



## ADMINISTRATIVE REPORT

Report Date: November 2, 2015  
Contact: Alan Zacharias  
Contact No.: 604.873.7214  
RTS No.: 11176  
VanRIMS No.: 08-2000-20  
Meeting Date: December 1, 2015

TO: Standing Committee on Planning, Transportation, and Environment

FROM: General Manager of Engineering Services

SUBJECT: Request to Install Lighting Works and Public Art in City Street at 520 West Georgia Street and 1408 Howe Street; and Amendments to the Encroachment Bylaw No. 4243

### *RECOMMENDATION*

- A. THAT Council grant permission, pursuant to the Encroachment Bylaw, for the installation of Rodney Graham's "Torqued Chandelier" (public art), as illustrated in Appendix B, at Beach Avenue and Granville Street, suspended from the Granville Bridge, and adjacent to the Vancouver House development.
- B. THAT Council grant permission, pursuant to the Encroachment Bylaw, for the encroachment of Martin Boyce's "Hanging Lanterns" (lighting works), as illustrated in Appendix C, in the City lane east of Seymour Street, north from Robson Street and adjacent to the Telus Gardens development.
- C. THAT the encroachments described above in Recommendations A and B will not require the annual charges prescribed in the Encroachment Bylaw.
- D. THAT Council approve the addition of "public art" to Part D of the Schedule to the Encroachment Bylaw.
- E. THAT Council approve the addition of "lighting works" to Part D of the Schedule to the Encroachment Bylaw.
- F. THAT the Director of Legal Services be instructed to bring forward for enactment the revisions to the Encroachment Bylaw substantially as referred to in Recommendations D and E as set out in Appendix D.

### *REPORT SUMMARY*

The purpose of the report is to obtain Council permission for the installation in City street of the above noted lighting works and public art features and also to approve amendments to the Encroachment Bylaw such that in the future the City Engineer will have authority to grant permission for similar works at other locations when they are considered to be safe and advisable.

## ***COUNCIL AUTHORITY/PREVIOUS DECISIONS***

The Encroachment Bylaw No. 4243 (the "Bylaw") was enacted by Council on April 26, 1966. In 1990, Council revised the Schedule to the Bylaw (Parts C and D) which lists the types of encroachments that are subject to annual charges and the types of encroachments that are not subject to annual charges.

The Encroachment Bylaw enables Council to grant permission to an owner of real property to construct, use or maintain any encroachment upon, under or over a street subject to that owner entering into an agreement with the City.

The City Engineer may grant permission for and authorize the execution of an agreement for only those types of encroachments that are listed in Section 3(3) or in Parts C or D of the Schedule to the Bylaw.

The Public Art Policy and Procedures for Rezoned Developments adopted by Council on July 23, 2014 establishes policy for the provision of high quality public art by rezoned developments.

## ***GENERAL MANAGER'S COMMENTS***

The General Manager of Engineering Services RECOMMENDS approval of the foregoing recommendations.

## ***REPORT***

### ***Background/Context***

As part of the Vancouver House development at 1480 Howe Street, the owners of the lands adjacent to Granville Street and Beach Avenue, being Howe Street Ventures Ltd. (to be referred to herein as "Westbank"), propose to suspend from the underside of the Granville Bridge above Beach Avenue an artistic rotating ("torqued") chandelier created by artist Rodney Graham. The purpose of the chandelier is to provide light, animation and visual interest to the public realm in the vicinity of the Vancouver House development. See Appendix B for descriptions and illustrations of the proposal.

As part of the Telus Gardens development at 520 West Georgia Street, the owners of the lands adjacent to the lane, being Telus Communications Inc., 501 Robson Property Inc., and 500 Georgia Property Inc. (also to be referred to herein as "Westbank") propose to install hanging lanterns in the City lane to provide light and animation to the lane. The lanterns will be suspended above the lane surface from cables attached to the adjacent buildings, see Appendix C for descriptions and illustrations of the proposal.

The Telus Gardens rezoning was approved by Council in 2011 and the Vancouver House rezoning was approved by Council in 2013. For both sites, Council encouraged the enhancement of the public realm with lighting and visual interest, particularly for the unique environment under the Granville Bridge. Under rezoning requirements both sites are obligated to provide public art as part of the Public Art Policy and Procedures for Rezoned Developments adopted by Council on July 23, 2014. The City's public art

policies apply to rezoning projects with a mission to produce high quality public art that enriches Vancouver's urban environment, create landmarks and distinctive elements in the built environment and provide unique identity for individual developments and for the city as a whole.

Both artworks at Telus Gardens and at Granville Bridge/Vancouver House represent the required public art contributions from their respective developments. The Public Art Committee has reviewed and recommended the artworks and they are supported by the Managing Director of Cultural Services.

Staff support the proposals noted above provided the installations will be owned and regularly maintained by Westbank even though they will be located within City street.

Neither of these proposed encroachment types are listed among the types of encroachments described in Parts C or D of the Schedule to the Bylaw for which the City Engineer is authorized to grant permission and enter into agreements for, hence, Council authority is required to permit these encroachments. Recommendations A through F seek Council's permission to install the encroachments and to revise the Bylaw such that in the future the City Engineer can grant permission for similar types of encroachments when they are considered to be safe and advisable.

Both installations will be designed, installed, and maintained under the supervision of qualified professionals and generally in accordance with the requirements and specifications to be established by the City Engineer. Westbank, as the adjacent land owner will be required to enter into an encroachment agreement in accordance with the Bylaw which will set out:

- That the owner is responsible for the installation and removal of the encroachment;
- Payment by the owner of all costs of and incidental to the removal of the encroachment;
- The obligation for the owner to keep the encroachment in good and sufficient repair;
- Provisions for termination of the encroachment;
- The right of the City Engineer or authorized representatives of the Engineer to enter upon the premises of the owner for the purpose of inspecting or maintaining the encroachment if required;
- That the owner will be liable for and shall indemnify the City against any claims that arise as a result of the encroachment;
- That the owner will be required to pay all fees and charges required under the Bylaw.

Since these installations are providing an enhancement to the public realm and enrichment of the public environment and experience for the public, staff are recommending that they will not be subject to an annual charge.

The installations will be located on City street but they will be privately owned and maintained by the adjacent property owners.

In addition to the two examples noted above, the City has received a number of requests from developers to install public art or lighting works on City street adjacent to their development projects. The installations proposed are often too specialized and too complex to be maintained under normal City maintenance programs and are best accepted as encroachments under the provisions of the Bylaw. Going forward with the amended Bylaw, before any public art is accepted in the street, engineering staff would first consult with the Public Art Program Manager for acceptance of the proposal.

### *Strategic Analysis*

The City regularly secures the provision of public art through rezoning and development conditions. The public art provided may be privately owned, maintained by the owner and located on accessible private property; or, may be gifted to the City, maintained by the City under its public art programs and located on sites under City jurisdiction. The Recommendations in this report will enable a hybrid of the above two scenarios i.e. the placement of privately owned and maintained art on City street when it is determined to be safe by the City Engineer and supported by the Managing Director of Cultural Services.

Engineering Services currently supports a wide range of street lighting styles throughout the City since the special styles are often used to acknowledge a neighbourhood's special character. The "Hanging Lanterns" however are a considerable divergence from any of the City's available lighting options and their artistic quality goes beyond just providing functional street lighting. The Recommendations above support the adjacent owners desire to install privately owned and maintained lighting works in the lane and the City's goals to enrich the experiences of public places. Both projects will use LED lighting.

The installation of privately owned public art and lighting works in the street is consistent with the public realm and public art objectives articulated in the Council approvals for the Telus Gardens and Vancouver House projects and are supported by the Managing Director of Cultural Services.

The above Recommendations D through F create an enduring mechanism to support similar proposals that arise in the future while establishing reasonable criteria for maintenance and risk management.

### *Implications/Related Issues/Risk (if applicable)*

#### *Financial*

All installation and on-going maintenance costs will be the responsibility of the owners (Westbank) and there are no anticipated on-going costs that will be borne by the City. As these encroachments are to be listed in Part D of the Schedule to the Bylaw they will not be subject to annual fees. Other fees currently prescribed in the Bylaw, such as the \$50.00 fee for the preparation of an agreement, and any fees required for the registration of the agreement in the Land Title Office will be applicable and paid by the applicant.

