

Lighting Design Criteria – EXPO Tunnel, Vancouver – Weaselhead Tunnel (#31)

Reference documents:

- IESNA RP-22-11 (tunnel roadway) – See below

RP-22-11 Design Criteria

- Scene 4 (Urban)
Design Speed 50 km/h – 14m per second
Threshold criterion for E/W Travel
AADT over 15,000
Tunnel length – 40m exit open side (column 6-5), 80m closed (column 7-12A), and 160m entrance open side (column 13-22C).

Table 9 (RP-22-11)

- Light Loss Factor (LLF) – LLD – 0.8, LDD – 0.7 (assume “very dirty” and cleaning every year as per IES RP-8-14), ATF – 1, Surface reflectance – 0.9 – Total LLF = 0.51
Threshold adjustment factor Not Applicable as tunnel is over 125m long – From Table

Figure 8 (Threshold and Transitions) (RP-22-11)

- Table 2 (RP-22-11) T1 – 100% of full threshold – 43.5m/2 = 22m x 2 entrances = 25m at each entrance
Table 6 (RP-22-11) T2 – 72% of full threshold – 43.5m-22m (T1) = 21.5m however apply min 2 second rule distance = 28m at each entrance
Trans 1 – 40% of full threshold = 42m (3) + 56m (T2) = 105m – 160m = 55m

Table 7 (Interior) (RP-22-11)

- Daytime interior.....n/a

6.4.5 (RP-22-11)

- Night-time (280 m).....2.5 cd/m2

TAC

- Sidewalks5 Lux

Table with 9 columns: Zone, Required Levels (cd/m2), Distance (m), Daylight Contribution* (cd/m2), Adjusted Level (cd/m2), Wattage, # of Luminaires (Phase 1), # of Luminaires (Ultimate Design), Load(VA) (Ultimate Design). Rows include Open Entrance, T1 Starting at Column 22, T2, Trans 1, Trans 2, Trans 3/Interior, Interior/Exit, Total Length, Night-time, Total.

*DAYLIGHT CONTRIBUTION BASED ON VALUES MEASURED APRIL 2017

Additional lighting design criteria would be as follows:

- Wall luminance shall not exceed a ratio of 2.5:1 pavement luminance. Wall calculations shall be based on illuminance with 0.095 conversion factor to luminance (Table 8).
Uniformity ratios for tunnel roadway and walls shall not to exceed:
1. 2:1 (avg:min)
2. 3.5:1 (max:min)
Sidewalk uniformity should not exceed a ratio of 10:1 (avg:min)
Veiling luminance ratio can not meet RP-22-11 standards because of transition zone lengths in short tunnel.
Wall grids shall be spaced at 0.5m increments the wall at 2m and 1m elevation above grade (17-21 points per zone on both roadway and wall)
Flicker – 50 km/h (14 m/s) travel time 12 second therefore less than 20 second flicker avoidance zones not required

GENERAL TUNNEL LIGHTING NOTES AND REQUIREMENTS

- 1. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT CANADIAN ELECTRICAL CODE, MMCD, ALL LOCAL AMENDMENTS AND THE ELECTRICAL SPECIAL PROVISIONS ISSUED WITH THE CONTRACT.
2. CONTRACTOR SHALL BALANCE ALL LOADS.
3. TUNNEL LIGHTING LUMINAIRE SUPPLY AND INSTALLATION SHALL BE KENALL LUXTRAIN OR HOLOPHANE TUNNELPASS. REFER TO ATTACHED SPECIFICATIONS FOR MODELS.
4. CONTRACTOR SHALL OBTAIN ALL PERMITS AND LICENSES PRIOR TO CONSTRUCTION.
5. CONTRACTOR SHALL CONFIRM EXACT SERVICE LOCATION AND SHALL COORDINATE SERVICE CONNECTIONS WITH ELECTRICAL UTILITY PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL PAY ALL CONNECTION FEES.
6. CONTRACTOR SHALL LOCATE AND AVOID ALL UNDERGROUND/OVERHEAD CONFLICTS.
7. THE CONTRACTOR SHALL NOTIFY CITY OF VANCOUVER INSPECTORS 24 HOURS PRIOR TO COMMENCEMENT OF UNDERGROUND AND OVERGROUND ELECTRICAL WORK.
8. THE CONTRACTOR SHALL LAYOUT ALL EQUIPMENT AND SHALL REVIEW/COORDINATE WITH THE CONTRACT ADMINISTRATOR IN THE FIELD PRIOR TO CONSTRUCTION.
9. ALL EQUIPMENT SHALL BE CSA APPROVED.
10. LOCATE AND STAKE ALL EXISTING AND PROPOSED UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR TO CALL B.C. ONE-CALL AT 1-800-474-6886.
11. ALL MOUNTING HARDWARE SHALL BE GALVANIZED STEEL AND MEET THE REQUIREMENTS OF THE MANUFACTURER'S INSTALLATION MANUAL.
12. ALL CONDUCTORS SHALL BE STRANDED COPPER, TYPE RWU90 (XLPE) INSULATED AND COLOUR CODED UNLESS OTHERWISE NOTED.
13. LUMINAIRES SHALL HAVE NEMA WATTAGE LABELS.
14. ALL COMMON CIRCUIT WIRING SHALL BE TY-RAPPED TOGETHER AND TAGGED AS NOTED IN SPECIFICATIONS.
15. PROVIDE SHOP DRAWINGS FOR ALL EQUIPMENT.
16. ALL TUNNEL CABLING (FIELD WIRING) SHALL BE RW90 CABLE. TERMINATE CABLE TRANSITION FROM LUMINAIRE SUPPORT BRACKET TO CONDUIT WITH STRAIN RELIEF CONNECTOR OR WEATHER HEADS.
17. ALL CONDUCTORS SHALL BE SPLICED USING SOLDERLESS CONNECTORS AND COMPLETELY COVERED WITH PVC TAPE.
18. SPECIFIC EQUIPMENT AND SUPPLIERS ARE NOTED ON THE DRAWINGS. ALTERNATE MATERIALS SHALL MEET THE APPROVAL OF THE ENGINEER OF RECORD.
19. MOUNTING HARDWARE SHALL BE DESIGNED BY STEEL FABRICATOR TO SUIT LUMINAIRE SPACING AND INSERTS (ANCHORS) IN THE STRUCTURE. MOUNTING HARDWARE SHALL MEET THE APPROVAL OF TUNNEL STRUCTURAL DESIGN ENGINEER.
20. TUNNEL LUMINAIRES SHALL HAVE SEISMIC RESTRAINTS. CONTRACTOR SHALL HIRE A SEISMIC ENGINEER TO REVIEW, APPROVE, AND PROVIDE ALL REQUIRED SCHEDULES.
21. CONTRACTOR SHALL SET-UP, TEST AND COMMISSION ALL EQUIPMENT TO THE SATISFACTION OF THE ENGINEER.
22. CONTRACTOR SHALL PROVIDE O&M MANUALS IN PDF FORMAT.
23. SEE BC HYDRO REGULATIONS FOR SERVICE CONNECTION DETAILS.
24. CONTRACTOR SHALL SUBMIT A TRAFFIC MANAGEMENT PLAN TO THE CITY OF VANCOUVER FOR APPROVAL PRIOR TO CONSTRUCTION.

TUNNEL LIGHTING LEGEND

- Junction box symbol: COV STANDARD SYNERTech TYPE 5 JUNCTION BOX C/W TIER 22 LID
Power Conduit symbol: POWER CONDUIT AND CONDUCTORS
Communication Conduit symbol: COMMUNICATION CONDUIT AND CONDUCTORS
TNXXX symbol: TUNNEL LUMINAIRE #

DECOMMISSIONING PLAN

- 1. INSTALL PRE-FABRICATED CABLE TRAY SYSTEM (W/ LIGHTING AND CONDUCTORS) AND NEW TUNNEL LIGHTING KIOSK.
2. INTERCEPT EXIST. TUNNEL PANEL CONDUIT WITH NEW JUNCTION BOX AND EXTEND TO NEW TUNNEL LIGHTING KIOSK.
3. ENSURE NEW SYSTEM IS OPERATIONAL. DECOMMISSION OLD TUNNEL LIGHTING SYSTEM. REMOVE CONDUCTORS, CONDUIT, FIXTURES, KIOSK, CONCRETE PAD, AND RACEWAYS. DISPOSE OFFSITE.

DRAWING LIST table with 2 columns: SHEET # and DESCRIPTION. Rows include SHEET 1 GENERAL NOTES, SHEET 2 SITE PLAN, SHEET 3 ELECTRICAL DETAILS, SHEET 4 TUNNEL WIRING, SHEET 5 LIGHTING LAYOUT, SHEET 6 FIXTURE MOUNTING DETAILS, SHEET 7 TYPICAL LIGHTING CONTROL SCHEMATIC.

LSeq 2 - Closed Section in Tunnel

Table with 10 columns: Section, Ring #, 1, 2, 3, 4, 5, 6, 7, 8, 9, SUM. Rows 1-12 showing cumulative load values. Total 12584.3.

