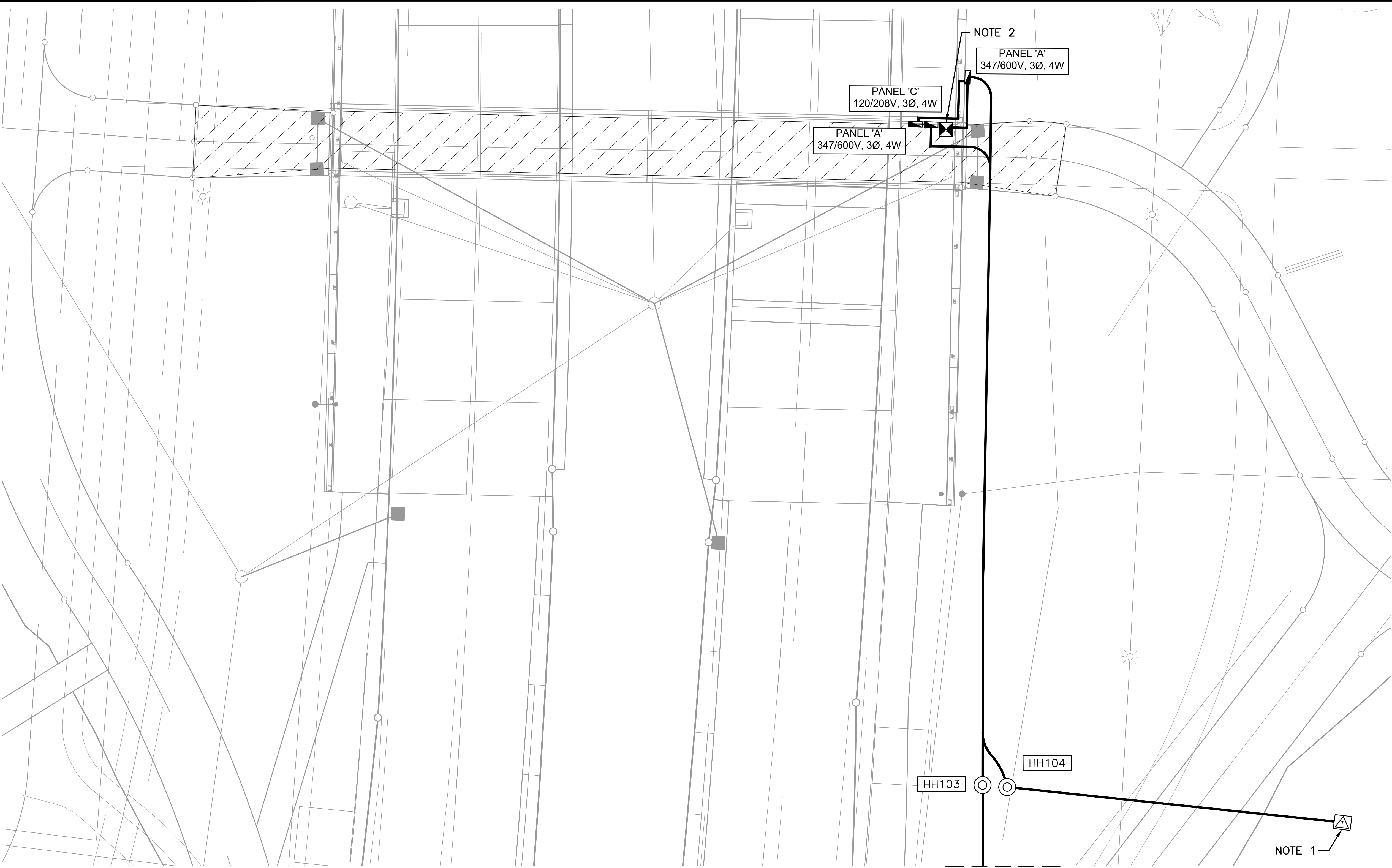


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Last Saved: 11/24/2022 6:59 PM by ahhppner  
Plotted: 3/1/2023 9:23 AM by Alex Heppner  
ISO A1 - 594mm x 841mm





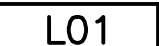
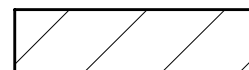



- NOTES:**
1. TRANSFORMER SUPPLIED BY MANITOBA HYDRO, 27.6kV - 600V.
  2. 15KVA TRANSFORMER MOUNTED UP HIGH.