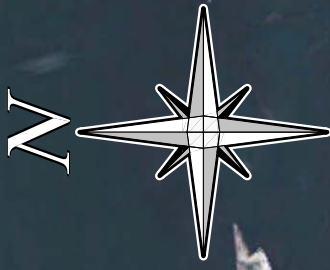
***CONCLUSION***

The General Manager of Engineering Services, in consultation with the Managing Director of Cultural Services, recommends approval of the Recommendations contained in this report.

\* \* \* \* \*



CITY OF VANCOUVER  
DOWNTOWN PENINSULA



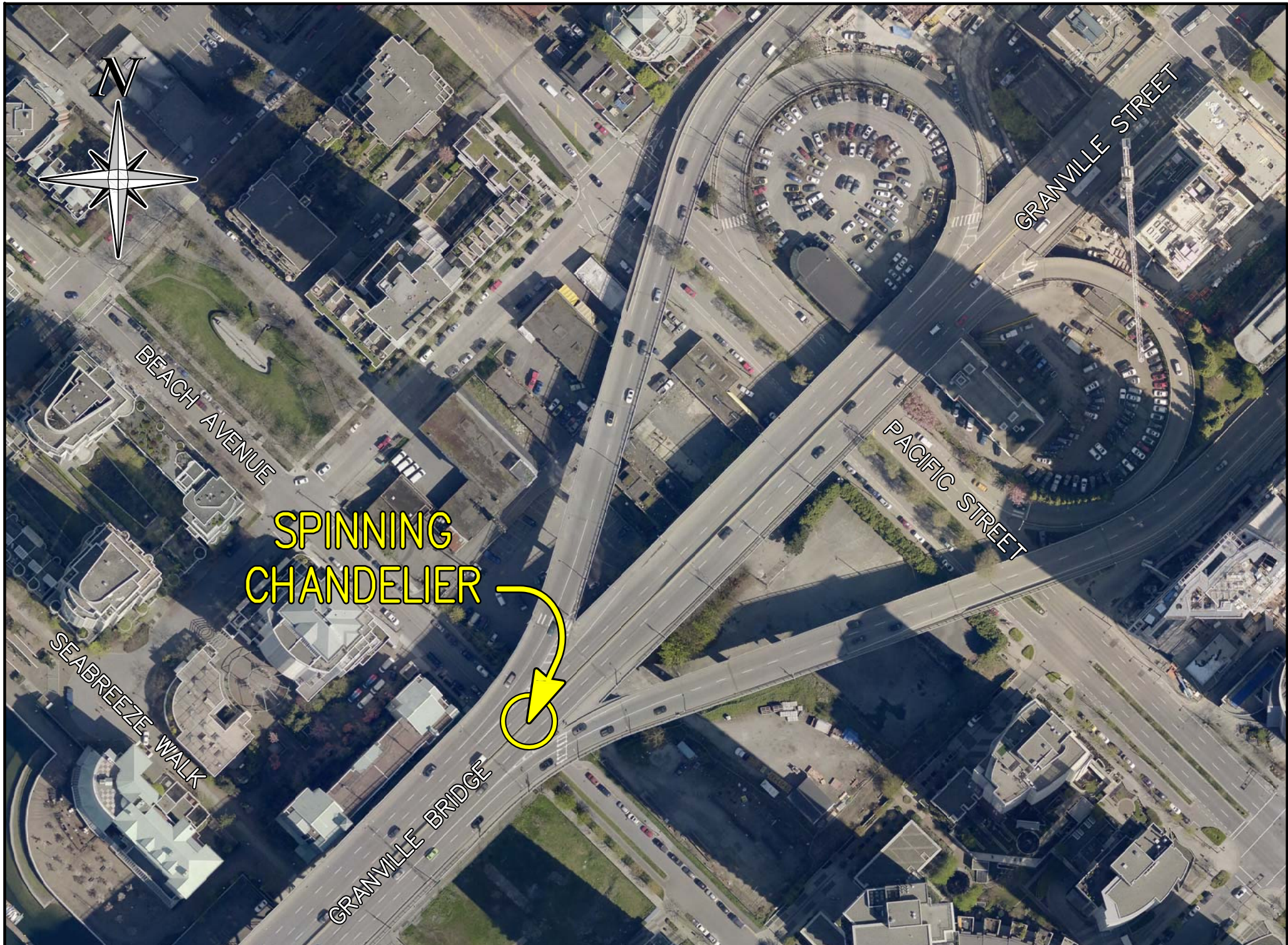
**HANGING  
LANTERNS**



**SPINNING  
CHANDELIER**

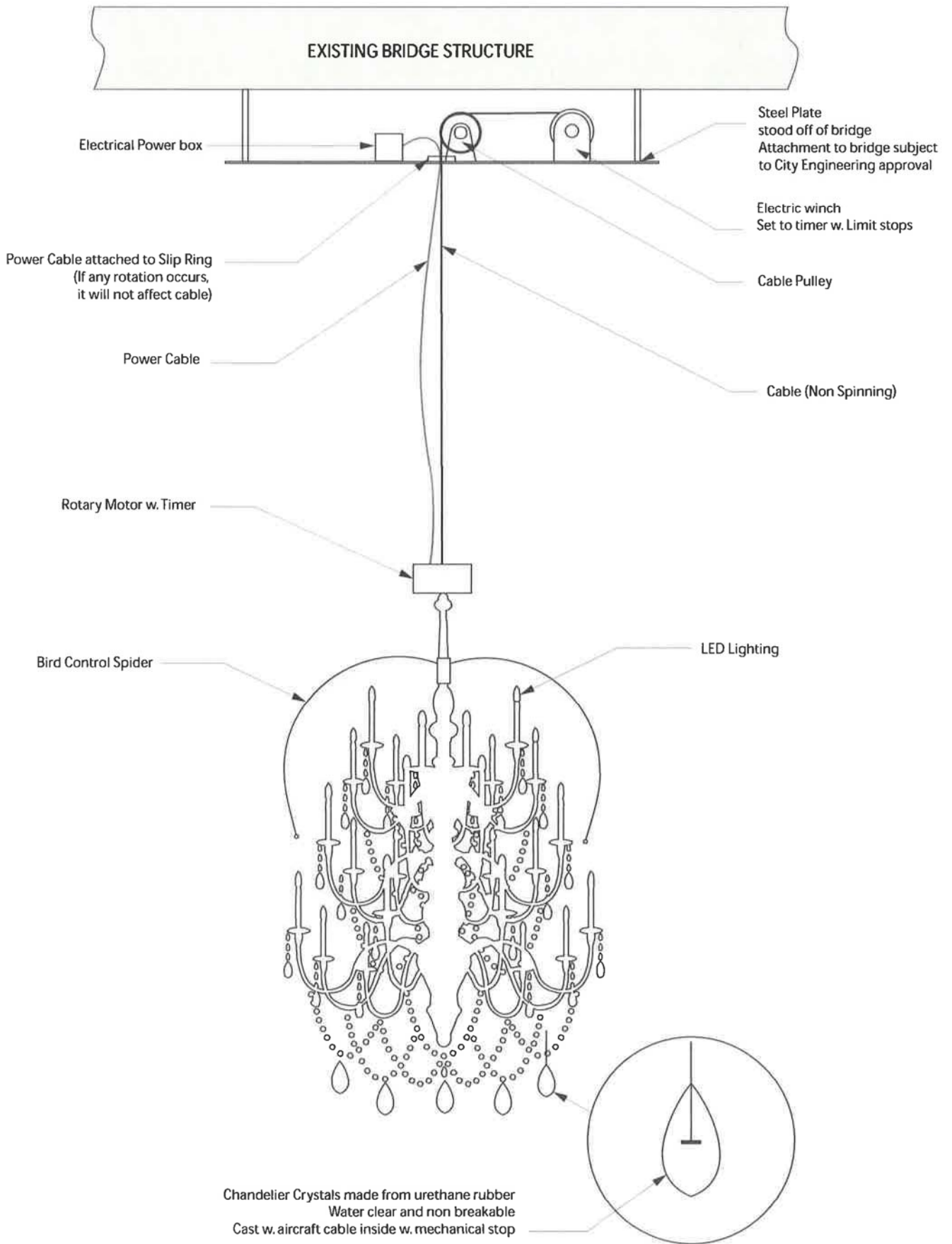




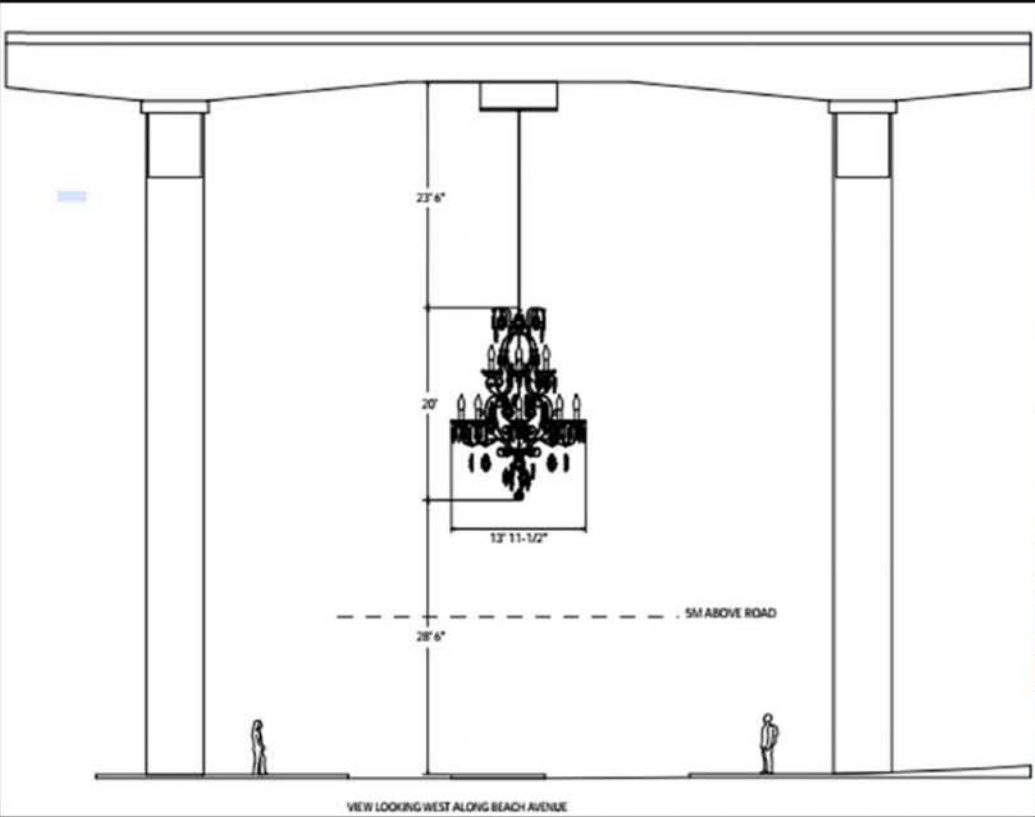


**SPINNING  
CHANDELIER**





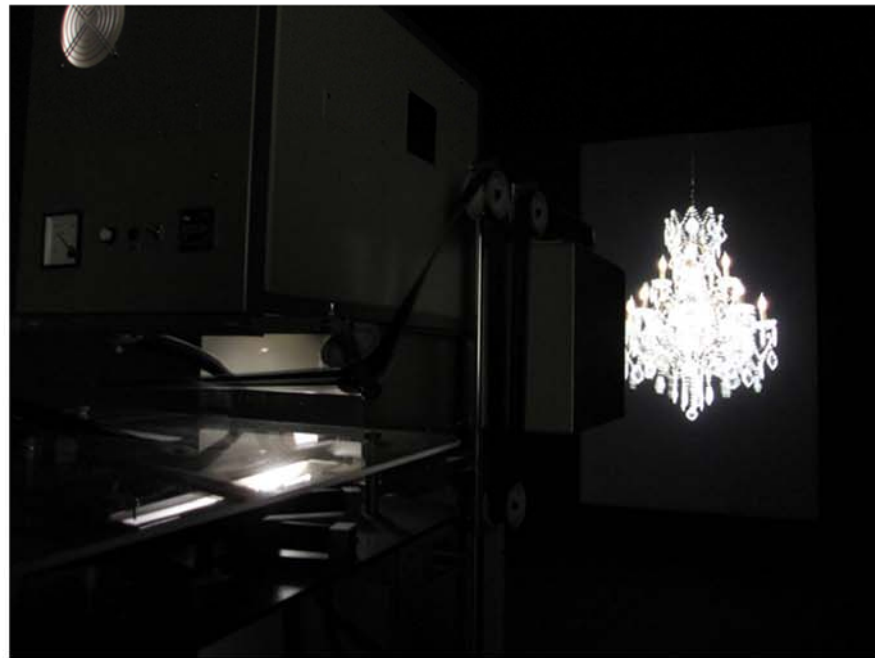




## *Spinning Chandelier Proposal : Precedent*



*Projection Image*

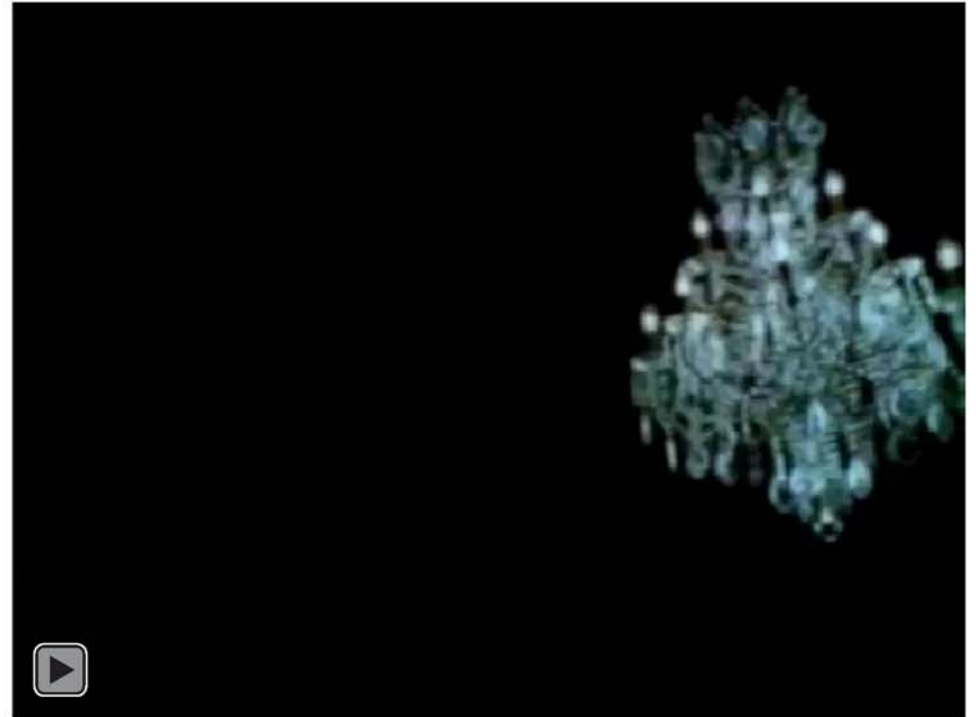


*Installation View*

*Torqued Chandelier Release* (2005) is a film that the artist described as “illustrated ‘thought experiments’ documenting transitory lighting events within the context of a single roll of film.” Inspired by Sir Isaac Newton’s famous water-bucket experiment, which explored the nature of rotational motion, *Torqued Chandelier Release* documents a crystal chandelier—wound up on a rope off-camera and then released—spinning in one direction until the rope unwinds, slowing, then spinning in the reverse direction, and so on, until finally coming to rest.



*Spinning Chandelier*



*Reversing Direction*

The film was shot at twice the normal speed with a 35mm camera placed on its side, and is shown in a vertical format through a custom-built, high-speed projector. The image of the spinning chandelier becomes hypnotic—it takes on a sculptural, three-dimensional appearance that is unlike anything made by conventional filmic means; the intensified resolution and lush texture transform the simple event into a dizzying, glamorous spectacle.