LSeq 1 - Open Section (Lseq) at Entrance

Table with 10 columns: Section, Ring #, 1, 2, 3, 4, 5, 6, 7, 8, 9, SUM. Rows 1-12 showing cumulative load values. Total 118809.

EXISTING TUNNEL LIGHTING SYSTEM AND CONNECTED STREET LIGHTING AND TRAFFIC SIGNAL SHALL REMAIN OPERATIONAL THROUGHOUT CONSTRUCTION. ALL EXISTING TUNNEL LUMINAIRE, CONDUCTORS AND CONDUIT SHALL BE REMOVED AFTER THE NEW SYSTEM IS INSTALLED AND OPERATIONAL. IF EXISTING LIGHT MUST BE REMOVED BEFORE NEW SYSTEM IS OPERATIONAL CONTRACTOR SHALL IMPLEMENT A TRAFFIC MANAGEMENT PLAN FOR THE INTERIM (TO BE APPROVED BY CITY OF VANCOUVER).

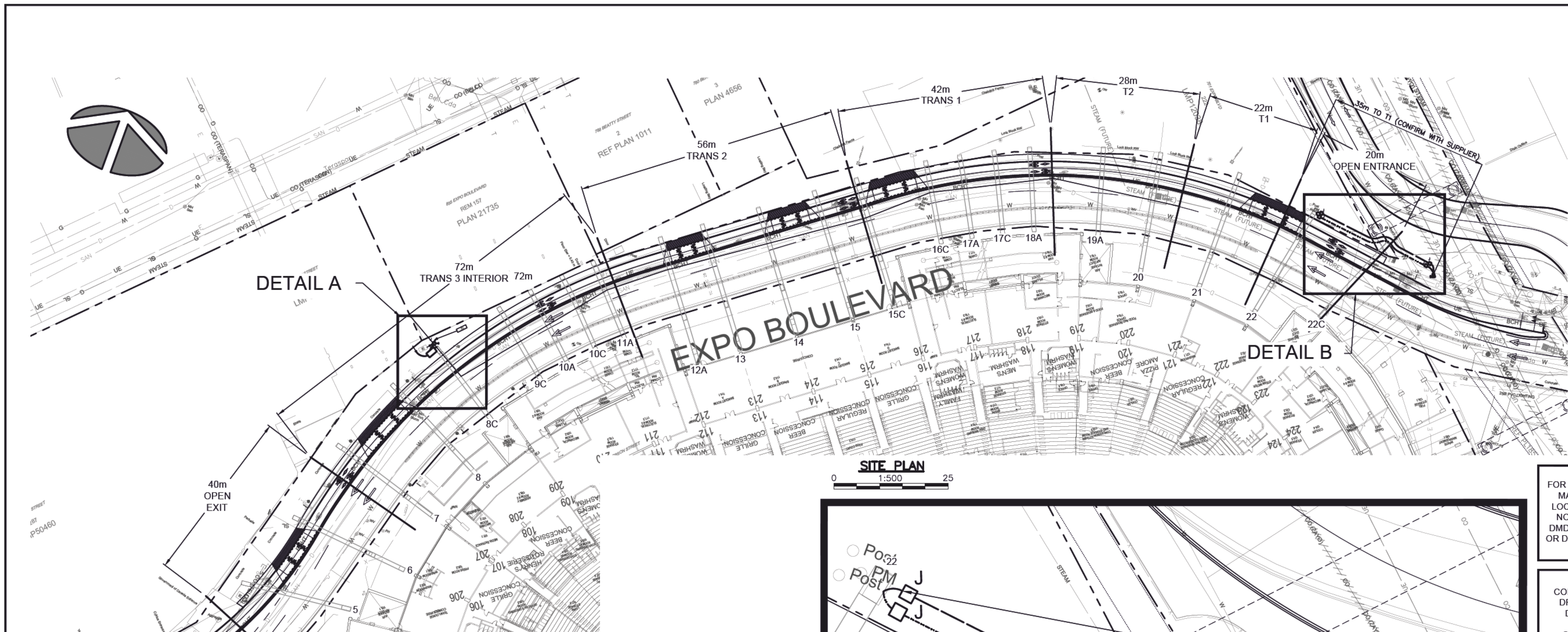
LOCATING EQUIPMENT
FOR CLARITY CONDUITS, JUNCTION BOXES AND STREETLIGHT POLES MAY NOT BE SHOWN AT DESIGN OFFSETS. CONTRACTOR SHALL LOCATE ALL EQUIPMENT BASED ON STATIONS AND/OR OFFSETS AS NOTED AND SHALL NOT RELY ON COORDINATES OBTAINED FROM DMD DIGITAL DRAWINGS. CONTRACTOR TO REPORT ANY CONFLICTS OR DISCREPANCIES TO DMD & ASSOCIATES LTD. PRIOR TO ORDERING EQUIPMENT.

CHECK BEFORE YOU DIG
CONTRACTOR SHALL REFER TO MUNICIPAL RECORD / CIVIL DESIGN DRAWINGS FOR ALL OTHER UTILITIES, SERVICE LOCATIONS, AND DETAILS. THE EXACT LOCATION OF THESE UTILITIES SHALL BE DETERMINED ON SITE BY THE CONTRACTOR. CONTRACTOR TO REPORT ANY CONFLICTS OR DISCREPANCIES TO DMD & ASSOCIATES LTD. PRIOR TO ORDERING EQUIPMENT.

DMD & Associates Ltd. logo and contact information including address, phone, fax, and project-specific details like designer, drawer, and date.

NOT FOR CONSTRUCTION
2018-05-25

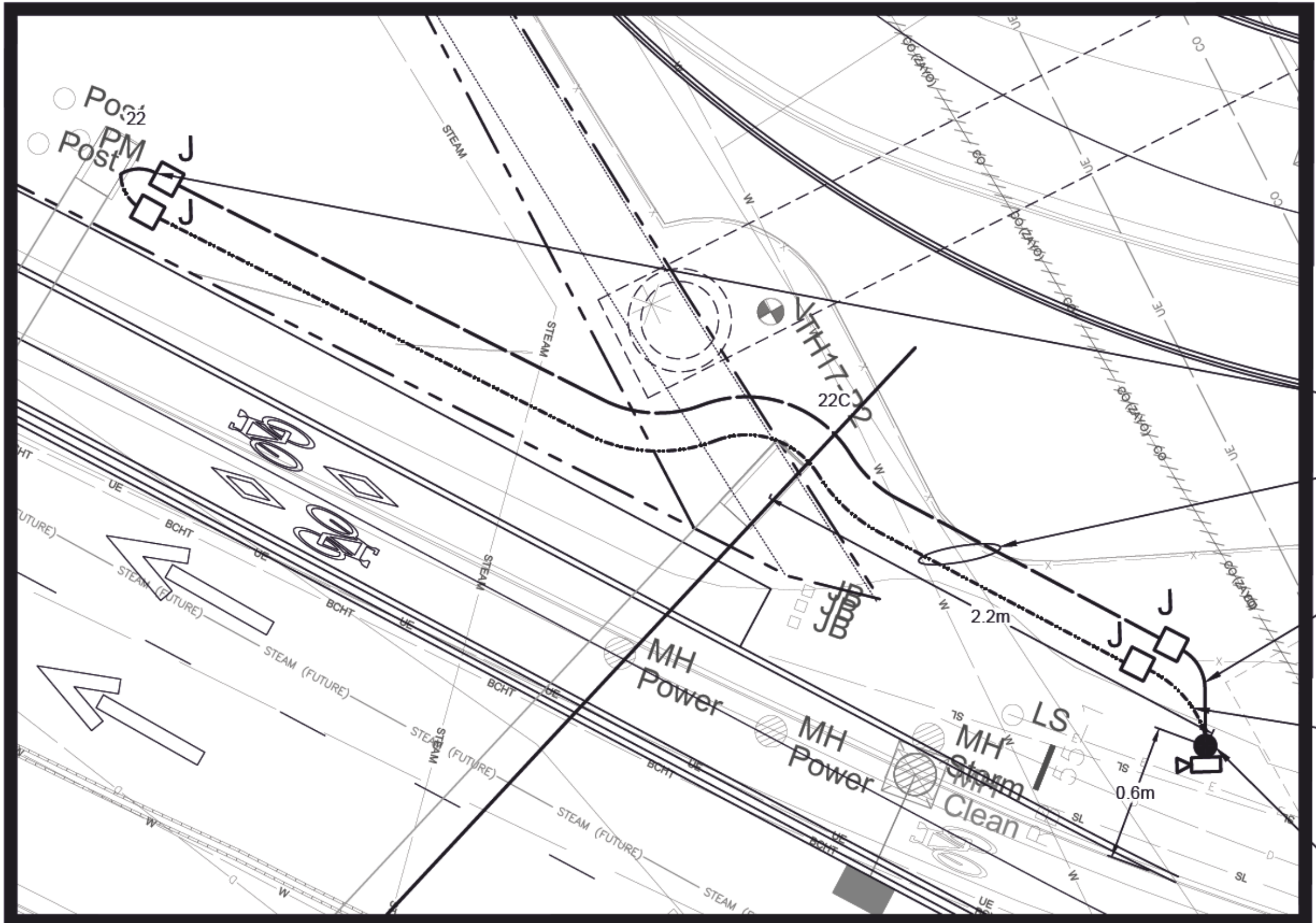
Revision table with 5 columns: No., DATE, BY, CHKD, REVISION. Rows A through E showing submission and tender review stages. Includes project and sheet reference information at the bottom.