SCALE: 1:100  
0 2.5 5.0m

SEE BRIDGE REHABILITATION  
NAVIGATIONAL LIGHTING LAYOUT  
DRAWING


**LEGEND**

-  DISTRIBUTION PANEL
-  HYDRO TRANSFORMER, PAD-MOUNTED
-  TRANSFORMER
-  300mm HANDWELL AS PER OPSD 2112.01
-  L01 LABEL
-  UNDER PAVEMENT SNOW MELTING CABLES
-  DIRECT BURIED DUCT


**METRIC**  
WHOLE NUMBERS INDICATE MILLIMETRES  
DECIMALIZED NUMBERS INDICATE METRES

LOCATION APPROVED	
UNDERGROUND STRUCTURES	
SUPR. U/G STRUCTURES COMMITTEE	DATE
<b>NOTE:</b> LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.	

BM 54-006 ELEV 228.166 m	Tilt: in S. face of E. Conc. pier in 1st row of Conc. piers N. of S. end of St. Vital Bridge over Red River, N. of Kingston Row, 5 m W. of E. end of Pier.		
0	ISSUED FOR CONSTRUCTION	23/02/28	BAP
No.	REVISIONS	YYMMDD	BY

	
DESIGNED BY	DP
CHECKED BY	AD
DRAWN BY	HB
APPROVED BY	GC
HOR SCALE	1:250
VERT SCALE	
DATE	FEBRUARY 28, 2023
RELEASED FOR CONSTRUCTION	DAMIR MUHURDAREVIC, P. ENG.
DATE	FEBRUARY 27, 2023

PROFESSIONAL'S SEAL
CONSULTANT FILE NAME
2103510-SVB DD-BR-EL-02.dwg

**THE CITY OF WINNIPEG**  
PUBLIC WORKS DEPARTMENT  
ENGINEERING DIVISION

**ST. VITAL TWIN BRIDGE OVER THE RED RIVER  
REHABILITATION AND RELATED WORKS  
CHURCHILL DR PEDESTRIAN UNDERPASS  
(UNDER OSBORNE ST)  
UNDERPASS TUNNEL SNOW MELTING & HEAT TRACING  
(NORTH)**