## *Spinning Chandelier Proposal : Concept*



*View toward east from Beach Avenue*

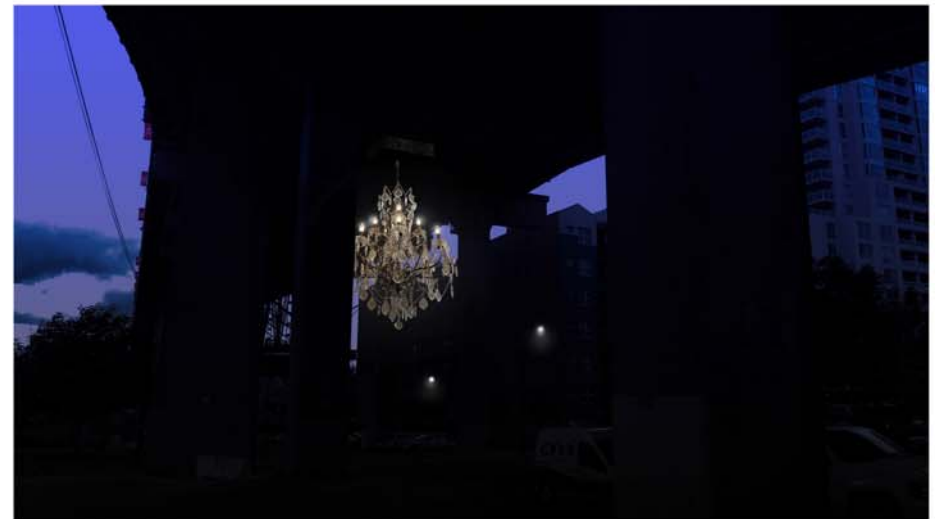


*View toward east from Beach Avenue (Night)*

Hanging underneath the Granville St. Bridge at Beach Avenue, *Spinning Chandelier* is a large kinetic sculpture (a 10-15 foot reproduction of the same 18th century French or Italian chandelier used in the *Torqued Chandelier* film loop. Above are crude digital collages to depict the approximate scale and concept for the *Spinning Chandelier*



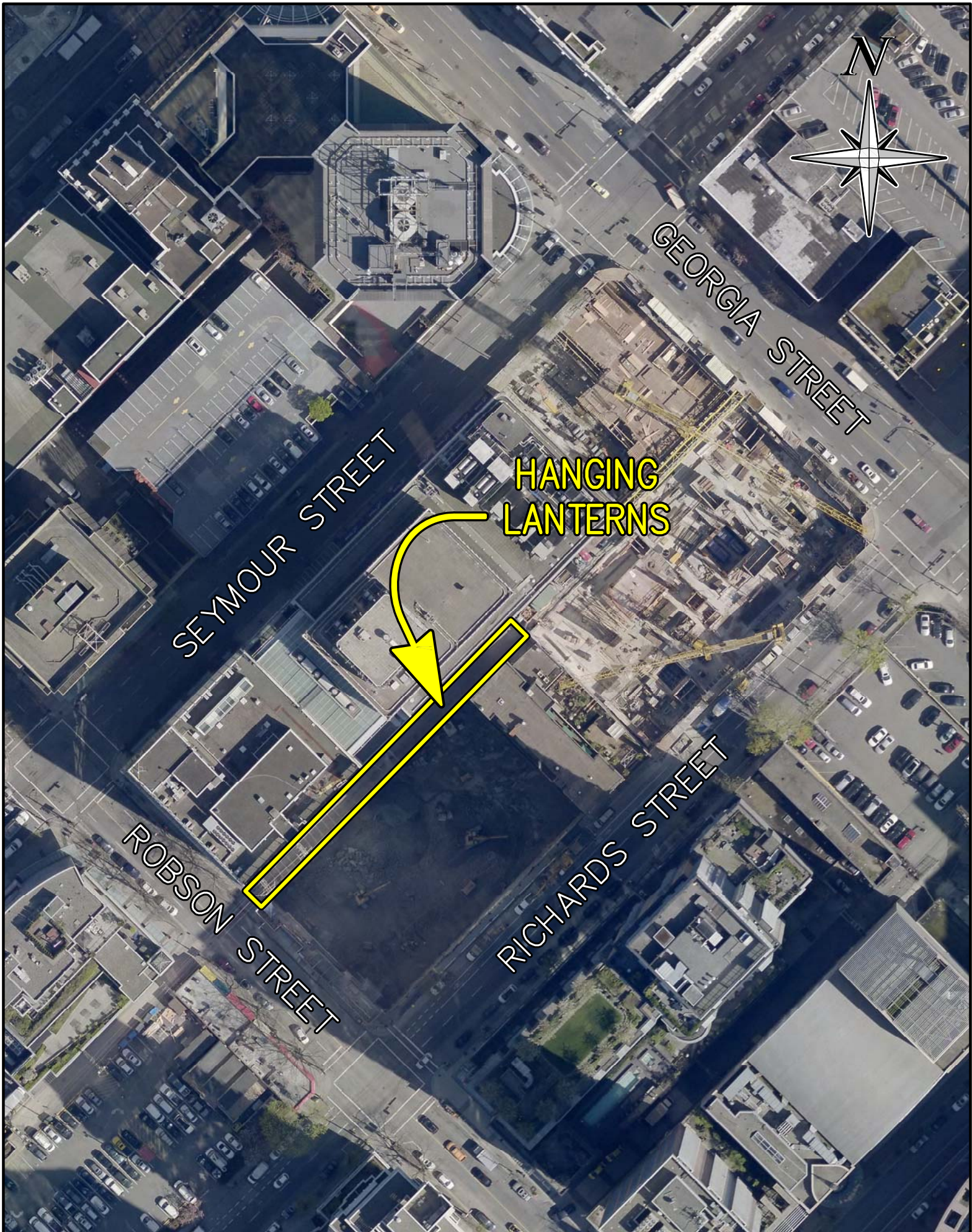
*View toward southwest under Granville Bridge*



*View toward southwest under Granville Bridge (Night)*

The enlarged chandelier would turn slowly and simultaneously elevate (mimicking a torquing/winding action) over the course of 24 hours. It would be 'released' once every 24 hours, at a fixed time in the evening, spinning quickly in the opposite direction (mimicking an unwinding action) while lowering to its starting position.





SEYMOUR STREET

GEORGIA STREET

ROBSON STREET

RICHARDS STREET

HANGING LANTERNS



Martin Boyce (born 1967) is a Scottish sculptor inspired by early 20th century modernism. In 2011, Boyce won the prestigious Turner Prize, awarded by Britain's Tate Gallery, for an installation that recreated a park in autumn. The judges praised his "opening up of a new sense of poetry", while Nicholas Serota, director of Tate Galleries, said: "He is an extraordinarily strong artist who has consistently reinvented the language of early modern art, but he makes work that is beautiful and arresting in its own right."