CONDUIT ROUTING IS
DIAGRAMMATIC ONLY

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2018-05-25

SITE PLAN
1:500



DETAIL B
1:100

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INSTALL:
2-35mm RPVC UP COLUMN TO FIXTURE SUPPORT AND TERMINATE WITH WEATHERHEAD'S. PROTECT CONDUIT 4m UP COLUMN WITH GALV. STEEL CONDUIT GUARD

COMMON TRENCH (TYP)

INSTALL:
1-35mm RPVC
2 No. 10 RWU90 L CAM PWR
1 No. 12 RWU90 BOND
(TRENCH BEHIND SIDEWALK)

INSTALL:
1-35mm RPVC
RS485L CAM

PROVIDE:
NEW POLE LUMINANCE SENSOR (AIMING TO BE CONFIRMED BY SUPPLIER) REFER TO DETAIL ON SHEET 4



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DESIGNED	M. DE GOUEVA
DRAWN	J. KRUGER
CHECKED	M. STERLING
DATE	JUNE 9/2017
SCALE	AS NOTED
SEAL	



LOCATE & EXTEND:
EXIST. ST. LTG. & TRAFFIC SIGNAL KIOSK CONDUIT & CONDUCTORS TO NEW JB.

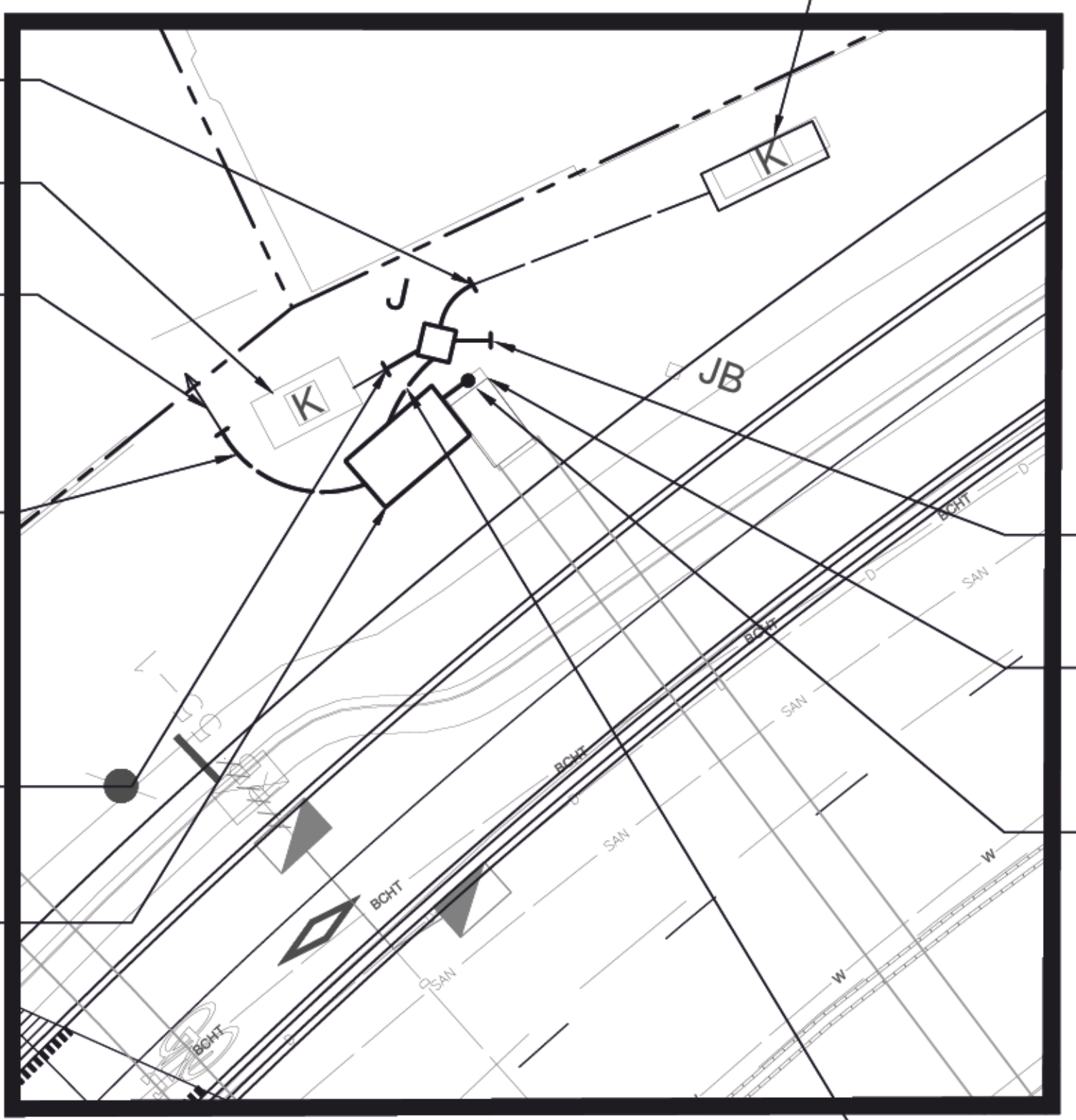
DECOMMISSION & REMOVE:
EXIST. 347/600V METERED SERVICE KIOSK

BC HYDRO CONDUIT AND CONDUCTORS

COORDINATE WITH BC HYDRO TO LOCATE AND EXTEND BC HYDRO CONDUIT AND CONDUCTORS TO NEW KIOSK. BC HYDRO TO REMOVE SECONDARY CABLE AND INSTALL NEW CABLE.

LOCATE, INTERCEPT & EXTEND:
EXIST. 2-53mm RPVC TO NEW JB AND REWIRE. REFER TO SINGLE LINE DIAGRAM ON SHEET 6.

PROVIDE:
347/600V SERVICE KIOSK WITH TUNNEL LIGHTING METERED FEEDER (EXACT LOCATIONS TO BE CONFIRMED ON SITE)



DETAIL A
1:100

INSTALL:
2-53mm RPVC STUB OUT (FOR FUTURE USE)

REMOVE:
EXIST TUNNEL LIGHTING PANEL & CONCRETE BASE AND REPLACE SIDEWALK

REMOVE:
EXISTING CONDUIT AND CONDUCTORS UP THE COLUMN

INSTALL:
7-78mm & 2-35mm RPVC UP COLUMN TO FIXTURE SUPPORT AND TERMINATE CONDUITS WITH WEATHERHEAD'S. PROTECT CONDUIT AND CABLES 4m UP COLUMN WITH GALV. STEEL CONDUIT GUARD.

INSTALL:
4-78 mm RPVC (KIOSK TO JB)

No.	DATE	BY	CHKD	REVISION
A	2017-06-09	MD	MGDS	50% SUBMISSION
B	2017-07-07	MD	MGDS	90% SUBMISSION
C	2017-11-22	MD	MGDS	ISSUED FOR TENDER REVIEW
D	2018-04-10	MD	MGDS	98% SUBMISSION
E	2018-05-25	MD	MGDS	ISSUED FOR TENDER