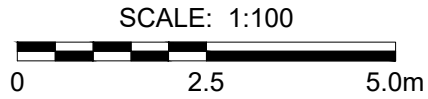
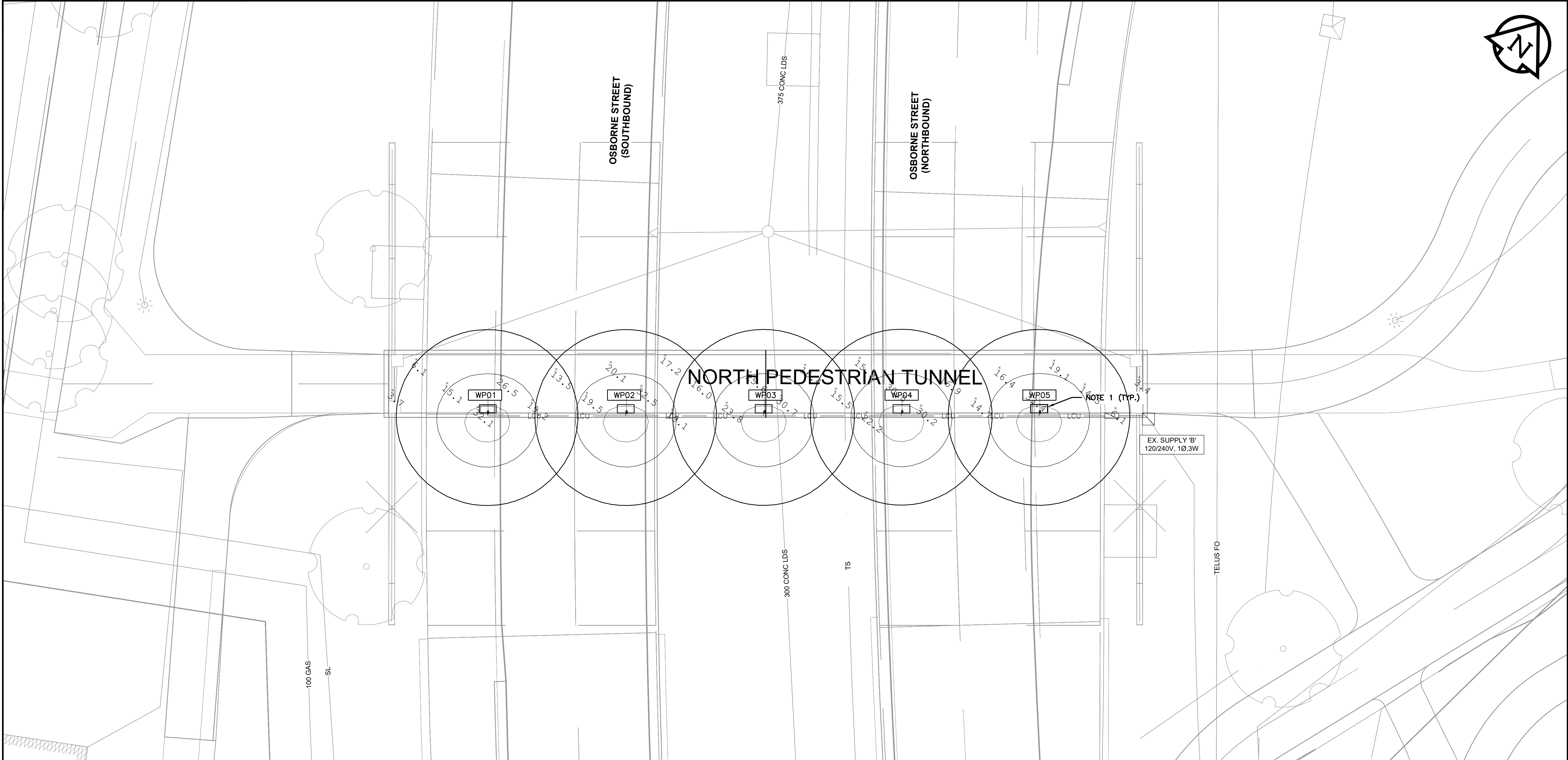
CITY FILE NUMBER	U216-24-9
SHEET	232 OF 244
DRAWING NUMBER	232

**ENGINEERS  
GEOSCIENTISTS  
MANITOBA**  
Certificate of Authorization  
MORRISON HERSHFELD  
No. 1736

TENDER No. 615-2022



X:\Proj\2021\21035\1000-St Vital Bridge over Red River PD109. CAD\07 Sheets\Electrical\2103510-SVB-DD-BR-EL-03.dwg    Last Saved: 11/24/2022 7:01 PM    by ahhppner    Plotted: 3/1/2023 9:24 AM    by Alex Heppner    ISO A1 - 594mm x 841mm



- NOTES:
- RETROFIT EXISTING BULB WITH NEW LED BULB FROM PHILIPS AS PER LUMINAIRE SCHEDULE.

- LEGEND
- EXISTING DISTRIBUTION PANEL
  - EXISTING MAIN DISTRIBUTION PANEL
  - EXISTING WALL PACK
  - LABEL
  - EXISTING CABLE

Luminaire Schedule						
Symbol	Qty	Label	Arrangement	Description	LLF	Luminaire Watts
	5	led_tforce_core_nam_14w_ed75_	Single	PHILIPS - 14GC/LED/850/ND E26 BB 6/1 OR APPROVED EQUIVALENT	0.820	14

Calculation Summary								
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	LV Ratio
South Tunnel_Workplane	Illuminance	Lux	19.20	33.4	3.4	5.65	9.82	N.A.