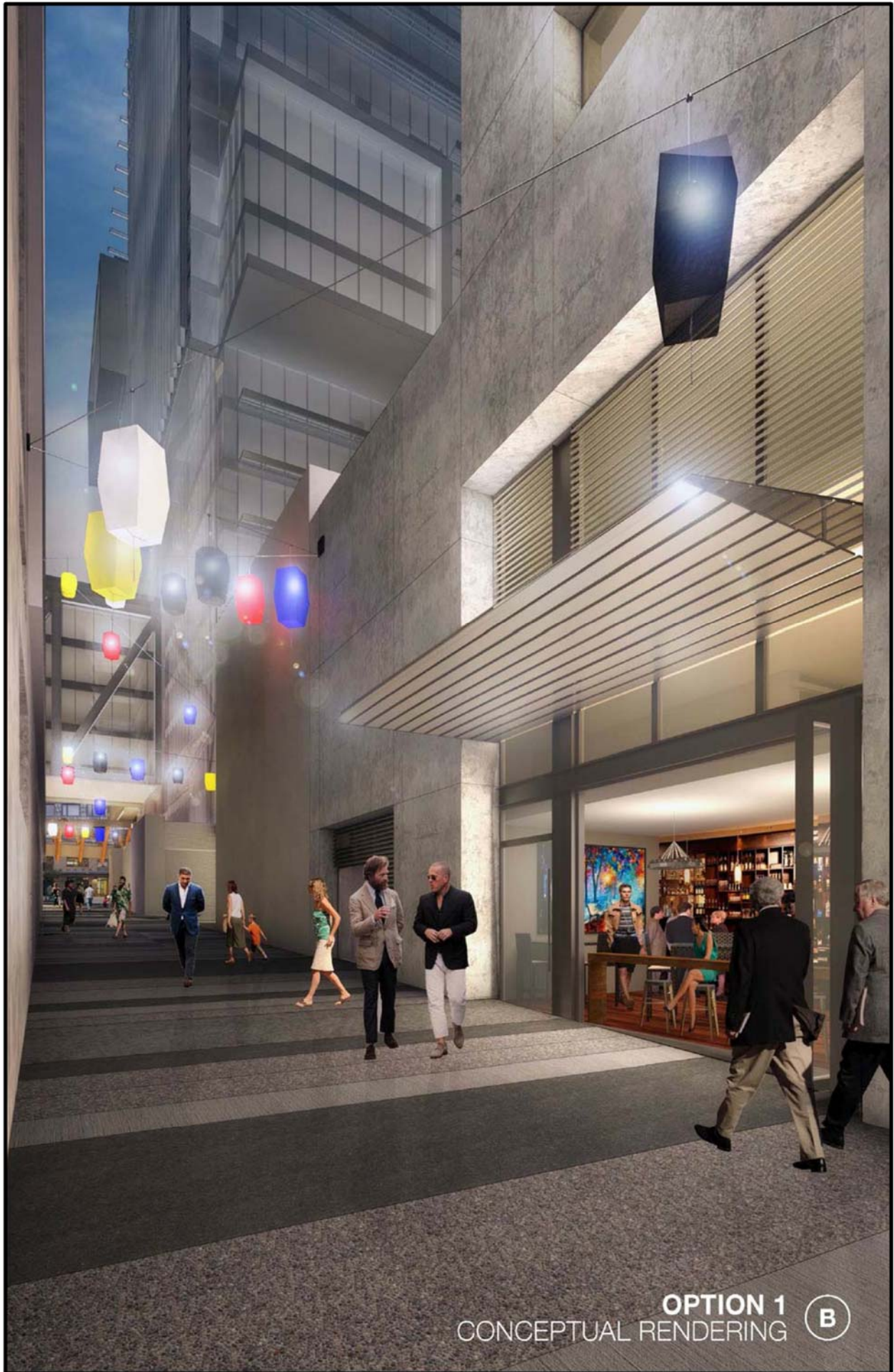
In 2012, through invitational competition, Boyce was chosen by a committee made up of Ian Gillespie, Architect Gregory Henriquez, Telus Vice President Andrea Goertz, acclaimed Vancouver visual artist Ian Wallace, and Daina Augaitus, Chief Curator/Associate Director of the Vancouver Art Gallery, to produce a major public artwork for Telus Garden.

Boyce's proposal, titled: *Beyond the Sea. Against the Sun*, consists of three continuous chains of hanging lanterns that converge at the point where the Richards St. lane meets the alleyway running from Robson St through to Georgia St. The lanterns follow a geometric design with their component shape being found as the 'leaf' in the 1925 abstract trees of French sculptors Jan and Joel Martel. They are produced in perforated stainless steel and coated with a two-part epoxy paint system. Each lantern will be around 1.5 metres in height with its fringed tassel reproduced in stainless steel chain.

This industrial translation belies the lightness of traditional paper lanterns. They are objects in and of themselves but more importantly mark and activate the space below them. Their state of partial collapse simultaneously suggests the residue of a celebration long since passed and an arrangement in advance of such an occasion. Scaled up and clustered in colourful constellations their presence will heighten the dramatic possibilities of the site, drawing people into an ambient, atmospheric urban space. The lanterns will also create spectacular vistas for pedestrians walking past, or seen "snapshot-like" from passing cars.

In addition to the lanterns, Westbank is now in discussion with the Boyce to enlarge and expand on his work in the alleyway with a pavement treatment originally designed by the artist in 2007 for the prestigious Munster Sculpture Project. Here Boyce also created an artwork in homage to the Martels, whom he finds inspiration for their attempts to present a "perfect unity of architecture and art".

- More lantern images: <http://www.themoderninstitute.com/exhibitions/3965/images>
- Also you can find more of Martin's pavement images if you Google: "Munster Sculpture Project 2007 Martin Boyce"



OPTION 1  
CONCEPTUAL RENDERING (B)

**GENERAL NOTES**

- The necessary cable structure supporting lanterns including connections to buildings and poles have been designed in accordance with the Vancouver Building By Law 2014 including the design for seismic forces.
- Read structural drawings together with architectural, mechanical and other drawings for detail dimensions, locations of door and window openings, duct work, recesses, inserts and other items. In the event of discrepancies between drawings, the more stringent requirements shall be followed.
- Verify all dimensions and examine site conditions prior to fabrication of all items to ensure correct fit.
- For conditions not explicitly shown, contractor shall immediately request clarifications from the structural engineer.
- Observe and enforce all construction safety measures required by the Worker's Compensation Board of British Columbia and Part 8 of the Vancouver Building By Law 2014. Employ a qualified professional specialty Engineer registered in British Columbia the design of all falsework and temporary support of all structural elements, earth banks, roads, etc. It is the sole responsibility of the Contractor to ensure that no part of the work is subjected to a load which will endanger the safety of the building or workers. Use temporary bracing where necessary to support all loads to which structure may be subjected, including erection equipment and construction operations.
- Inspection
  - Provide a minimum of 24 hours notice to the Engineer for routine inspections of reinforcing steel, prior to each concrete pour structural steel, before concealment cables, before and after lanterns have been installed.
  - The Contractor is responsible for pre-inspecting the work to confirm completeness prior to inspection by the Engineer.
- Design Live Loads
  - Snow Load Values  $S_s = 1.8 \text{ kPa}$   $l_n = 1$   
 $S_w = 0.2 \text{ kPa}$
  - Basic snow / ice load Along Cable: 4.2 Nm  
 At Lantern: 0.3 Nm
  - Basic wind pressure(150) 0.45 kPa  $l_n = 1$   
 Specified Wind load (along) Along Cable: 10.8 Nm  
 At Lantern: 1.0 Nm
  - Seismic Factors:  
 $S_D = 2.0 \times 0.94$   $l_n = 1$   
 $S_p = 1.0$   
 $V_p = 0.3 \times S_D(0.2) \times S_p \times l_n \times W_p = 0.28 W_p$
- Concrete
  - Provide concrete and perform work to CSA A23.1-09. Test concrete to CSA A23.2-09. Testing of concrete to be performed by an independent testing agency appointed by the Engineer and retained by the Owner.
  - Properties of Masses (Minimum):  
 Mix / Use Strength Slump Air Aggregate Class SP  
 A. Walls below and above grade 35 MPa 80 +/- 20 4-7% 20 mm C-1 opt
  - Mix notes:  
 Strength: Minimum compressive strength at 28 days (MPa)  
 Slump: +/- 20mm, as measured before addition of superplasticizer.  
 Contractor to make slump tests from each truck of concrete. Reject concrete with non-conforming slump.
  - Aggregate:  
 Nominal size of coarse aggregate (mm)  
 Note: Use 10mm aggregate in walls with congested reinforcement  
 Entrained Air: Air entraining admixtures to conform to ASTM C260  
 Note: provide 5-8% for concrete exposed to weather  
 Superplasticizer: to ASTM C1017  
 opt = may be used at Contractor's discretion where needed to improve workability
  - Class: Exposure Class. Mix design to meet or exceed requirements of exposure class in accordance with CSA A23.3-09
  - Cement: GU Portland cement or GU blended hydraulic cement to CSA-A300-08.  
 Calcium chlorides: not permitted.  
 Other admixtures: to ASTM C484 with the prior approval of the Engineer.
  - Epoxy grout: Hilti HY-200 or pre-approved alternate.
  - Concrete anchors and inserts: Use Hilti anchors and inserts in strict accordance with the manufacturers instructions where shown or required.  
 No substitutions permitted without the prior written consent of the Engineer.
  - Grout (for steel plate/concrete connections and where shown): non-shrink, non-ferrous, premixed grout developing a minimum compressive strength of 30 MPa at 3 days, and 50 MPa at 28 days.
  - Do not remove forms for footings and walls until a minimum of 24 hours after concrete is placed and the concrete has attained a strength of at least 10 MPa.
- Reinforcing Steel
  - Use new deformed reinforcing bars conforming to CSA G30.18-09, grade 400W u.n.o.
  - Welded wire fabric to ASTM A185.
  - Place reinforcing steel to CSA A23.1-09.
- Structural Steel
  - Structural steel to conform to CAN/CSA G40.21-04 u.n.o.
  - HSS shapes: grade 350W, class C
  - W shapes: grade 350W
  - C, S, L, plates and other sections: grade 300W
  - Pipe sections: to ASTM A53 grade B, min. yield strength 241 MPa
  - Round bars, to CAN/CSA G40.21-04, grade 300W min
  - Bolts, nuts and washers: to ASTM A325, minimum size 3/4"
  - Anchor bolts, nuts and washers: to ASTM A307 u.n.o.
  - Heated studs: weldable mild steel conforming to CSA S16-09 and CSA A23.3-04, Appendix H. Minimum size 20mm diameter u.n.o.
  - All steel (except steel embedded in concrete, 50mm around field welded joints, galvanized items and when fireproofed) to receive one coat of approved shop primer after fabrication.  
 Touch up unpainted steel and steel around field welds with one coat of approved paint after erection. All field welds, remove paint prior to welding and touch up same day with primer to prevent staining to exposed concrete.
  - Unless detailed, all structural steel connections to be designed by a Professional Engineer registered in British Columbia retained by the steel fabricator to Vancouver Building By Law 2014 for 150% of specified forces shown. Shop drawings to be sealed by the Professional Engineer responsible for the detail design.
  - Structural steel fabricator to be certified by the Canadian Welding Bureau to CSA W47.1-08, Division 2, 1 or Division 1.