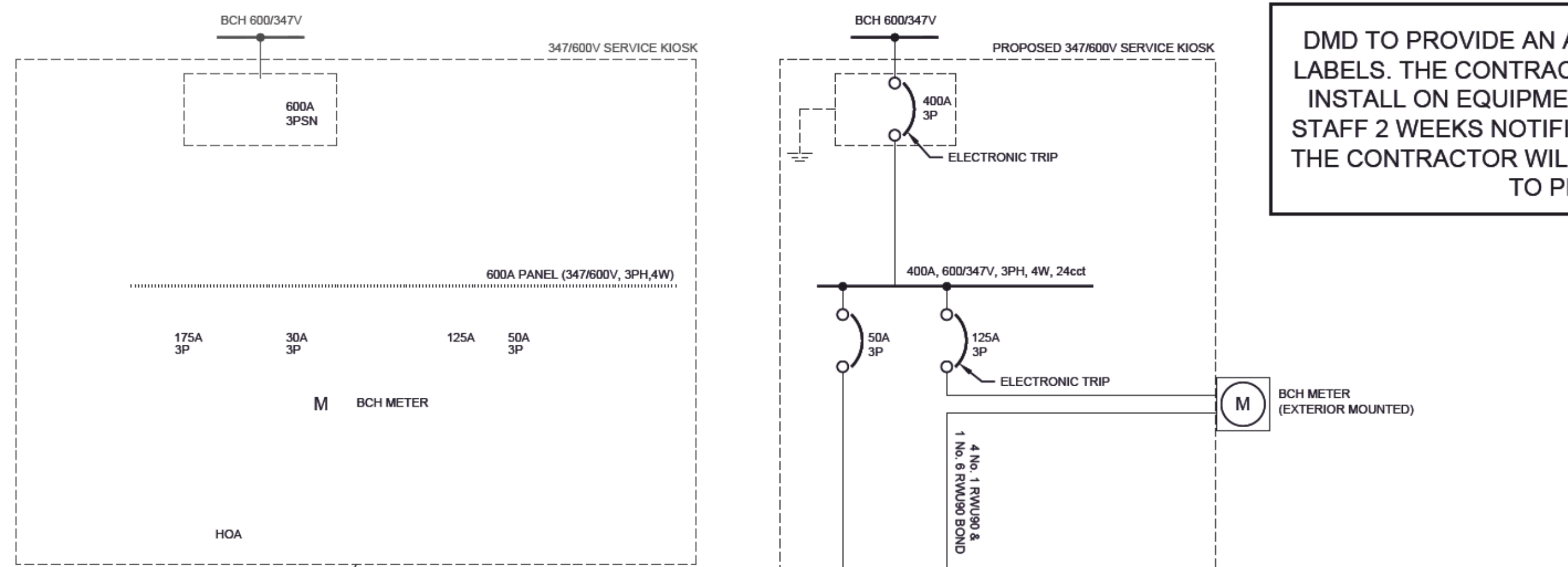
CITY OF VANCOUVER
453 WEST 12TH AVENUE, VANCOUVER, B.C. V5Y1V4

**EXPO BOULEVARD TUNNEL LIGHTING (PHASE 1)
SITE PLAN
VANCOUVER, B.C.**

PROJECT No.	5608-17-02 of 07	SHEET No.	2 of 7	REVISION	E
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DRAWING REFERENCE

CANCEL PRINTS BEARING PREVIOUS LETTER



DMD TO PROVIDE AN ARC FLASH STUDY AND ARC FLASH WARNING LABELS. THE CONTRACTOR TO PICK UP THE LABELS FROM DMD AND INSTALL ON EQUIPMENT ON SITE. CONTRACTOR TO PROVIDE DMD STAFF 2 WEEKS NOTIFICATION FOR STUDY AND LABEL PRODUCTION. THE CONTRACTOR WILL CONTACT DMD & ASSOCIATES FOR A QUOTE TO PROVIDE THE ABOVE WORKS.

FAULT CURRENT CALCULATION
 BASED ON A MAXIMUM TRANSFORMER SIZE OF 500 KVA AND A TRANSFORMER IMPEDENCE OF 4.0%

$$I_{sc} = \frac{kVA}{V_{LL} \times \sqrt{3} \times \%Z}$$

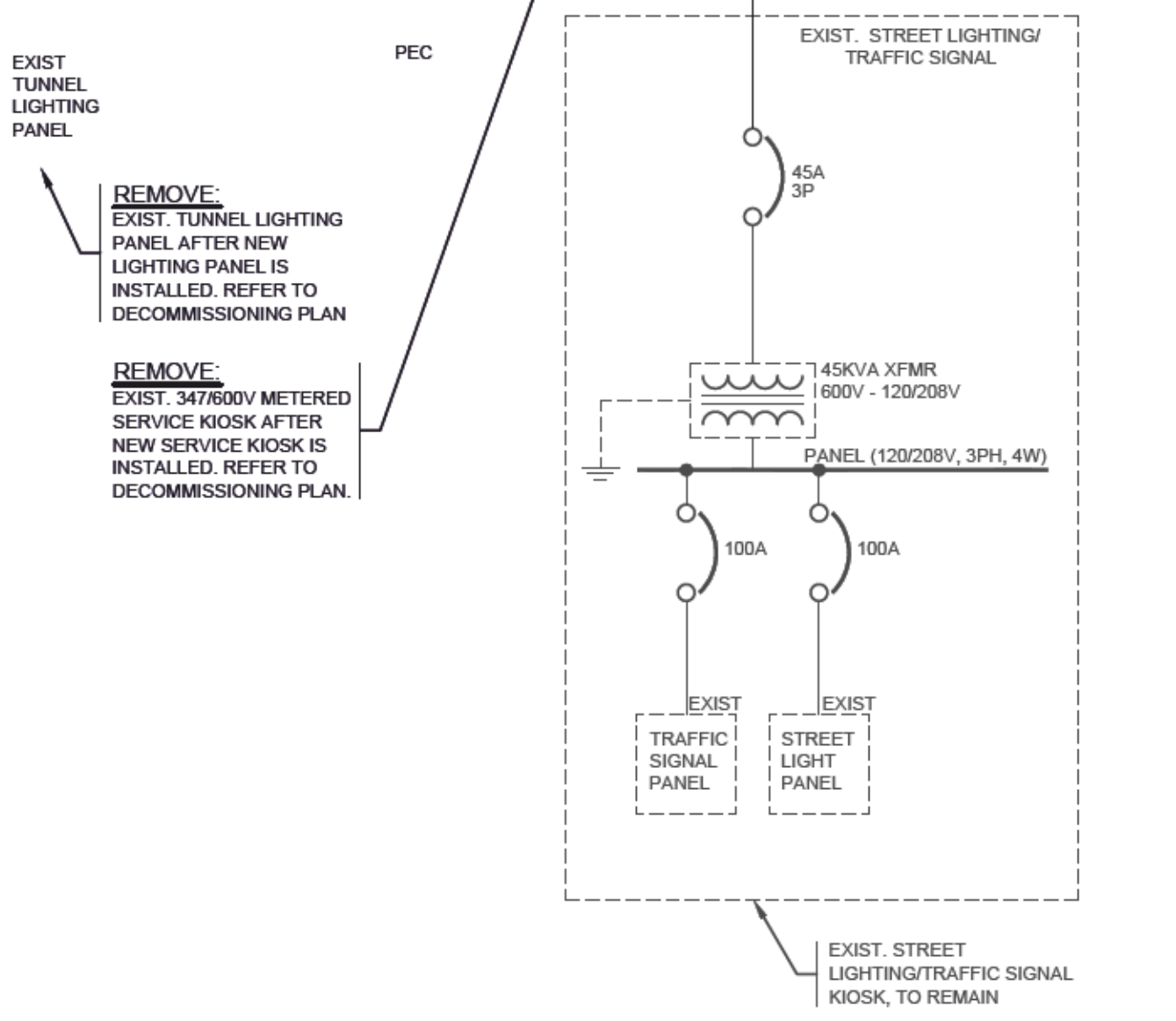
$$I_{sc} = \frac{500}{600 \times 1.732 \times 0.04}$$

I_{sc} = 12 kA INTERRUPTING CURRENT
 (SERIES RATED EQUIPMENT ALLOWED. SERIES RATING CALCULATIONS SHALL BE PROVIDED BY EQUIPMENT SUPPLIER.)

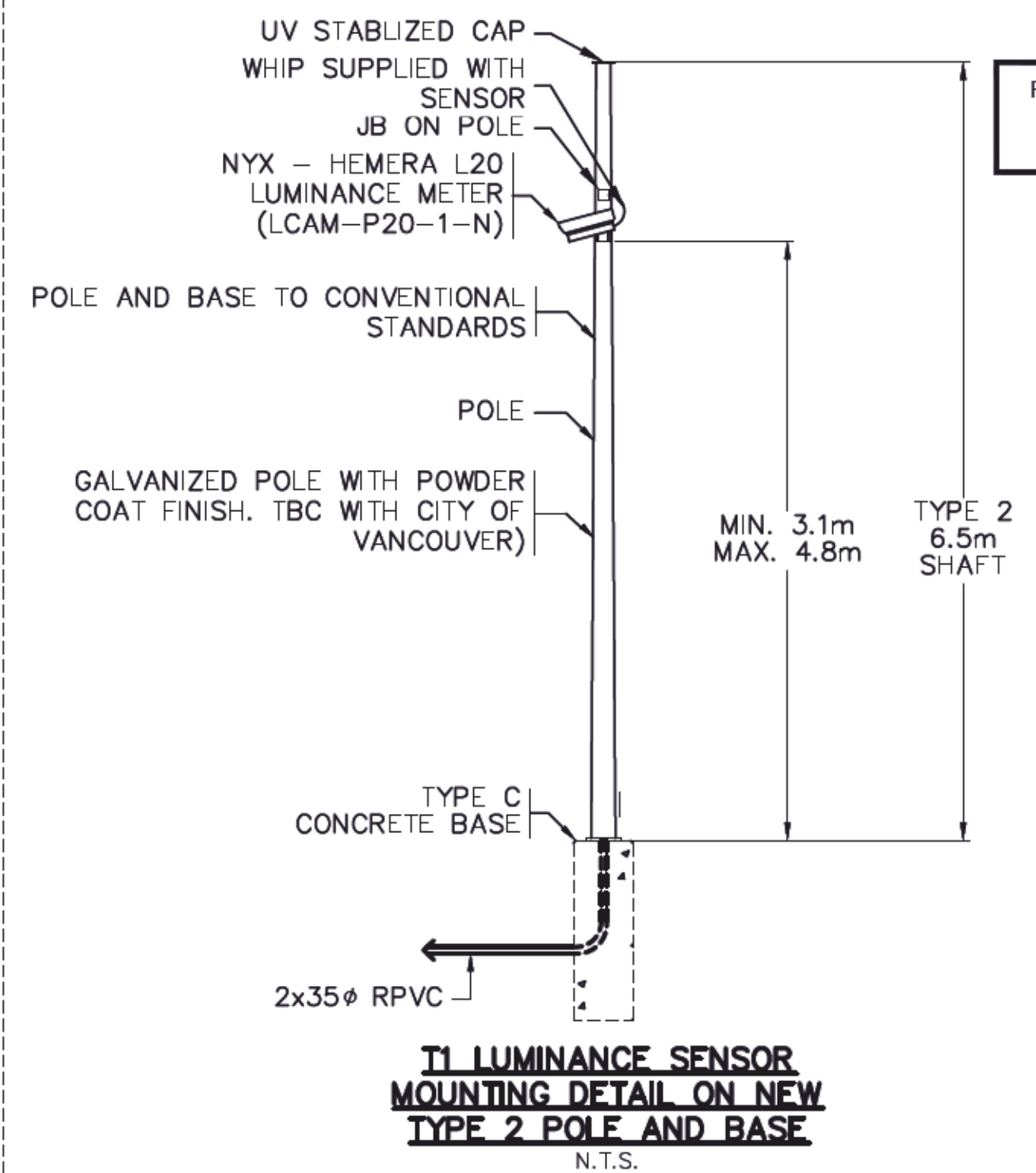
Panel Schedule - 347/600V Main Panel (SPARE CIRCUITS NOT SHOWN)

