Q1.4 How many cubic metres will need to be excavated at the Fire Hall site? Projected**  
20 **cost?**

21 A1.4 The projected volume of earth to be excavated is approximately 1,500 cubic meters. This  
22 includes the projected excavation over the entire site to allow for a granular base, and the  
23 excavation into the bank to create enough level space to construct the station. This  
24 number is subject to revision based on final site geometry.

25  
26 **Q1.5 To what length, width, and depth will the earth on the east side of the Arawana site**  
27 **have to be excavated?**

28 A1.5 Based on preliminary review, the earthwork at the Arawana site can be balanced between  
29 the cut and the fill. Please refer to BCUC Appendix 4.1.3 which shows sections of the  
30 proposed site.

31

1 **Q1.6 How many cubic metres will need to be excavated at the Arawana site? Projected**  
2 **cost?**

3 A1.6 As noted in the response to Q1.5 above, there will be a balance between cut and fill on  
4 this site. The estimated construction cost to achieve a level site is expected to be  
5 approximately \$200,000.  
6

7 **Q1.7 What are the estimated costs to do the basic preliminary site levelling and basic site**  
8 **preparation for:**

9 **a. The Fire Hall site?**

10 **b. The Arawana site?**

11 **c. Detail any anomalies that affect cost such as a retaining wall (Fire Hall and**  
12 **Arawana) or slope stabilisation (Arawana)**

13 A1.7 Please refer to the response to NAFS IR1 Q1.4.9.  
14

15 **Q1.8 What is the cost of the present arrangement that the FortisBC has with the BC**  
16 **Government for the present use of the Fire Hall site?**

17 A1.8 Nil.  
18

19 **Q1.9 With what Ministry, when and for how long has the present agreement that**  
20 **FortisBC has with the Government been in effect? What is its future term?**

21 A1.9 A verbal agreement was struck with the Ministry of Transportation in the mid 1990's (as  
22 best as can be determined). The verbal agreement will be in effect until the new  
23 substation has been constructed and is on-line.  
24

25 **Q1.10 Give the legal description and the dimensions of the Fire Hall site as is being used**  
26 **by FortisBC at present.**

27 A1.10 There is no title for this property; it is untenured Crown land. It is approximately 30 x  
28 20 meters.  
29

1 **2. Operations And Safety FortisBC Submission to the BCUC 15-03-07**  
2 **Reference Page 3**  
3 **Comparing the Penticton Abbot Street Substation (fenced area 125 x 125ft) with two**  
4 **existing transformers to the Fire Hall site (possible fenced area 149 x164ft)\* with**  
5 **one proposed transformer.**

6  
7 **Q2. \*FortisBC survey stakes (Please confirm that the stakes are for the fenced area, as**  
8 **they are well back from the road allowance)**

9 **A2.** Stakes were placed on a preliminary basis only. Final site location will be determined  
10 after detailed engineering is complete.

11  
12 **Q2.1 Are there now or have there ever been employee safety issues at the Abbot Street**  
13 **substation due to restricted size? Explain.**

14 **A2.1** As stated in the response to BCUC IR1 Q4.1.5, substations vary in size for a number of  
15 reasons. FortisBC stations are designed to meet current standards, therefore a  
16 comparison of this nature is not appropriate for determining the size of a new substation.

17  
18 **Q2.2 Would similar issues result in similar remedies for the Fire Hall site? Explain why**  
19 **or why not.**

20 **A2.2** Please see the response to Andrew IR1 Q2.1 above.

21  
22 **Q2.3 Where does the oil processing unit and tanker park at the Abbot Street substation?**  
23 **Why can not the same procedure be used at the Fire hall site?**

24 **A2.3** Please see the response to Andrew IR1 Q2.1 above.

25  
26 **Q2.4 Where do company vehicles, other than those involved in necessary operations,**  
27 **generally park when at substations?**

28 **A2.4** Company vehicles park either within the substation perimeter or on the access road, clear  
29 of the public roadway.