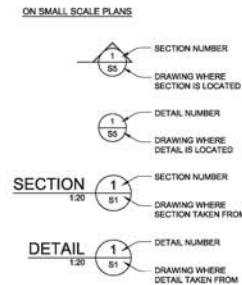
- Welding
  - Welding design and practice to CSA W59-03.
  - All welding to be performed by Canadian Welding Bureau approved welders in accordance with CSA W47.1-09.
  - Minimum welds, except where shown or required by connection design:  
 Minimum leg size of welds to be 8 mm
  - Other connections between members: as required by design but welded not less than 50mm long weld on each side of joint.
  - Inspection and testing:  
 All structural steel welding will be visually inspected by a qualified testing agency approved by the Engineer as part by the Steel Fabricator. All welds to be visually inspected and 50% of length of welds to be tested by magnetic particle inspection prior to painting.
- Cables and Hardware
  - Wire Rope to conform to CAN/CSA G4-09 (R2014), Steel Wire Rope for General Purposes and CSA G12-14, Zinc Coated Steel Wire Strand
  - Coating = Galvanized  
 Lay = Regular Lay  
 Classification = 8x19  
 Core = Independent wire rope core IWRC
  - Pre-tension to eliminate construction stretch. Use turnbuckles to take-up elastic stretch after installation of lanterns and electrical wires.
  - Hardware: Use Crosby Type Turnbuckles, Shackles, Thimbles, and clamps in strict accordance with the manufacturers instructions where shown or required. No substitutions permitted without the prior written consent of the Engineer.
  - Submit shop drawings of all cables and hardware, prepared in metric units, to the Engineer for review prior to fabrication. Site measure between cable anchor points prior to submitting shop drawings to verify cables length shown on these drawings.

**ABBREVIATIONS**

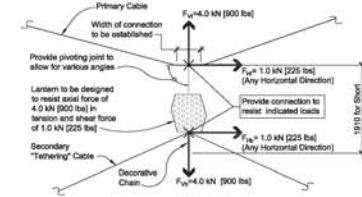
A	AND	LG	LONG LIVE LOAD
AB	ANCHOR BOLT	LV	LONG WAY
A/B	ASPHALT IMPREGNATED FIBRE BOARD	LW	LONG WAY
ALT	ALTERNATE(LY)	MAX	MAXIMUM
APPROX	APPROXIMATE(LY)	MCH	MECHANICAL
ARCH	ARCHITECT(RAL)	MFR	MANUFACTURER
B	BOTTOM	MIN	MINIMUM
B/B	BACK TO BACK	MIC	MICROCLAM
B/BT	BACK TO BACK	NBS	NEAR SIZE
B/BT	BACK TO BACK	NLS	NELSON STUD
BETWN	BETWEEN	NTS	NOT TO SCALE
BDD	BUILDING	OC	ON CENTRE
BL	BAYLINE	OP	OPENING
BLL	BOTTOM LOWER LAYER	OPC	OPPOSITE
BSMT	BASEMENT	OS	OPEN WEB STEEL JOIST
BUL	BOTTOM UPPER LAYER	PERP	PERPENDICULAR
B/OT	BOTTOM	PL	PLATE
BU	BULET UP	PLB	PARALLAM LAMBER BEAM
CL	CENTRELINE	PLC	PARALLAM LAMBER COLUMN
C/W	COMPLETE WITH	R	RADIUS
CC, DC	CENTRE TO CENTRE, ON CENTRE	RD	ROOF DRAIN
CJ	CONNECTION, JOINT	REIN	REINFORCEMENT
COL	COLUMN	REQD	REQUIRED
CONC	CONCRETE	REV	REVISION
CONST	CONSTRUCTION	R/W	REINFORCED WITH
CONT	CONTINUOUS (LAP-SPUCE)	SECT	SECTION
CTR	CENTRE	SEM	SIMILAR
DET	DETAIL	SK	SKECH
DM	DIMENSION	S.O.G.	SLAB ON GRADE
DN	DOWN	SP	SPECIFIED(S/IND)
DO	DITTO	STAG	STAGGERED
DP	DEEP	STAGG	STAGGERED
DWGS	DRAWINGS	STR	STRENGTH(S)
EACH	EACH	STL	STEEL
EA	EACH FACE	STR	STRAIGHT, STRUCTURE(L)
EL	ELEVATION	SW	SHORT WAY
EQ SP	EQUAL(LY) SPACES(D)	TAB	TOP AND BOTTOM
EW	EACH WAY	THK	THICKNESS
EXIST, EX	EXISTING	TOC	TOP OF CONCRETE
FD	FLOOR DRAIN	TOS	TOP OF STRUCTURAL STEEL
FENL FTG	FOUNDATION	TOW	TOP OF WALL
FN GR	FINISHED/FINAL GRADE	TS	TIMBERSTRAND BEAM
FN FL	FINISHED FLOOR	TUL	TOP UPPER LAYER
FL	FLOOR	TWL	TOP LOWER LAYER
F/S	FAR SIDE	TYP	TYPICAL
FTG	FOOTING	UB	UNDERBUTT
GA	GAUGE	UNO	UNLESS NOTED OTHERWISE
GALV	GALVANIZED	VERF	VERTICAL EACH FACE
GL	GROUING, BAYLINE	VERT	VERTICAL
GLB	GLUE LAMINATED TIMBER BEAM	W	WIDE
GND	GROUND	W/P	WITH
GRD	GRADE	WP	WORK POINT, REFERENCE POINT
H/E	HOOKED ONE END	WS	WATER STOP
H/E	HOOKED TWO ENDS		
HEF	HORIZONTAL EACH FACE		
HORIZ	HORIZONTAL		
HR	HORIZONTAL(LY)		

ON STRUCTURAL DRAWINGS, DIMENSIONS IN METRIC UNITS SHALL BE PREVIOUSLY APPROVED WITH SPECIFIC JOINT ALL WORK IN NON-FALCIFIED TEXT IS NEW EXCEPT WHERE NOTED.