Description	vA	Ampere			Circuit Number	Bkr	ØA ØB ØC			Bkr	Circuit Number	Ampere			vA	Description
		ØA	ØB	ØC			ØA	ØB	ØC			vA				
T1 and Entrance Lums (9)	3393	9.8			1						2	9.8			3393	T1 and Entrance Lums (9)
T1 and Entrance Lums (9)	3393		9.8		3	20A 3P				20A 3P	4		9.8		3393	T1 and Entrance Lums (9)
T1 and Entrance Lums (9)	3393			9.8	5						6			9.8	3393	T1 and Entrance Lums (9)
T2 Lums (10)	3770	10.9			7						8	8.7			3016	Trans 1 Lums (8)
T2 Lums (9)	3393		9.8		9	20A 3P				20A 3P	10		8.7		3016	Trans 1 Lums (8)
T2 Lums (9)	3393			9.8	11						12			8.7	3016	Trans 1 Lums (8)
Trans 2 Lums (8)	3016	8.7			13						14	8.7			3016	Trans 3 and Exit (8)
Trans 2 Lums (8)	3016		8.7		15	20A 3P				20A 3P	16		7.6		2637.2	Trans 3 and Exit (7)
Trans 2 Lums (8)	3016			8.7	17						18			7.6	2637.2	Trans 3 and Exit (7)
120/208V Panel	1500	4.3			19						20	5.2			1800	Lighting Controller
120/208V Panel	1500		4.3		21	15A 3P				15A 3P	22		5.2		1800	Lighting Controller
120/208V Panel	1500			4.3	23						24			5.2	1800	Lighting Controller
Subtotal	34283	33.7	32.6	32.6							32.3	31.3	31.3	32917.4	Subtotal	
TOTAL	67200.4	66.0	63.8	63.8												

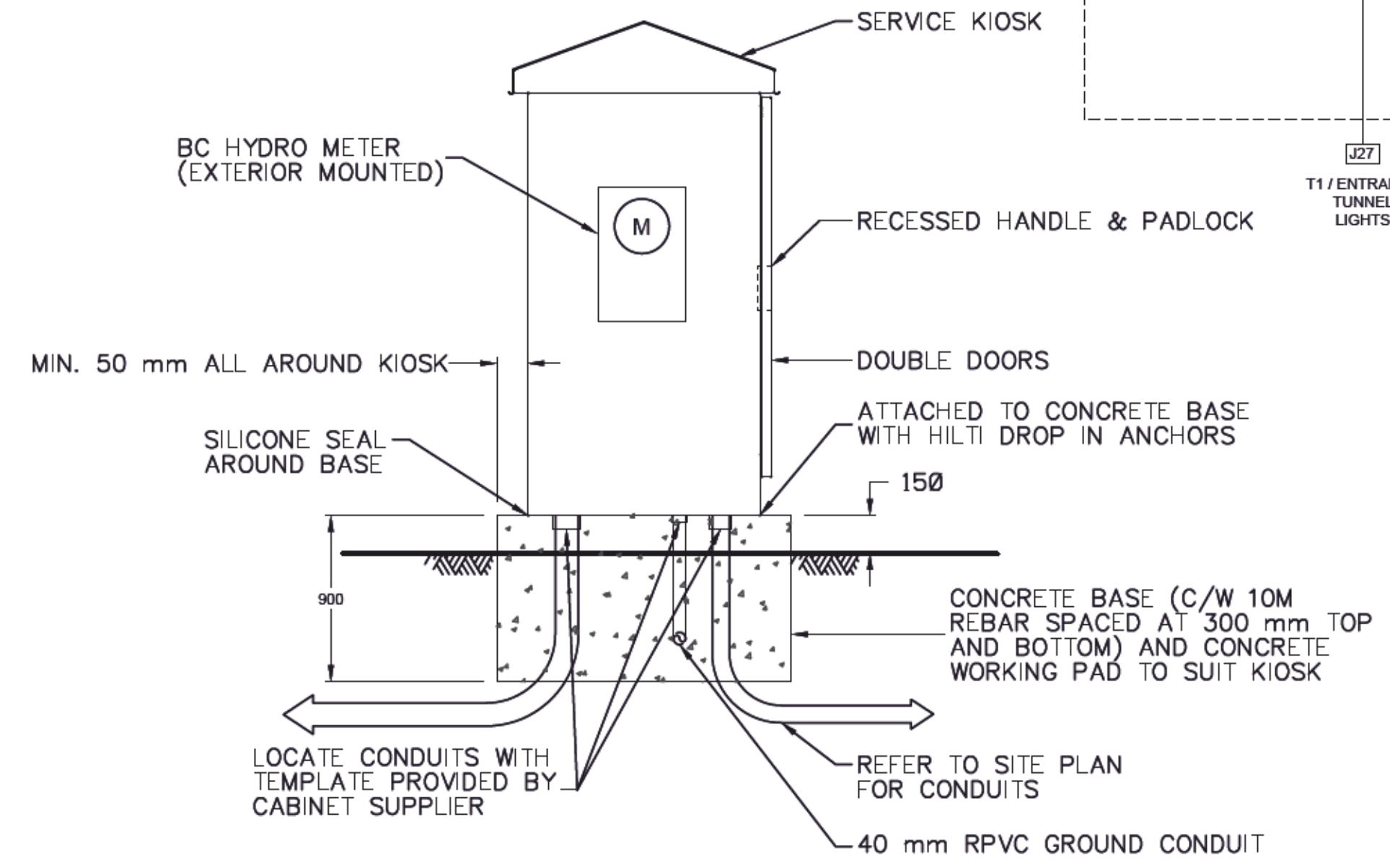
PANEL SCHEDULE



KIOSK MANUFACTURER SHALL ENSURE CIRCUIT BREAKER SELECTION TO PROVIDE COORDINATION. THIS SHALL BE REVIEWED BY DMD & ASSOCIATES LTD. BY A COORDINATION STUDY PRIOR TO SHOP DRAWING APPROVAL.



T1 LUMINANCE SENSOR MOUNTING DETAIL ON NEW TYPE 2 POLE AND BASE
N.T.S.



TUNNEL LIGHTING KIOSK DETAIL
N.T.S.

CHECK BEFORE YOU DIG
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LOCATING EQUIPMENT
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ALL SHADED ITEMS ARE EXISTING. SCOPE OF WORK INCLUDES DARK ITEMS