LOCATION APPROVED  
UNDERGROUND STRUCTURES

SUPR, U/G STRUCTURES      DATE

NOTE:  
LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

BM	54-006	Tilt: in S. face of E. Conc. pier in 1st row of Conc. piers		
ELEV	228.166 m	N. of S. end of St. Vital Bridge over Red River, N. of Kingston Row, 5 m W. of E. end of Pier.		
0	ISSUED FOR CONSTRUCTION	23/02/28	BAP	
No.	REVISIONS	YY/MM/DD	BY	

DESIGNED BY	DP
CHECKED BY	AD
DRAWN BY	HB
APPROVED BY	GC
HOR SCALE	1:100
VERT SCALE	
DATE	FEBRUARY 28, 2023
RELEASED FOR CONSTRUCTION	
DAMIR MUHURDAREVIC, P. ENG.	
DATE	FEBRUARY 28, 2023

PROFESSIONAL'S SEAL
CONSULTANT FILE NAME
2103510-SVB-DD-BR-EL-03.dwg

**THE CITY OF WINNIPEG**  
PUBLIC WORKS DEPARTMENT  
ENGINEERING DIVISION

**ST. VITAL TWIN BRIDGE OVER THE RED RIVER  
REHABILITATION AND RELATED WORKS**  
**GOLF COURSE PEDESTRIAN UNDERPASS  
(UNDER DUNKIRK DR)**  
**UNDERPASS TUNNEL ELECTRICAL LAYOUT (SOUTH)**

CITY FILE NUMBER  
U217-24-8

SHEET 233 OF 244

DRAWING NUMBER  
**233**

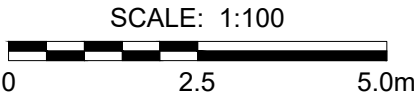
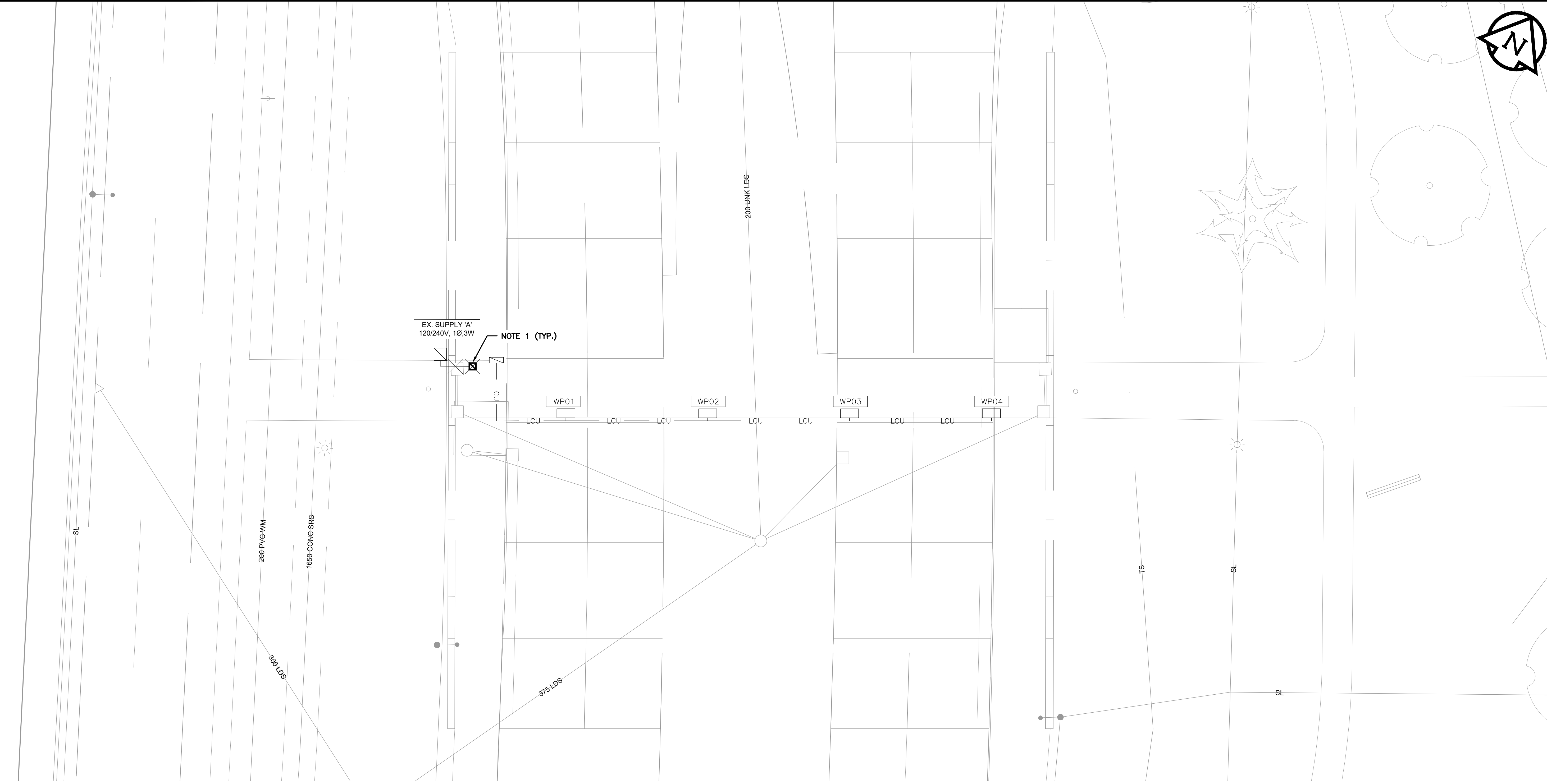
**METRIC**  
WHOLE NUMBERS INDICATE MILLIMETRES  
DECIMALIZED NUMBERS INDICATE METRES