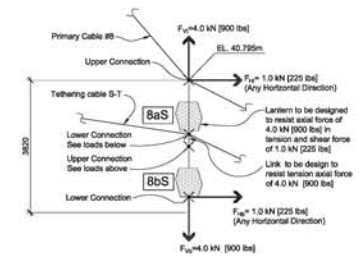
**SYMBOLS**



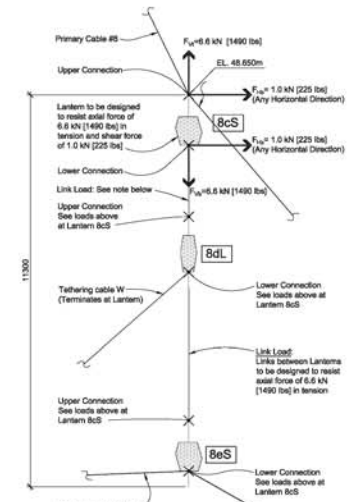
**LANTERN DESIGN FORCES**



**SINGLE LANTERN CONDITION**  
(18 Single Lantern Locations)



**DOUBLE LANTERN CONDITION (ONLY ONE LOCATION)**



**TRIPLE LANTERN CONDITION (ONLY ONE LOCATION)**

**FACTORED FORCES APPLIED TO LANTERNS & CONNECTIONS**  
**TOP CONNECTION:**  
 $F_v$  = VERTICAL FORCE  
 $F_h$  = HORIZONTAL FORCE  
**BOTTOM CONNECTION:**  
 $F_v$  = VERTICAL FORCE  
 $F_h$  = HORIZONTAL FORCE

**NOTES TO ALL CONDITIONS:**  
 1. All primary cables are continuous at lanterns.  
 Tethering cables are continuous at lantern except for cables B and W as they terminate at the lantern.  
 2. Provide final self weights of lanterns for review by CVLA.

Copyright reserved. This design and drawing is the exclusive property of C.Y. Looh Associates and cannot be used for any purpose without the written consent of C.Y. Looh Associates. This drawing is to be used for the construction of lanterns for that purpose by C.Y. Looh Associates. Prior to commencement of the work, the Contractor shall verify all dimensions, ensure and check to identify any errors and omissions, especially any discrepancies between the drawing and the S&S Contract Documents, and bring these items to the attention of the C.Y. Looh Associates for clarification.

REV	DATE	BY	CHKD
B	2015.09.14		
A	2015.09.04		

**TELUS**  
**LANEWAY LANTERNS**  
 788 SEYMOUR STREET

**C.Y. LOOH ASSOCIATES LTD**  
 Consulting Structural Engineers  
 1863 Powell Street  
 Vancouver, B.C. V6L 1H8  
 T: 604.251.0865  
 E: cylooh@cylooh.ca

**GENERAL NOTES AND LANTERN DESIGN FORCES**

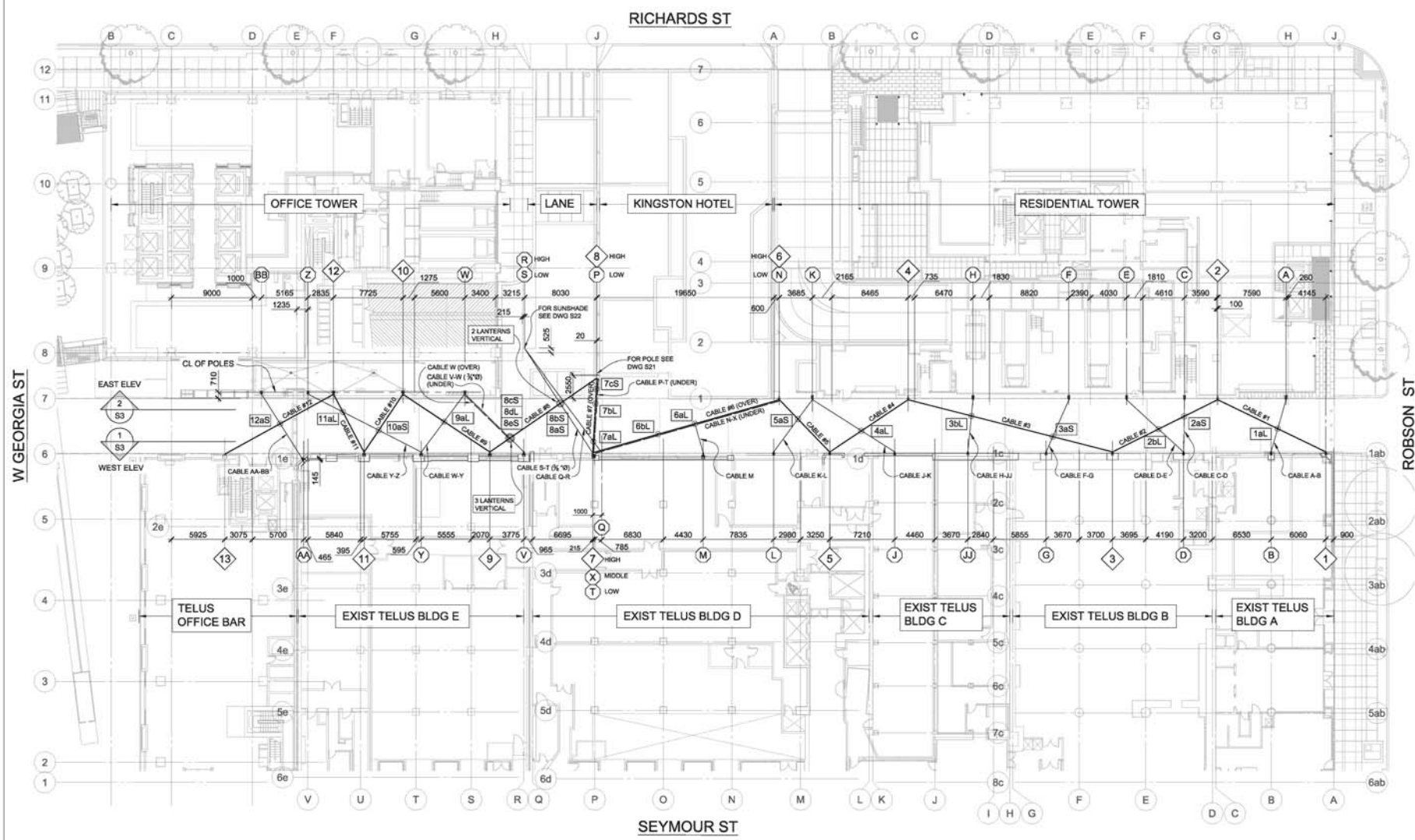
REV	DATE	BY	CHKD
01	2015.09.04		ET/EN
02	AS NOTED		LS
03	10770		





**KEY**

- ◇ PRIMARY CABLE SUPPORT POINT
- ◇ SECONDARY CABLE SUPPORT POINT
- ◇ SECONDARY (TETHERING) CABLE SUPPORT POINT
- ◇ LANTERN NUMBER
- ◇ L = LONG TYPE / S = SHORT TYPE
- PRIMARY CABLES - 'X' Ø UNO
- SECONDARY CABLES - 'X' Ø UNO (TETHERING)
- 8 BASE BUILDING GRID LINES FOR REFERENCE
- ⊙ LANTERN LOCATION
- ⊙ DOUBLE LANTERN (8a 8b)
- ⊙ TRIPLE LANTERN (8c 8d 8e)



Copyright reserved. This design and drawing is the exclusive property of C.Y. Lo & Associates and cannot be used for any purpose without the written consent of C.Y. Lo & Associates. This drawing is not to be used for construction until issued for that purpose by C.Y. Lo & Associates. Prior to commencement of the Work, the Contractor shall verify all dimensions, assume and advise to identify any errors and omissions, regardless of any discrepancies between the drawing and the S&C Contract Documents, and bring these items to the attention of the C.Y. Lo & Associates for clarification.

