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Date:	January 9, 2012	**File:**	07-2-256
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cc:	**FRED CIAMBRELLI, P.ENG.** **CREUS ENGINEERING** **e-mail**: fciambrelli@creus.ca	**Phone:** **Fax**:	(604) 313-2996 (604) 987-9071

cc: Nick (nebrahim2001@yahoo.ca) and Teri (thodgins@lonsdalelaw.ca)

RE: REVISION OF BRIDGE AND ACCESS POINT ELEVATIONS
PROPOSED SUBDIVISION
3707 DOLLARTON HWY - NORTH VANCOUVER, BC

1.0 TERMS OF REFERENCE

Further to Puar Engineering Consultants Inc's ("PECI") ongoing correspondence with Brian Fortier, P.Eng (of David Nairne & Associates (DNA)) and Bill Harrison (of Forma Design), the following provides suggested preliminary revisions to the bridge layout as well as the structural design concept. Further correspondence between PECI, DNA, and Forma is expected to be required.

2.0 SITE CONDITIONS AND EXISTING CONCEPT

The water channel represents a local drainage 'tributary'. The loading of the channel can be expected to increase as the upslope parts of the neighbourhood are further developed. In our opinion, it may be difficult to estimate a 200-year flood level for the channel.

Topographic profiles in line with the north and south extremities of the bridge deck (refer to Figure B-1, attached) show the primary gully through which flow occurs.

The north extremity of the bridge will govern the potential exposure of the bridge. As shown in the Figure, flooding above elevation 9.0 m should result in channel waters flowing over the crest of the gully. The capacity of the channel, therein should increase significantly (during the flood event).

The currently proposed bridge deck elevation is 7.9 m. DNA has indicated that the deck supports would extend up to 0.5 m below the deck surface. This would result in deck supports at an elevation of about 7.4 m.

The current concept consists of an approximate 17 m span between the east and west pedestrian access points to the bridge deck. Currently, the east and west access points consist of stairs extending down to a west-side landing and the east-side waterfront walkway.

3.0 RECOMMENDATIONS

It is envisioned that decreasing the bridge deck's exposure to channel flows would result in:

1.) Less lateral loading on the bridge during flooding of the channel,
2.) 'lighter' and less invasive installation of bridge footings.

At this point, we envision that a bridge deck surface elevation of 9.7 m would significantly decrease the bridge's exposure to high water levels in the channel.

As discussed with Bill Harrison, the east and west access points would also need to be revised to account for the 1.8 m increase in elevation of the bridge deck. At this point, it appears that the proposed increase in deck elevation would result in less grade change for pedestrians access from upslope areas; a stairway would be required for pedestrians from the waterfront walkway.

We trust the above is sufficient for your current requirements. Please feel free to contact us, if you have any questions.

PUAR ENGINEERING CONSULTANTS INC
Per:

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
S.S. PUAR

Surinder Puar, P.Eng.
Principal

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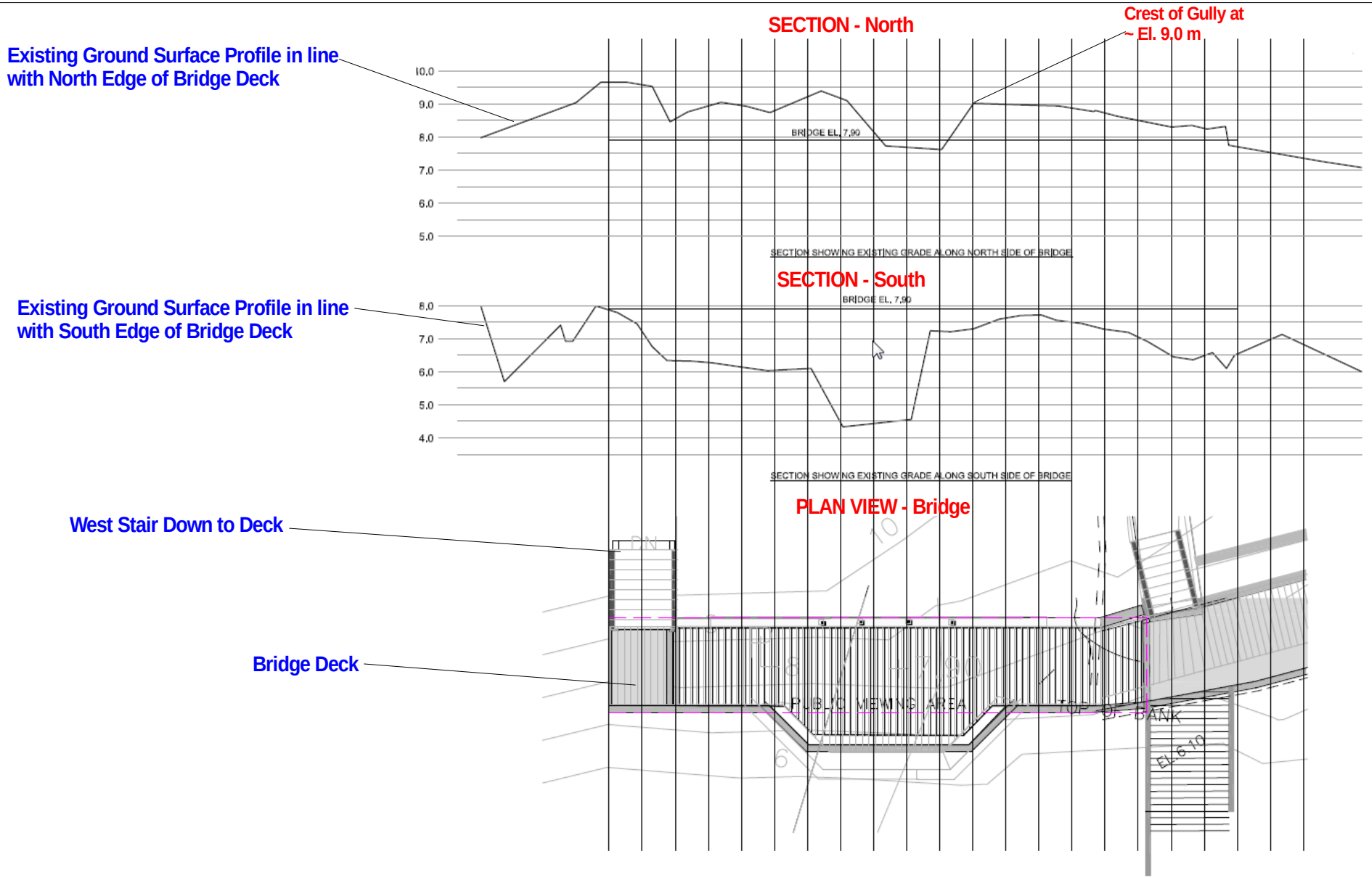
Distribution: fax __ ; mail __; courier __; e-mail __;



NOTES: 1.) Refer to accompanying memo (dated January 9, 2012)

REFERENCE

David Nairne & Associates
2011-12-05 Bridge Cross Sections
(pdf emailed to PECI Dec/2011)

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No.	REVISION	DATE	APPROVED

CLIENT: NICK EBRAHIM

PROJECT: Proposed Subdivision
3707 Dollarton Hwy - N.Vancouver, BC

PROJECT NO.: 07-2-256 | DFTR: wsl | DSGN: sp | CHK:

TITLE: Topography
Proposed Bridge
Sections and Plan

DATE: Jan/12 | SCALE: NTS | DWG NO.: B-1

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