HIGHWAY 427 EXPANSION

DCR # 4

E.4 Electrical

Ontario

January 31, 2019

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SUPPLEMENTARY LEGEND

ducts and/or cables, underground

ducts and/or cables, surface mounted

Exp

ducts and/or cables embedded, Exp indicates expansion joint

cables, installed in existing ducts

cables, aerial

23

3

underpavement crossing identification code

reference point with identification code

HCA BCA HCA BCA

existing cables and/or ducts to remain in place

LCU LCU

existing cables and/or ducts to be removed

LCA LCA

existing cables and/or ducts to be abandoned

identification codes

identification codes for existing duct or cable usage

BC	Bell cable
CC	communications cable
DC	extra–low voltage detector cable
FO	fiber optic cable
GC	guy cable
HC	hydro cable
LC	lighting cable
PC	power cable
TS	traffic signal cable
TV	television cable

ground electrodes

cable protection bricks, concrete cap, or marker tape in trench

R12 — identification code for removal equipment

MH32 — electrical maintenance hole with identification code

JB36 — junction box, embedded or surface mounted with identification code

HH21 — electrical handhole, underground with identification code

P24 — pole with identification code

EP32 — existing pole to remain with identification code

LS

R33 — existing pole to be removed with identification code

LS

SUPPLY 'A'
120/240V, 1ø 3W
METERED

power supply equipment identification code, other applicable description may be used for supply cabinet, distribution assembly, etc.

TC2 — identification code for traffic signal controller cabinet

traffic count station, type 2 MTOD 2901.022

TCS2 — identification code for traffic signal count station

highway signal head, 300mm red, 200mm amber and green lenses, with backboard

highway signal head, all 300mm lenses, with backboard

special signal head with backboard, number indicates type of signal head

2

pedestrian signal head, two section or bimodal type

pedestrian signal head, two section type c/w pedestrian countdown

span wire mounting, highway signal head with backboard

mast arm mounting, highway signal head with backboard shown

controller cabinet, front door opens on side indicated

controller cabinet, pad and/or footing mounted

UPS — uninterruptible power supply cabinet

UPS — controller cabinet with uninterruptible power supply cabinet

LD2 — simple loop detector with identification code

LD3 — duplex loop detector with identification code

NID1 — non–intrusive detection zone with identification code

LD5 — diamond loop detector with identification code

EV1 — emergency vehicle pre–emption with identification code

MD1 — non–intrusive sensor with identification code

PB1 — accessible pedestrian push button and direction arrow with identification code

VD1 — video camera or video camera detector with identification code

single phase 2 wire system:

BLK	black, line
WHT	white, neutral
GRN	green, ground

single phase 3 wire system:

RED	red, line 1
BLK	black, line 2
WHT	white, neutral
GRN	green, ground

three phase 4 wire system:

RED	red, line 1, phase a
BLK	black, line 2, phase b
BLU	blue, line 3, phase c
WHT	white, neutral
GRN	green, ground

A RED 7 — circuit identification code:
A denotes supply location A
RED denotes red, line 1
7 denotes breaker or switching device no. 7

single guy with single anchor

double guy with single anchor

double guy with sidewalk strut and single anchor

power supply equipment, pole mounted

transformer

power supply equipment, pad and/or footing mounted

PE — photoelectric controller

underpass or surface mounted luminaire

2 — luminaire, number shown indicates luminaire location on high mast ring with respect to pole handhole

luminaire with bracket

existing luminaire to be removed, bracket to remain

existing luminaire and bracket to be removed

high mast pole with L.E.D. Luminaires, number as indicated in layout drawings

cables to be installed in the same duct

spare duct for future use

conductors, single or multiple, identified by note

2–19/C #14 TS–75mm — wiring identification note

duct size, aerial or direct buried
type of cable:
TS traffic signal
HV high voltage
LV low voltage
ELV extra–low voltage
IGRD insulated ground (green)
AWG size of conductor
number of conductors in cable, not required for single conductor
number of cables

OR — wiring enclosure and electrical chambers identification code matches layout drawings

OR — equipment item, (e.g., poles and cabinets) identification code matches layout drawings

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

N.T.S.