B RE-ISSUED FOR DISCUSSION 2015.08.14  
 A ISSUED FOR DISCUSSION 2015.08.04

TELUS  
 LANEWAY LANTERNS  
 788 SEYMOUR STREET

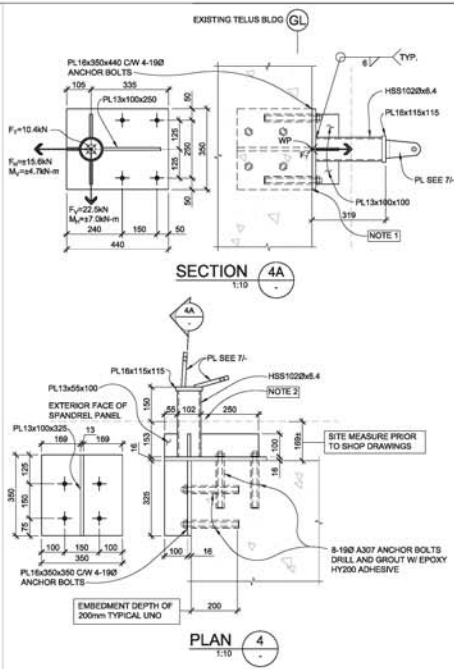
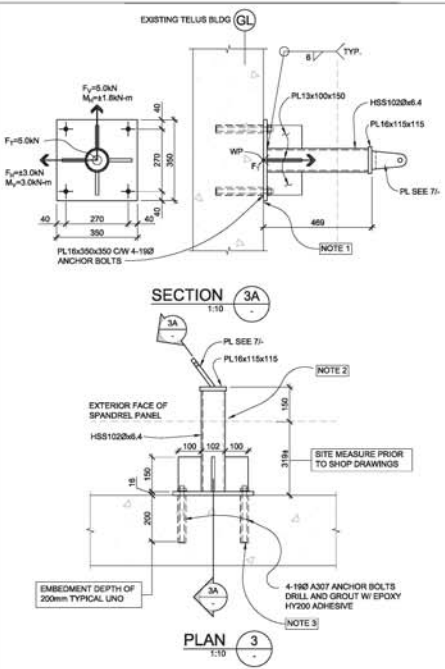
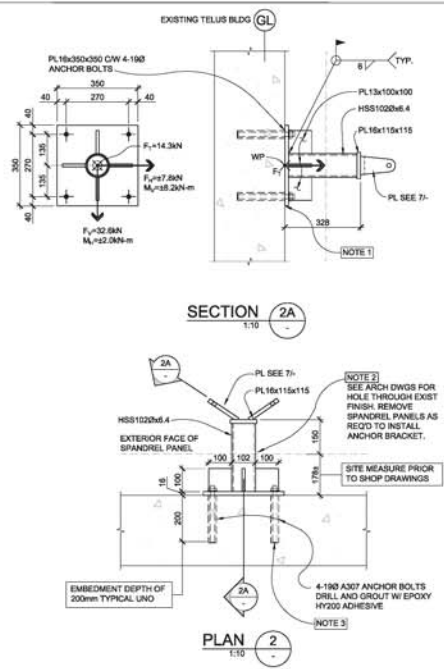
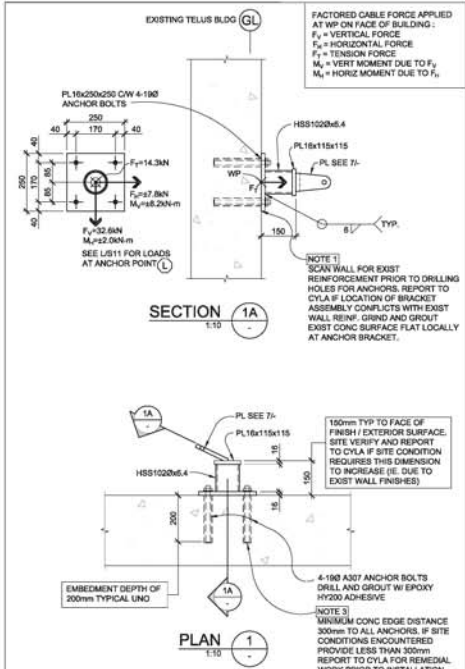
C.Y. LOH ASSOCIATES LTD  
 Consulting Structural Engineers  
 1863 Powell Street  
 Vancouver, B.C. V5L 1H8  
 T: 604.251.0858  
 E: cylo@cyla.ca

**PLAN**

DATE 2015.08.04  
 SCALE 1:200  
 DRAWN BY ETICN  
 CHECKED BY LS  
 JOB NO. 10770

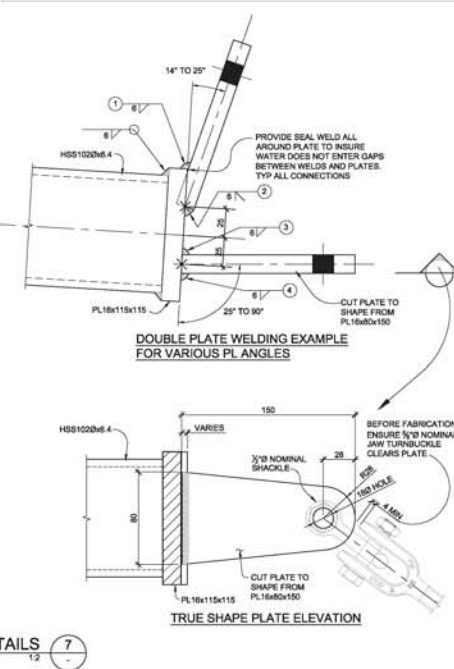
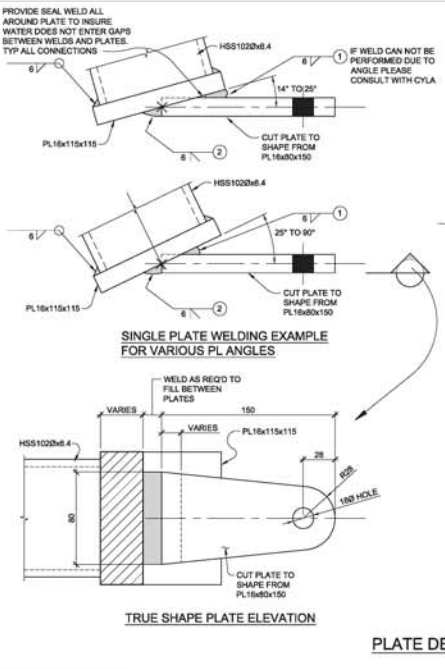
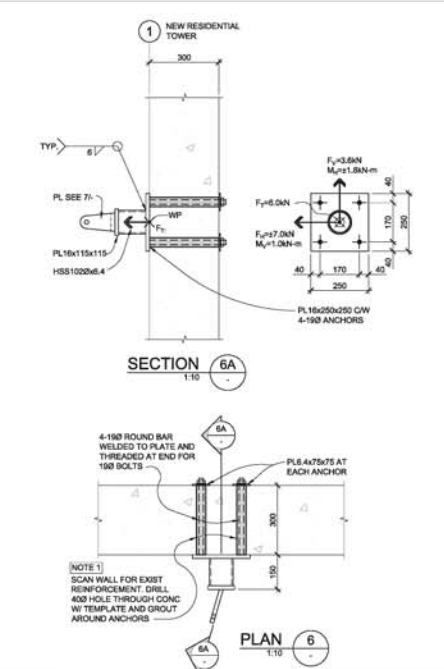
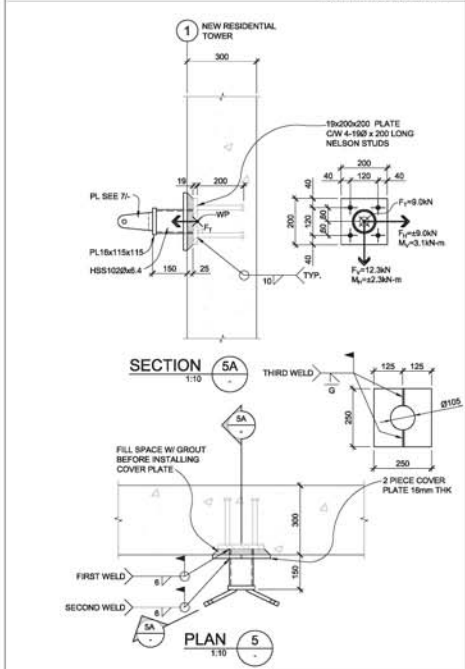
**S2**





Copyright reserved. This design and drawing is the exclusive property of C.Y. Looh Associates and cannot be used for any purpose without the written consent of C.Y. Looh Associates. This drawing is not to be used for construction until issued for that purpose by C.Y. Looh Associates. Prior to commencement of the work, the Contractor shall verify all dimensions, assume and levels to identify any errors and omissions, ascertain any discrepancies between the drawing and the full Contract Documents, and bring these items to the attention of the C.Y. Looh Associates for clarification.

B RE-ISSUED FOR DISCUSSION 2015.09.14  
A ISSUED FOR DISCUSSION 2015.09.04



TELUS  
LANEWAY LANTERNS  
788 SEYMOUR STREET

C.Y. LOOH ASSOCIATES LTD  
Consulting Structural Engineers  
1863 Powell Street  
Vancouver, B.C. V5L 1H8  
T: 604.254.0855  
E: cylooh@cylooh.ca

TYPICAL DETAILS

DATE 2015.09.04 DRAWN BY [signature] CHECKED BY [signature] SCALE AS NOTED

S4