NOT FOR CONSTRUCTION
2018-05-25

No.	DATE	BY	CHKD	REVISION
A	2017-06-9	MD	MGDS	50% SUBMISSION
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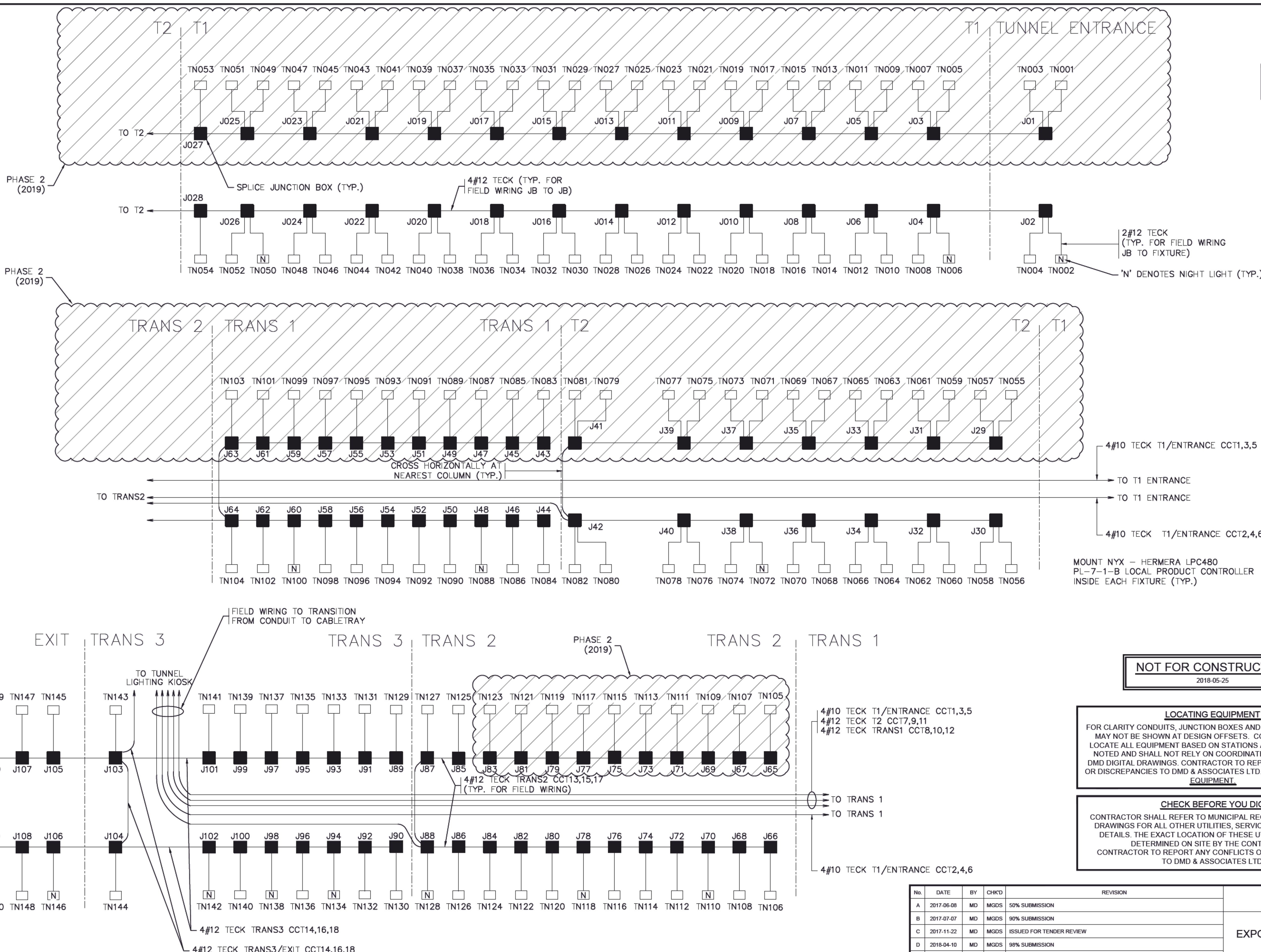
CITY OF VANCOUVER
 453 WEST 12TH AVENUE, VANCOUVER, B.C. V5Y1V4
EXPO BOULEVARD TUNNEL LIGHTING (PHASE 1)
 ELECTRICAL DETAILS
 VANCOUVER, B.C.

PROJECT No.	5608-17-03 of 07	SHEET No.	3 of 7	REVISION	E
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DESIGNED	M. DEGOUVEIA
DRAWN	J. KRUGER
CHECKED	M. STERLING
DATE	JUNE 9/2017
SCALE	AS NOTED

PROFESSIONAL ENGINEER
 M. G. D. STERLING
 #40859
 2018-05-25



ENSURE FIXTURES ARE CONNECTED TO ALTERNATING CIRCUITS. REFER TO LAYOUT ON SHEET 5 & 6.

2#12 TECK (TYP. FOR FIELD WIRING JB TO FIXTURE)
 'N' DENOTES NIGHT LIGHT (TYP.)

4#10 TECK T1/ENTRANCE CCT1,3,5
 TO T1 ENTRANCE
 TO T1 ENTRANCE
 4#10 TECK T1/ENTRANCE CCT2,4,6
 MOUNT NYX - HERMERA LPC480
 PL-7-1-B LOCAL PRODUCT CONTROLLER
 INSIDE EACH FIXTURE (TYP.)

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 2018-05-25

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CHECKED	M. STERLING
DATE	JUNE 9/2017
SCALE	NTS
SEAL	

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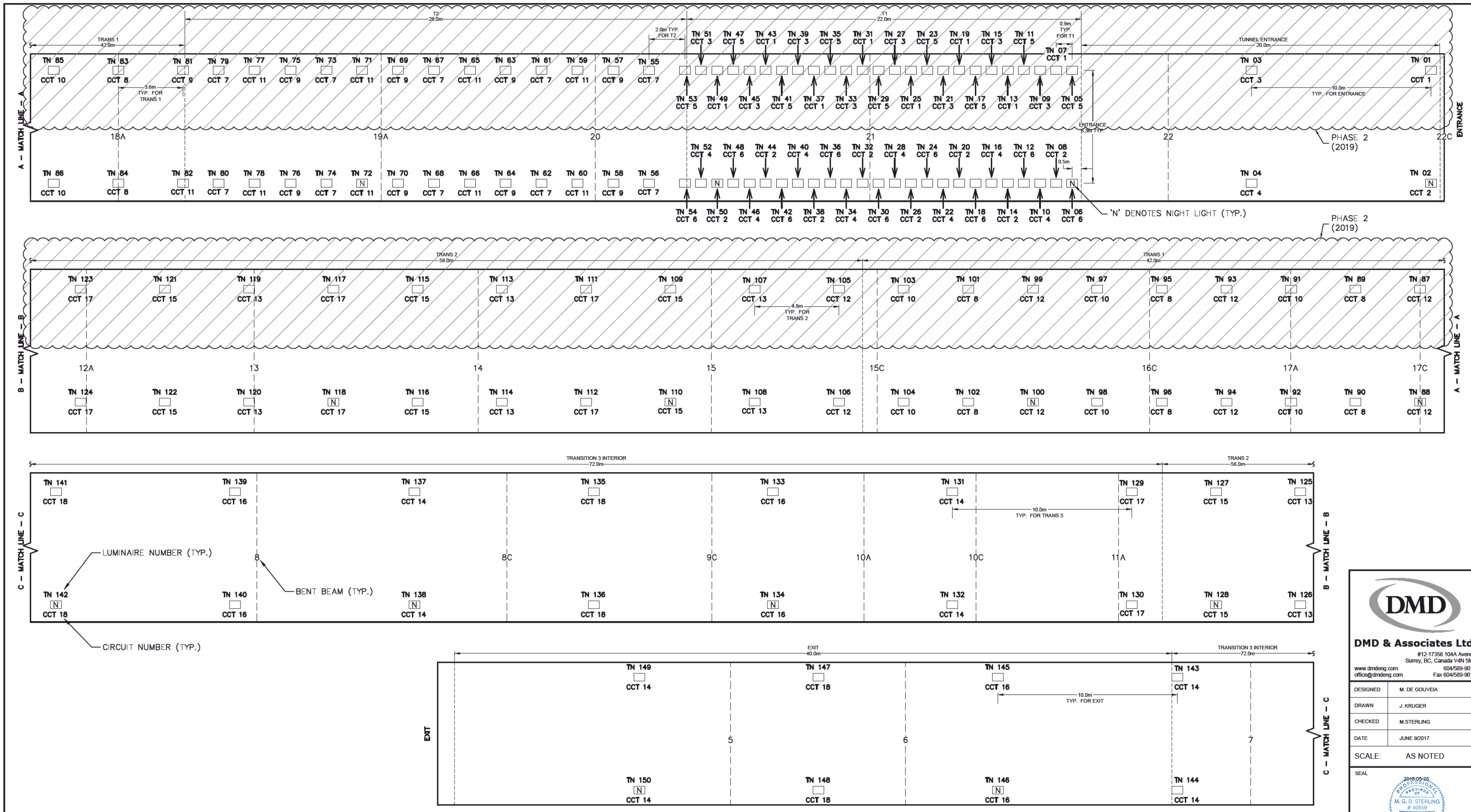
CITY OF VANCOUVER
 453 WEST 12TH AVENUE, VANCOUVER, B.C. V5Y1V4

**EXPO BOULEVARD TUNNEL LIGHTING (PHASE 1)
 TUNNEL WIRING
 VANCOUVER, B.C.**

PROJECT No.	SHEET No.	REVISION
5608-17-04 of 07	4 of 7	E

DRAWING REFERENCE

TUNNEL WIRING DIAGRAM
 N.T.S.