**ENGINEERS  
GEOSCIENTISTS  
MANITOBA**

Certificate of Authorization  
MORRISON HERSHFELD  
No. 1736

TENDER No. 615-2022

X:\Proj\2021\210351000-St Vital Bridge over Red River PD109\_CAD107 Sheets\Electrical\2103510-SVB DD-BR-EL-04.dwg    Last Saved: 11/24/2022 7:03 PM    by ahhppner    Plotted: 3/1/2023 9:24 AM    by Alex Heppner    ISO A1 - 594mm x 841mm



**NOTES:**

1. CONTRACTOR TO REMOVE EXISTING HEAT TRACING EQUIPMENT.

**LEGEND**

- EXISTING DISTRIBUTION PANEL
- EXISTING MAIN DISTRIBUTION PANEL
- EXISTING WALL PACK
- REMOVAL HEAT TRACE EQUIPMENT
- LABEL
- EXISTING CABLE
- REMOVAL CABLE

**ENGINEERS  
GEOSCIENTISTS  
MANITOBA**  
Certificate of Authorization  
MORRISON HERSHFIELD  
No. 1736  
TENDER No. 615-2022

LOCATION APPROVED UNDERGROUND STRUCTURES				<div><div><div>BM</div><div>54-006</div><div>ELEV</div><div>228.166 m</div></div><div><div>Tbtl. in S. face of E. Conc. pier in 1st row of Conc. piers N. of S. end of St. Vital Bridge over Red River, N. of Kingston Row, 5 m W. of E. end of Pier.</div></div></div> 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**METRIC**  
WHOLE NUMBERS INDICATE MILLIMETRES  
DECIMALIZED NUMBERS INDICATE METRES