30

1 **Q2.5 Are the hiab and manlift operations restricted at the Abbot site? Could similar**  
2 **procedures be employed at the Fire Hall site?**

3 A2.5 Please see the response to Andrew IR1 Q2.1 above.  
4

5 **Q2.6 The Abbot Street substation has one entrance. Explain how this design restricted**  
6 **operations and how FortisBC remedied the problems, such as snow removal. Could**  
7 **similar solutions be used at the Fire Hall site? Explain.**

8 A2.6 Please see the response to Andrew IR1 Q2.1 above.  
9

10 **Q2.7 The Arawana site has an approach only from the south because of the slope of the**  
11 **land and the need to accommodate this grade in road design indicates that there will**  
12 **be only one access. How does FortisBC plan to remedy this problem of single access**  
13 **and single entrance?**

14 A2.7 Refer to BCUC Appendix A4.1.3 for the proposed station layout for the Arawana Road  
15 site. It is proposed to construct a single access from Arawana Road to the substation  
16 fence line. There is sufficient room on the property to provide a level area outside the  
17 substation fence to permit the installation of two gates as shown on the proposed  
18 drawing.  
19

20 **Q2.8 The Fire Hall site has access to Debeck Road on 1-½ sides with further access from**  
21 **Naramata Road. It is sometimes used as a temporary transformer site using the**  
22 **present entrance. Explain why FortisBC could not apply for road access off**  
23 **Naramata Road, as do homeowners, if a second entrance is needed?**

24 A2.8 Typically, the Ministry of Transportation will not grant a second entrance to a property  
25 when it is located in close proximity to an intersection of two roads.  
26

27 **3. Aesthetics Page 3 FortisBC submission to the BCUC 15-03-07**

28 **Q3.1 Explain why the Fire Hall site can not be screened aesthetically as are the Penticton**  
29 **Abbot and Waterford substations.**

1 A3.1 FortisBC has not stated that the Fire Hall site cannot be aesthetically screened, only that  
2 screening beyond normal standards would require that incremental costs be the  
3 responsibility of the requesting party(ies).  
4

5 **Q3.2 The Arawana site is in a treed location in a subdivision-forest interface forest area**  
6 **in which there have been serious threats from two forest fires in recent years,**  
7 **necessitating evacuation alerts. Homeowners have been advised to remove all**  
8 **combustible materials, including vegetation, from around their homes.**

9 **a. Explain how FortisBC intends to use a natural tree buffer to minimise**  
10 **aesthetic concerns using existing or introduced species with the fire hazard in**  
11 **mind.**

12 A3.2a FortisBC works with the fire protection officials to develop appropriate fire control plans.  
13 The Arawana site would be assessed for hazards and a risk mitigation plan developed.  
14 Substation facilities are generally placed in a safe location on the site and follow the  
15 principles laid out in the government partners “FireSmart Manual”. The central  
16 substation or priority 1 zone has flammable material removed and vegetation is controlled  
17 to prevent fuel build up. Outside the substation proper, the vegetation assessed and fuels  
18 are reduced to an acceptable level. Hazard trees and highly flammable species are  
19 targeted for reduction and compatible vegetation is encouraged.  
20

21 **b. When there is a fire, what steps will FortisBC take to ensure the safety of**  
22 **voluntary and forestry fire fighters in fighting fires around the substation?**

23 A3.2b FortisBC offers fire fighter electrical safety to fire departments on a regular basis to  
24 prepare for the unlikely event of an electrical fire. FortisBC also works directly with first  
25 responders to minimize electrical risks on a 24 hour call out basis.  
26

27 **Q3.3. How long will it take for the combination of natural and introduced vegetation to**  
28 **screen the substation? Supply one location where this form of screening was**  
29 **successfully done in a semiarid climate.**

30 A3.3 One location where FortisBC has natural and introduced vegetation to screen a substation  
31 in a semiarid climate is at the Vaseux Lake Terminal station in Oliver. The trees in this

1 area are on average 4-6 feet tall. With irrigation and fertilizer, over a couple of years  
2 they will grow approximately 18-24 inches per year. When the irrigation system is  
3 turned off, the trees will grow approximately 12-18 inches per year.  
4

5 **4. Construction of a Transmission Line on my Vineyard's Fenceline**

6 **Q4.1 How long would construction take from start to finish?**

7 A4.1 Approximately 3-4 weeks  
8

9 **Q4.2 Does the construction involve heavy machinery?**

10 A4.2 The construction would involve at a minimum line bucket trucks to stand poles and tie in  
11 conductor. Holes for poles can be hand dug if required.  
12

13 **Q4.3 Is there even the remotest chance of contamination of the soil by machinery or  
14 operations?**

15 A4.3 All construction is completed in accordance with provincially regulated standards  
16 regarding the use of heavy equipment that contain oil or other contaminants.  
17

18 **Q4.4 Will there be a staging area on any agricultural land?**

19 A4.4 Staging areas for construction are determined by the Construction Manager and are  
20 typically not located on agricultural land without the express written consent of the  
21 landowner.  
22