PROPOSED LUMINAIRE SPACING LAYOUT



LOCATING EQUIPMENT
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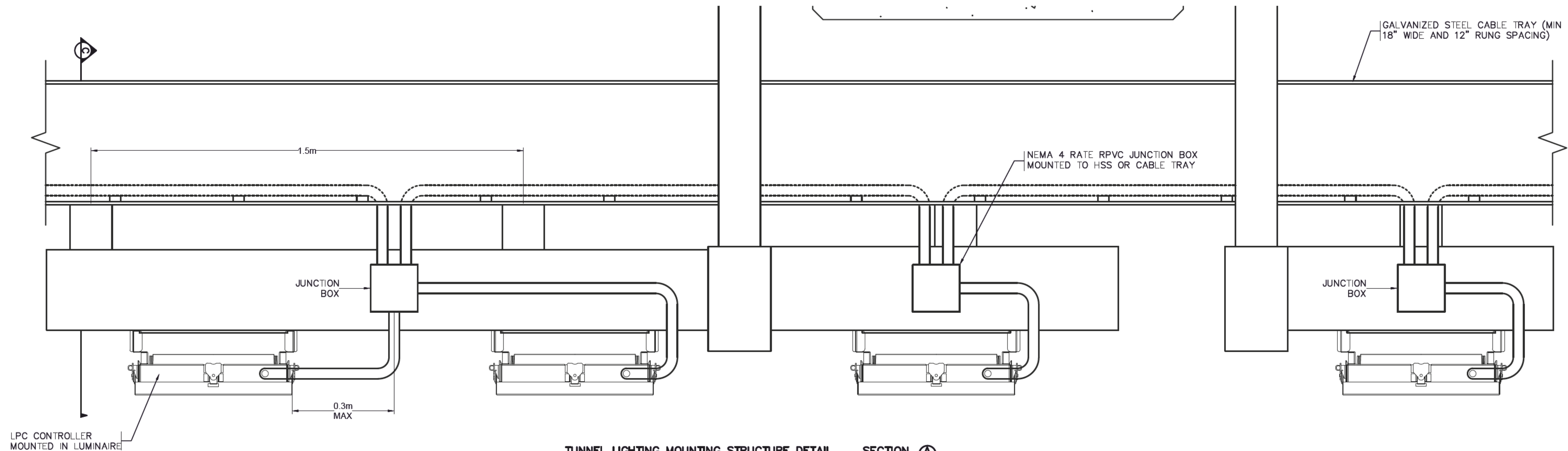
CITY OF VANCOUVER
 453 WEST 12TH AVENUE, VANCOUVER, B.C. V5Y1V4
**EXPO BOULEVARD TUNNEL LIGHTING (PHASE 1)
 LIGHTING LAYOUT**
 VANCOUVER, B.C.

PROJECT No. 5608-17-05 of 07 SHEET No. 5 of 7 REVISION E

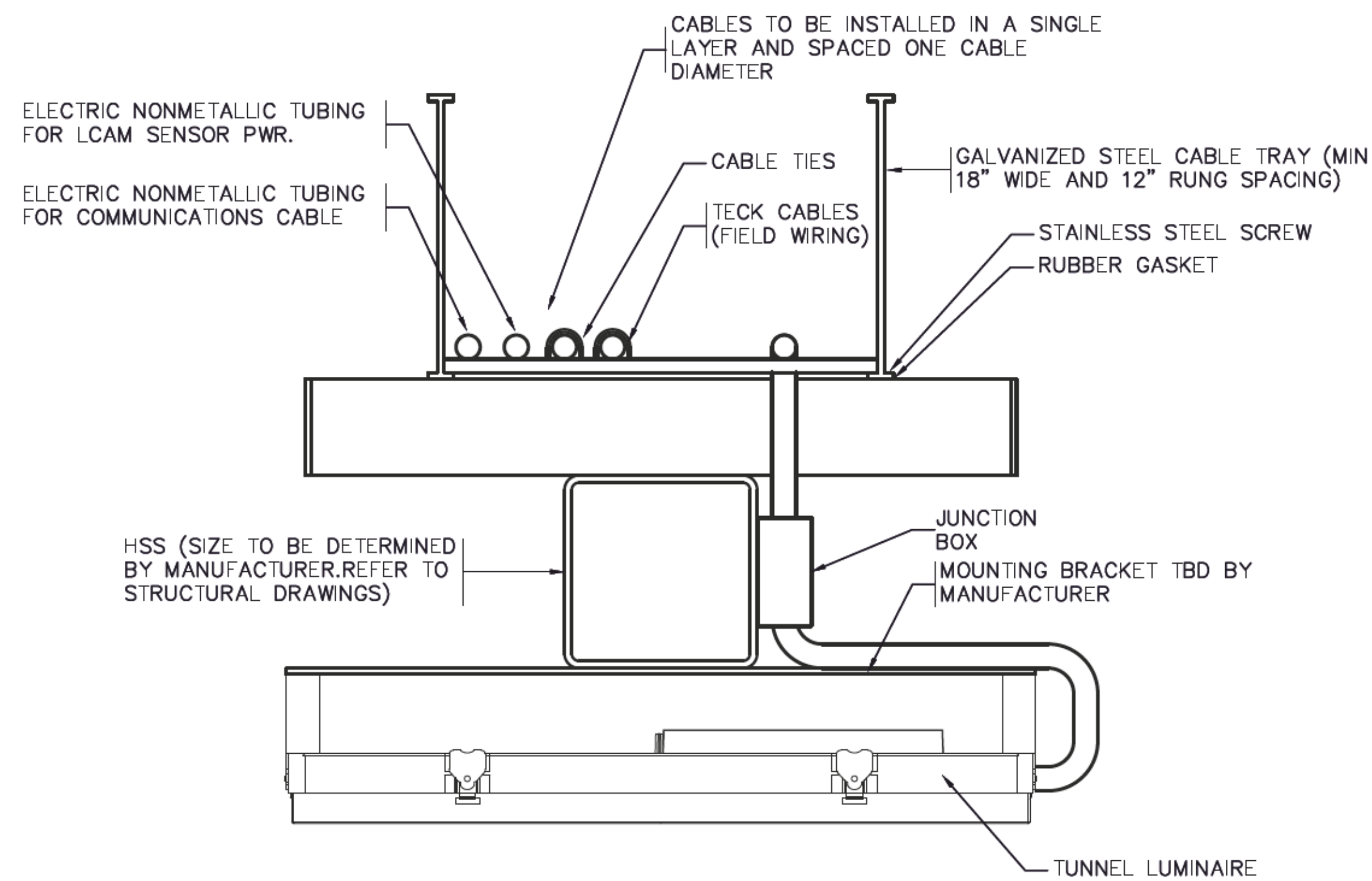
DMD
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DESIGNED	M. DE GOUVEIA
DRAWN	J. KRUGER
CHECKED	M. STERLING
DATE	JUNE 9/2017
SCALE:	AS NOTED
SEAL	

DRAWING REFERENCE CANCEL PRINTS BEARING PREVIOUS LETTER

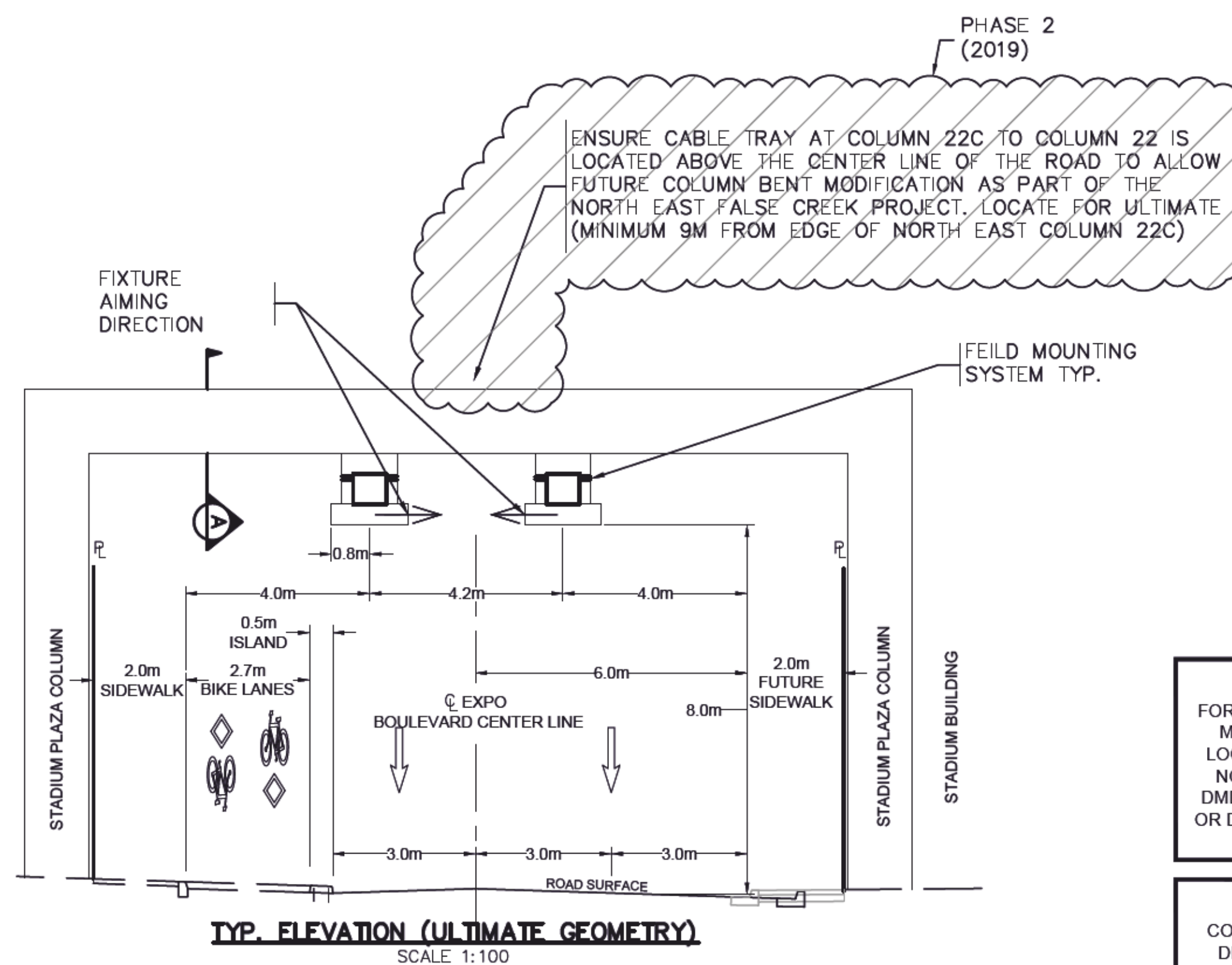


TUNNEL LIGHTING MOUNTING STRUCTURE DETAIL SECTION A
SCALE 1:5



TUNNEL LIGHTING MOUNTING STRUCTURE DETAIL SECTION B
SCALE 1:5

BOND CABLE AND OTHER METAL PARTS WITH #8 (COPPER) RWU90



TYP. ELEVATION (ULTIMATE GEOMETRY)
SCALE 1:100

REFER TO STRUCTURAL DRAWINGS FOR ATTACHMENT INFORMATION (DWG S-001 TO S-004)