**THE CITY OF WINNIPEG  
PUBLIC WORKS DEPARTMENT  
ENGINEERING DIVISION**

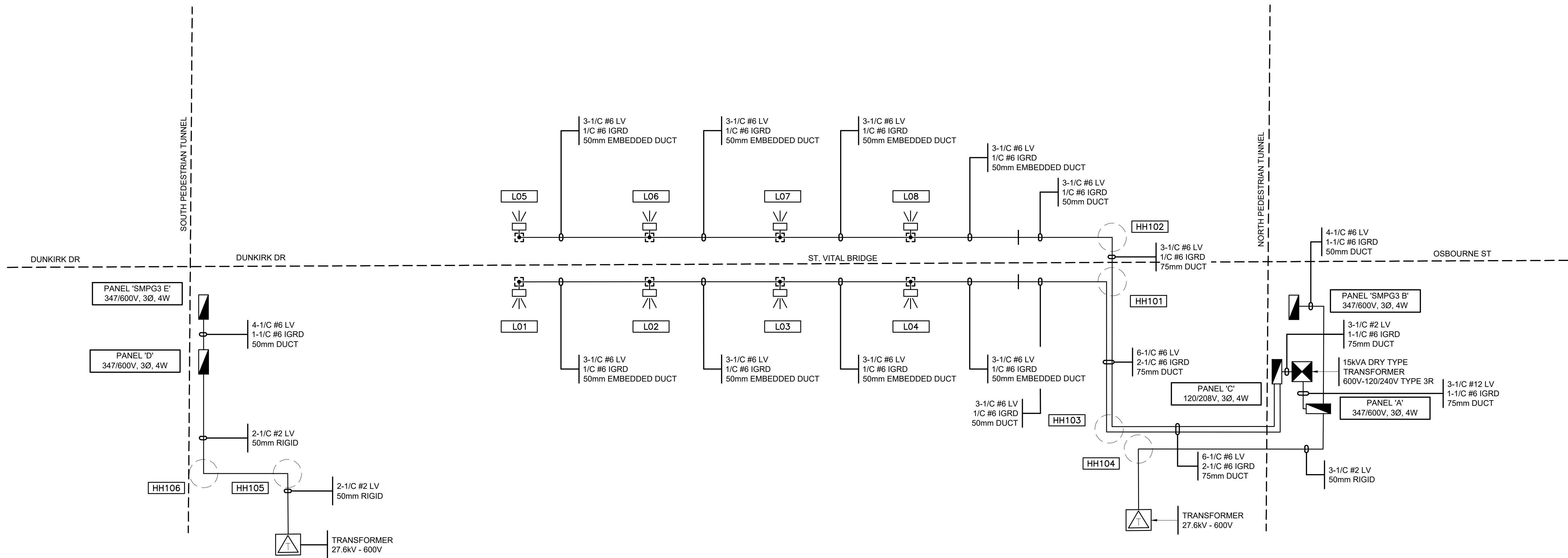
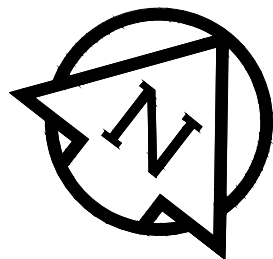
**ST. VITAL TWIN BRIDGE OVER THE RED RIVER  
REHABILITATION AND RELATED WORKS**

**CHURCHILL DR PEDESTRIAN UNDERPASS  
(UNDER OSBORNE ST)  
UNDERPASS TUNNEL REMOVAL (NORTH)**

CITY FILE NUMBER	U216-24-10
SHEET	234 OF 244
DRAWING NUMBER	234



X:\Proj\2021\210351000-St Vital Bridge over Red River PD109\_CAD\07 Sheets\Electrical\2103510-SVB-DD-BR-EL-06.dwg      Last Saved: 11/24/2022 7:04 PM      by ahhppner      Plotted: 3/1/2023 9:24 AM      by Alex Heppner      ISO A1 - 594mm x 841mm



WIRING DIAGRAMS

**METRIC**  
WHOLE NUMBERS INDICATE MILLIMETRES  
DECIMALIZED NUMBERS INDICATE METRES

LOCATION APPROVED  
UNDERGROUND STRUCTURES

SUPR. U/G STRUCTURES      DATE  
COMMITTEE

**NOTE:**  
LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

BM	54.006	Tilt. in S. face of E. Conc. pier in 1st row of Conc. piers		
ELEV	228.166 m	N. of S. end of St. Vital Bridge over Red River, N. of Kingston Row, 5 m W. of E. end of Pier.		
0	ISSUED FOR CONSTRUCTION	23/02/28	BAP	
No.	REVISIONS	YY/MM/DD	BY	