23 **Q4.5 Will there be any contouring of land to accommodate machinery use, especially to  
24 access Gammon or Arawana Roads? My vineyard is ten feet lower than Arawana  
25 Road and ten-to fifteen feet higher at the Gammon Road end of the suspected  
26 transmission line right-of-way.**

27 A4.5 Access to install poles would be part of a construction management plan which would be  
28 developed during the detailed design phase.  
29

30 **Q4.6 Would the eighty-foot-high Ponderosa pines need to be removed from my land to  
31 make way for the transmission line?**

1 A4.6 Any brushing required for line construction is dependent on the final line routing.  
2 FortisBC makes every effort to work with affected landowners to minimize any brushing  
3 that may be required during the detailed design phase.  
4

5 **Q4.7 Does FortisBC acknowledge that both the construction of the transmission line and**  
6 **the existence of the transmission line on my and my neighbours' farms will be a**  
7 **substantial disruption and a lasting eyesore?**

8 A4.7 FortisBC anticipates that the construction of the proposed transmission line would cause  
9 only minimal disruption during construction. FortisBC makes every effort to ensure that  
10 any line construction it undertakes is completed with full regard for landowners and the  
11 environment. Once construction is complete, affected properties are cleared of any  
12 construction related debris.  
13

14 **Q4.8 If the transmission line is built, will FortisBC require vehicle access to the poles on**  
15 **an ongoing basis?**

16 A4.8 As stated in the response to NAFS IR1 Q1.42.2, FortisBC would require an access  
17 agreement to facilitate maintenance of its plant. This can be achieved in several ways  
18 and would be part of the negotiations with the affected landowners.  
19

20 **Q4.9 When did FortisBC first tell me of its plans for a transmission line right-of-way on**  
21 **my land:**

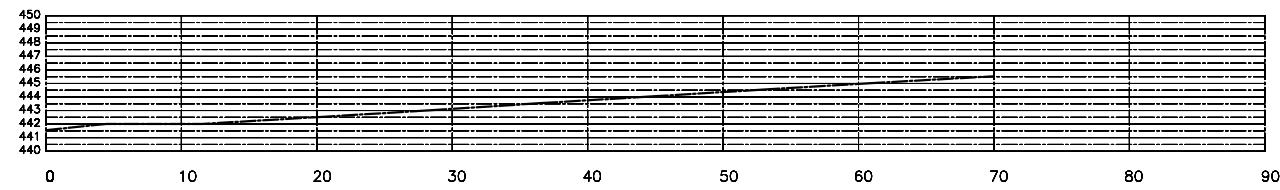
22 **a. Verbally?**

23 **b. In writing?**

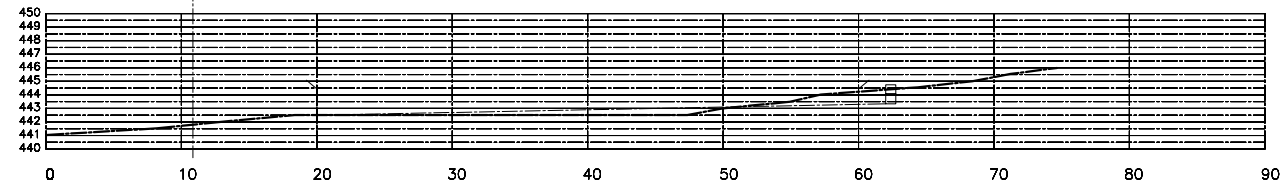
24 A4.9 FortisBC records show that Mr. Andrew was advised of the transmission line right of  
25 way in the spring of 2006.  
26

27 **Q4.10 When did FortisBC first tell the community of Naramata of its intention to**  
28 **construct a substation at the Arawana site?**

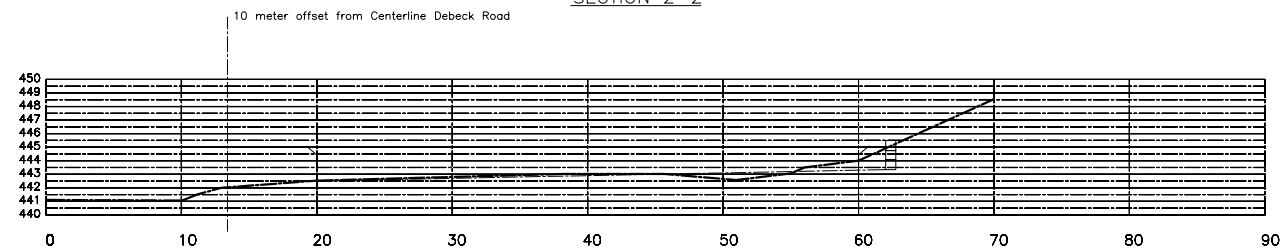
29 A4.10 This question is not relevant to the decision to locate the substation at either the Arawana  
30 Road or Fire Hall site, which is the subject of this regulatory proceeding.