LOCATING EQUIPMENT
FOR CLARITY CONDUITS, JUNCTION BOXES AND STREETLIGHT POLES MAY NOT BE SHOWN AT DESIGN OFFSETS. CONTRACTOR SHALL LOCATE ALL EQUIPMENT BASED ON STATIONS AND/OR OFFSETS AS NOTED AND SHALL NOT RELY ON COORDINATES OBTAINED FROM DMD DIGITAL DRAWINGS. CONTRACTOR TO REPORT ANY CONFLICTS OR DISCREPANCIES TO DMD & ASSOCIATES LTD. PRIOR TO ORDERING EQUIPMENT.

CHECK BEFORE YOU DIG
CONTRACTOR SHALL REFER TO MUNICIPAL RECORD / CIVIL DESIGN DRAWINGS FOR ALL OTHER UTILITIES, SERVICE LOCATIONS, AND DETAILS. THE EXACT LOCATION OF THESE UTILITIES SHALL BE DETERMINED ON SITE BY THE CONTRACTOR. CONTRACTOR TO REPORT ANY CONFLICTS OR DISCREPANCIES TO DMD & ASSOCIATES LTD.

DMD
DMD & Associates Ltd.
#12-17358 104A Avenue
Surrey, BC, Canada V4N 5M3
www.dmdeng.com office@dmdeng.com 604/589-9010 Fax 604/589-9012

DESIGNED	M. DE GOUVEIA
DRAWN	J. KRUGER
CHECKED	M. STERLING
DATE	JUNE 9/2017
SCALE	NTS

SEAL
2018-05-25
PROFESSIONAL ENGINEER
M. G. D. STERLING
40859
C. BRITISH COLUMBIA
ELECTRICAL ENGINEER

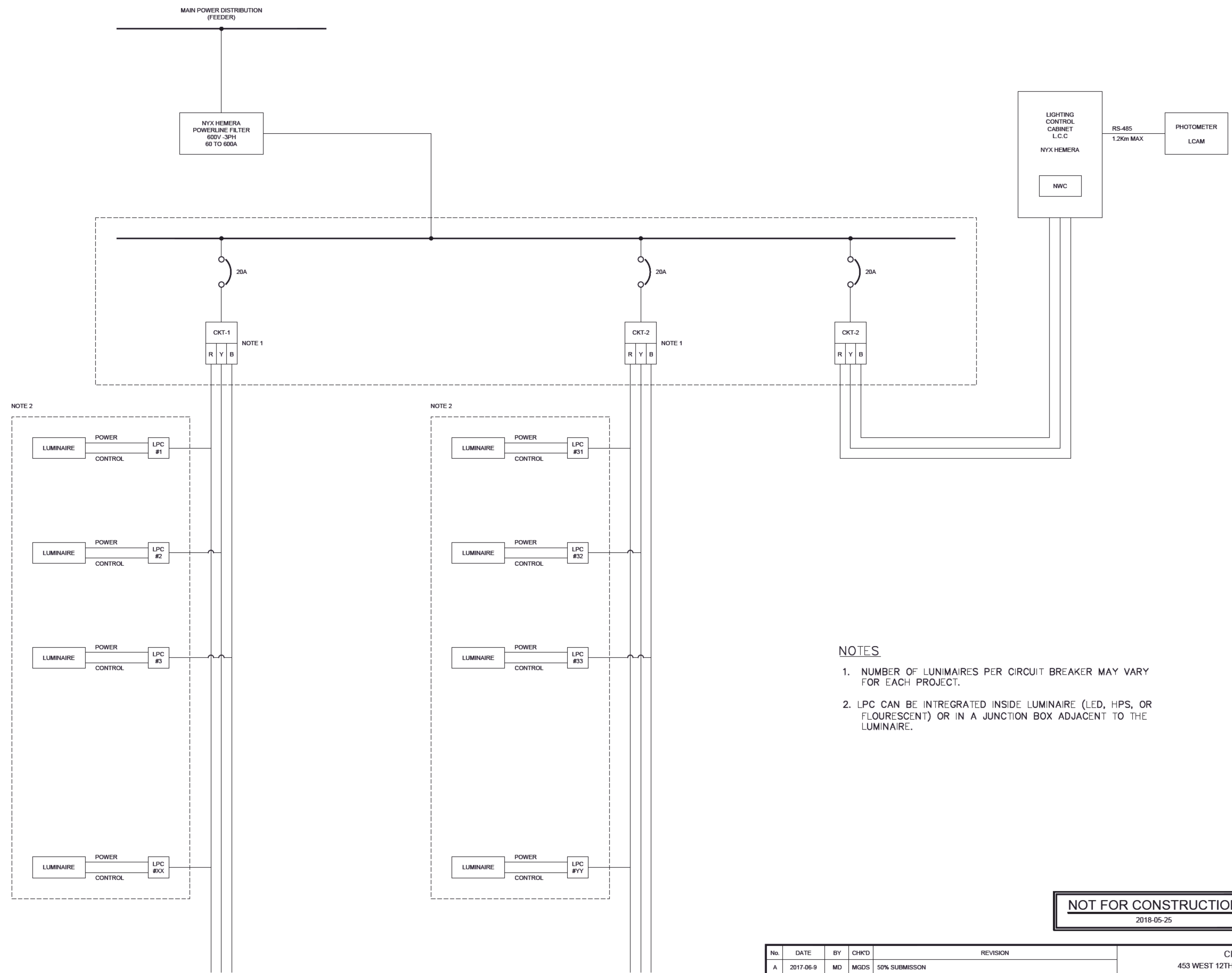
No.	DATE	BY	CHKD	REVISION
A	2017-06-08	MD	MGDS	50% SUBMISSION
B	2017-07-07	MD	MGDS	90% SUBMISSION
C	2017-11-22	MD	MGDS	ISSUED FOR TENDER REVIEW
D	2018-04-10	MD	MGDS	98% SUBMISSION
E	2018-05-25	MD	MGDS	ISSUED FOR TENDER

CITY OF VANCOUVER
453 WEST 12TH AVENUE, VANCOUVER, B.C. V5Y1V4

**EXPO BOULEVARD TUNNEL LIGHTING (PHASE 1)
CONCEPT FIXTURE MOUNTING SYSTEM DETAILS**
VANCOUVER, B.C.

NOT FOR CONSTRUCTION
2018-05-25

PROJECT No.	5608-17-06 of 07	SHEET No.	6 of 7	REVISION	E
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NOTE 2

NOTE 2

NOTES

1. NUMBER OF LUMINAIRES PER CIRCUIT BREAKER MAY VARY FOR EACH PROJECT.
2. LPC CAN BE INTREGATED INSIDE LUMINAIRE (LED, HPS, OR FLOURESCENT) OR IN A JUNCTION BOX ADJACENT TO THE LUMINAIRE.


NOT FOR CONSTRUCTION
2018-05-25



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DESIGNED	M. DEGOUVEIA
DRAWN	J. KRUGER
CHECKED	M. STERLING
DATE	JUNE 9/2017
SCALE:	AS NOTED

SEAL



No.	DATE	BY	CHK'D	REVISION
A	2017-06-9	MD	MGDS	50% SUBMISSION
B	2017-07-07	MD	MGDS	90% SUBMISSION
C	2017-11-22	MD	MGDS	ISSUED FOR TENDER REVIEW
D	2018-04-10	MD	MGDS	98% SUBMISSION
E	2018-05-25	MD	MGDS	ISSUED FOR TENDER

CITY OF VANCOUVER
453 WEST 12TH AVENUE, VANCOUVER, B.C. V5Y1V4

**EXPO BOULEVARD TUNNEL LIGHTING (PHASE 1)
TYPICAL LIGHTING CONTROL SCHEMATIC
VANCOUVER, B.C.**

PROJECT No. 5608-17-07 of 07	SHEET No. 7 of 7	REVISION E
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DRAWING REFERENCE