DESIGNED BY	DP
CHECKED BY	AD
DRAWN BY	DP
APPROVED BY	GC
HOR SCALE	NTS
VERT SCALE	
DATE	FEBRUARY 28, 2023
RELEASED FOR CONSTRUCTION	DAMIR MUHURDAREVIC, P. ENG.
DATE	FEBRUARY 28, 2023

PROFESSIONAL'S SEAL
CONSULTANT FILE NAME
2103510-SVB-DD-BR-EL-06.dwg

**THE CITY OF WINNIPEG**  
PUBLIC WORKS DEPARTMENT  
ENGINEERING DIVISION

**ST. VITAL TWIN BRIDGE OVER THE RED RIVER  
REHABILITATION AND RELATED WORKS**

**WIRING DIAGRAM  
NORTH & SOUTH TUNNEL**

CITY FILE NUMBER  
U217-24-10

SHEET 236 OF 244

DRAWING NUMBER  
**236**

**ENGINEERS  
GEOSCIENTISTS  
MANITOBA**  
Certificate of Authorization  
MORRISON HERSHFIELD  
No. 1736

TENDER No. 615-2022

X:\Proj\2021\210351000-St Vital Bridge over Red River PD109\_CAD\07 Sheets\Electrical\2103510-SVB-DD-BR-EL-07.dwg  
Last Saved: 11/2/2023 8:13 AM by DPaiei  
Plotted: 31/12/2023 9:25 AM by Alex Hegner  
ISO A1 - 594mm x 841mm

LOAD SUMMARY TABLE FOR PANEL 'A' 600/347V, 3PH, 4W, 150A MAIN BREAKER							
LOAD (WATTS)	LOAD DESCRIPTION	CIRCUIT No.	BREAKER RATING	BREAKER RATING	CIRCUIT No.	LOAD DESCRIPTION	LOAD (WATTS)
66,978	SUPPLY C - SMPG 3	A RED 1	100A3P	15A3P	A RED 2	15KVA TRANSFORMER	15,000
		A BLK 3			A BLK 4		
		A BLU 5			A BLU 6		
-	SPACE	A RED 7	-	-	A RED 8	SPACE	-
-	SPACE	A BLK 9	-	-	A BLK 10	SPACE	-
-	SPACE	A BLU 11	-	-	A BLU 12	SPACE	-
TOTAL LOAD = 71,978W							

LOAD SUMMARY TABLE FOR PANEL 'C' 120/208V, 3PH, 4W, 100A MAIN BREAKER							
LOAD (WATTS)	LOAD DESCRIPTION	CIRCUIT No.	BREAKER RATING	BREAKER RATING	CIRCUIT No.	LOAD DESCRIPTION	LOAD (WATTS)
1,200	NAVIGATION LIGHTS EAST	C RED 1	15A3P	15A3P	C RED 2	NAVIGATION LIGHTS WEST	1,200
		C BLK 3			C BLK 4		
		C BLU 5			C BLU 6		
-	SPACE	C RED 7	-	-	C RED 8	SPACE	-
-	SPACE	C BLK 9	-	-	C BLK 10	SPACE	-
-	SPACE	C BLU 11	-	-	C BLU 12	SPACE	-
TOTAL LOAD = 2,400W							

LOAD SUMMARY TABLE FOR PANEL 'SMPG3 B' 600/347V, 3PH, 4W, 100A									
SUB-TOTAL LOAD (WATTS)	LOAD (WATTS)	LOAD DESCRIPTION	CIRCUIT No.	BREAKER RATING	BREAKER RATING	CIRCUIT No.	LOAD DESCRIPTION	LOAD (WATTS)	SUB-TOTAL LOAD (WATTS)
33,489	11,163	SNOW MELTING	B RED 1	40A	40A	B RED 2	SNOW MELTING	11,163	33,489
	11,163	SNOW MELTING	B BLK 3	40A	40A	B BLK 4	SNOW MELTING	11,163	
	11,163	SNOW MELTING	B BLU 5	40A	40A	B BLU 6	SNOW MELTING	11,163	
-	-	SPACE	B RED 7	-	-	B RED 8	SPACE	-	-
-	-	SPACE	B BLK 9	-	-	B BLK 10	SPACE	-	-
-	-	SPACE	B BLU 11	-	-	B BLU 12	SPACE	-	-
TOTAL LOAD = 66978W									