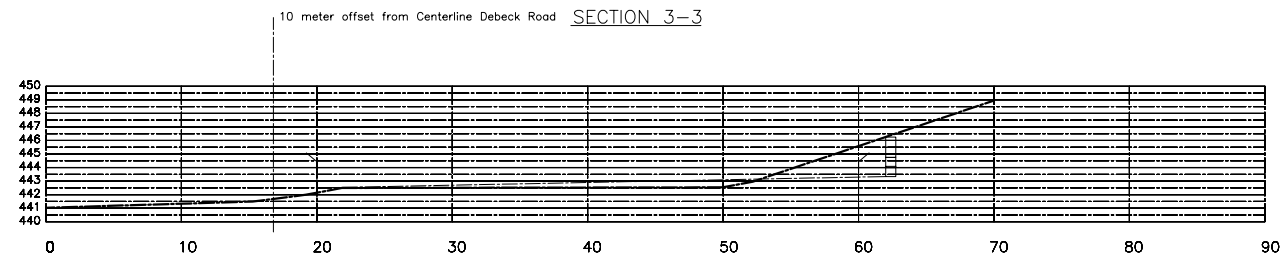
SECTION 1-1



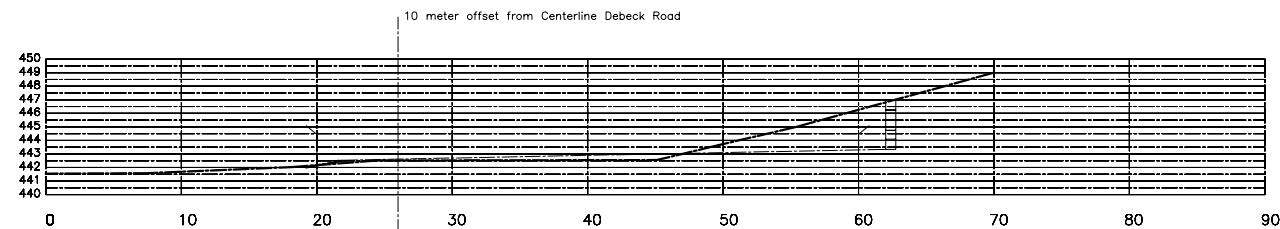
SECTION 2-2



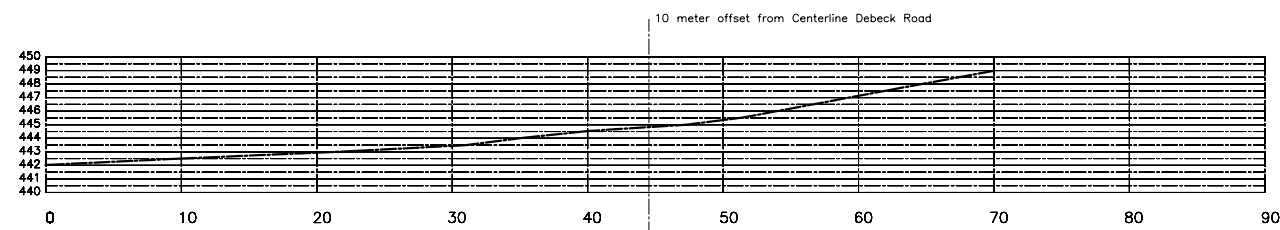
SECTION 3-3



SECTION 4-4



SECTION 5-5



SECTION 6-6

REV	DATE	BY	CHECKED	DESCRIPTION	REVISION APPROVAL	DATE
4						
3						
2						
1						

DRAWN BY:	L. SANTIAGO	SEP/06
DESIGNED BY:		
CHECKED BY:		
APPROVALS		
ELEC	CIVIL	MANAGEMENT



DIVISION	OKANAGAN
DEPARTMENT	TRANSMISSION-DISTRIBUTION
LOCATION	ARAWANA SUBSTATION - OPTION 1
TITLE	EXISTING STATION CROSS-SECTIONS

SCALE:	None	SCALE FACTOR:	1
DRAWING NUMBER		REVISION	
3-330-XXXX		0	