LOAD SUMMARY TABLE FOR PANEL 'SMPG3 E' 600/347V, 3PH, 4W, 100A									
SUB-TOTAL LOAD (WATTS)	LOAD (WATTS)	LOAD DESCRIPTION	CIRCUIT No.	BREAKER RATING	BREAKER RATING	CIRCUIT No.	LOAD DESCRIPTION	LOAD (WATTS)	SUB-TOTAL LOAD (WATTS)
32,940	10,980	SNOW MELTING	E RED 1	40A	40A	E RED 2	SNOW MELTING	10,980	32,940
	10,980	SNOW MELTING	E BLK 3	40A	40A	E BLK 4	SNOW MELTING	10,980	
	10,980	SNOW MELTING	E BLU 5	40A	40A	E BLU 6	SNOW MELTING	10,980	
17,893	5,964	SNOW MELTING	E RED 7	30A	-	E RED 8	SPACE	-	-
	5,964	SNOW MELTING	E BLK 9	30A	-	E BLK 10	SPACE	-	-
	5,964	SNOW MELTING	E BLU 11	30A	-	E BLU 12	SPACE	-	-
TOTAL LOAD = 83,773W									

LOAD SUMMARY TABLE FOR PANEL 'D' 600/347V, 3PH, 4W, 150A MAIN BREAKER							
LOAD (WATTS)	LOAD DESCRIPTION	CIRCUIT No.	BREAKER RATING	BREAKER RATING	CIRCUIT No.	LOAD DESCRIPTION	LOAD (WATTS)
83,773	SUPPLY E - SMPG 3	D RED 1	125A	D RED 2		SPACE	-
		D BLK 3		D BLK 5		SPACE	-
		D BLU 5		D BLU 6		SPACE	-
-	SPACE	D RED 7	-	D RED 8		SPACE	-
-	SPACE	D BLK 9	-	D BLK 10		SPACE	-
-	SPACE	D BLU 11	-	D BLU 13		SPACE	-
TOTAL LOAD = 83,773W							

**ENGINEERS  
GEOSCIENTISTS  
MANITOBA**  
Certificate of Authorization  
MORRISON HERSHFIELD  
No. 1736

TENDER No. 615-2022

LOCATION APPROVED  
UNDERGROUND STRUCTURES

SUPR, U/G STRUCTURES      DATE  
COMMITTEE

**NOTE:**  
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BM 54-006  
ELEV 228.166 m

Tilt: in S. face of E. Conc. pier in 1st row of Conc. piers  
N. of S. end of St. Vital Bridge over Red River,  
N. of Kingston Row, 5 m W. of E. end of Pier.



DESIGNED BY DP

CHECKED BY AD

DRAWN BY DP

APPROVED BY GC

HOR SCALE  
VERT SCALE

RELEASED FOR CONSTRUCTION  
DAMIR MUHURDAREVIC, P. ENG.

DATE FEBRUARY 28, 2023

DATE FEBRUARY 28, 2023

PROFESSIONAL'S SEAL

CONSULTANT FILE NAME  
2103510-SVB DD-BR-EL-07.dwg



**THE CITY OF WINNIPEG  
PUBLIC WORKS DEPARTMENT  
ENGINEERING DIVISION**

**ST. VITAL TWIN BRIDGE OVER THE RED RIVER  
REHABILITATION AND RELATED WORKS**

**ELECTRICAL  
PANEL SCHEDULE**

CITY FILE NUMBER  
B116-24-126

SHEET 239 OF 244

DRAWING NUMBER

239