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

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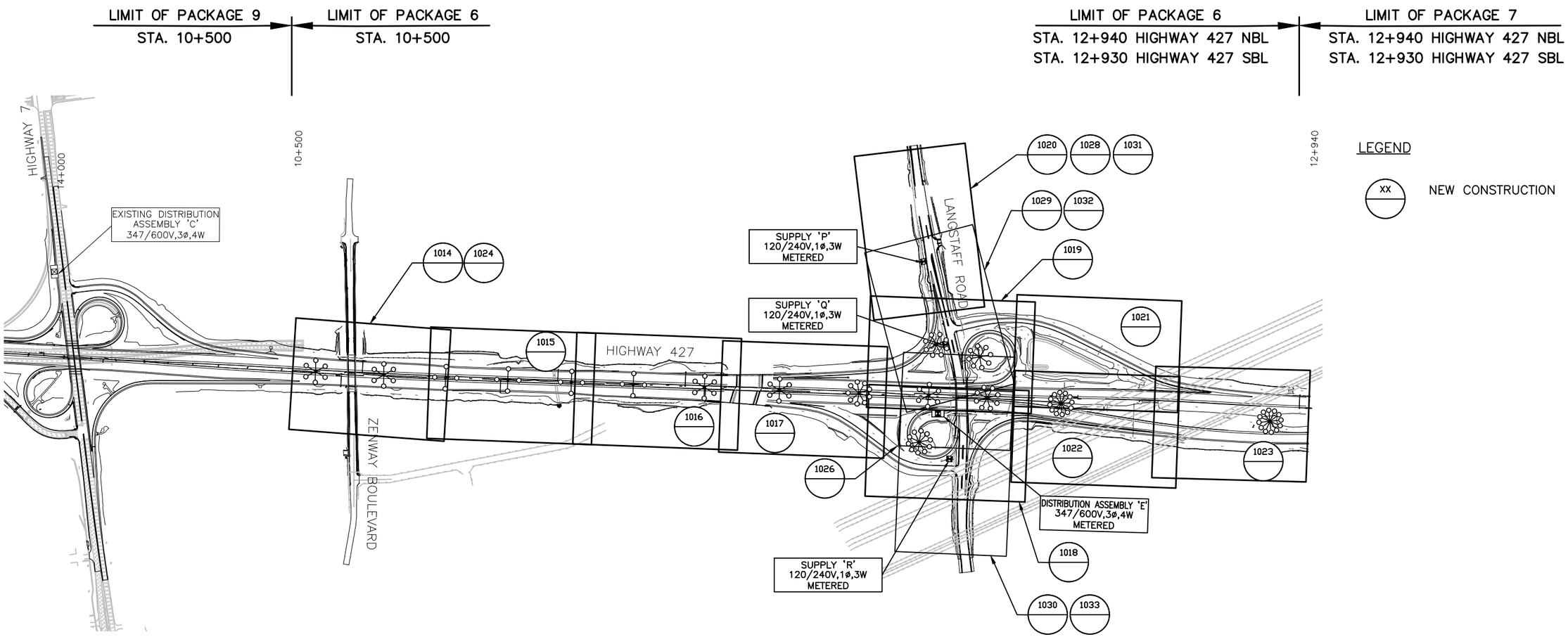
TITLE

HWY 427 EXPANSION

ELECTRICAL SUPPLEMENTARY LEGEND

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	6	ELE	000	DWG	1000	A



NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
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APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

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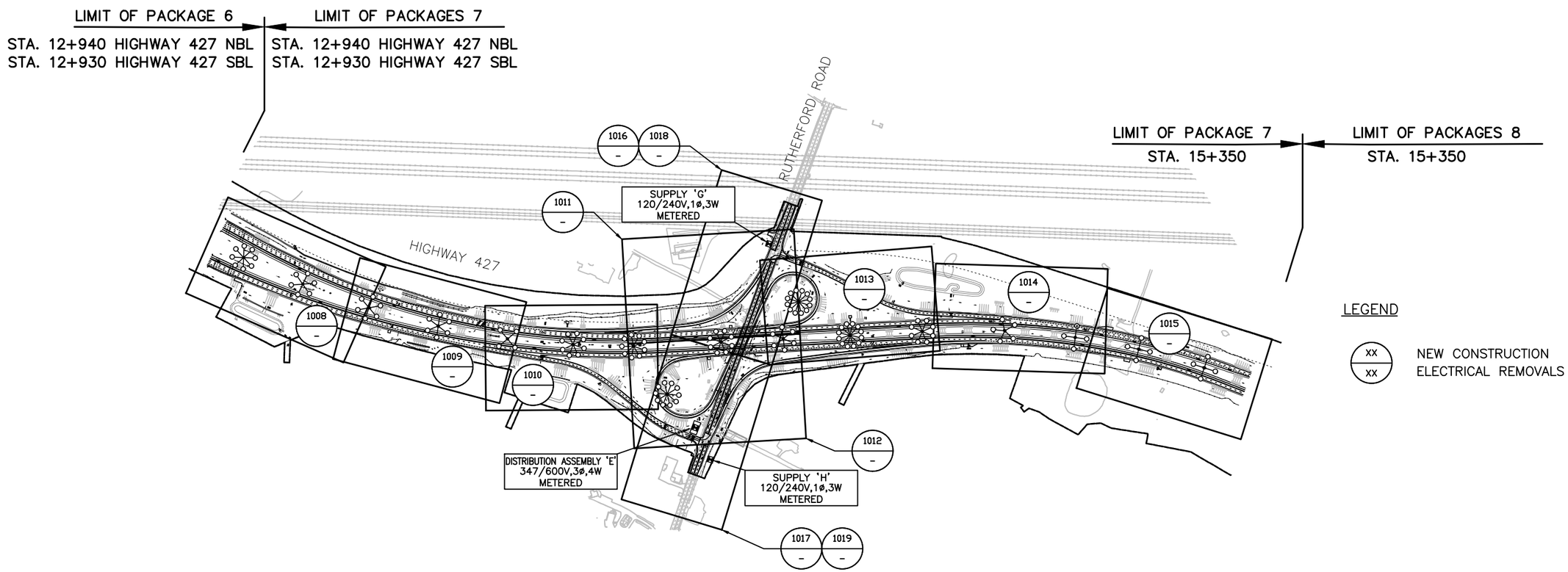
HWY 427 EXPANSION

ELECTRICAL KEY PLAN - 1
PERMANENT

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	6	ELE	000	DWG	1001	A



NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	18/04/25	50% SUBMISSION TO CA				

SCALE :

N.T.S.

CONSULTANT

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DESIGNED	NATALIA MAHABIR		
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APPROVED LEAD ENGINEER	MARIO TEDESCO		
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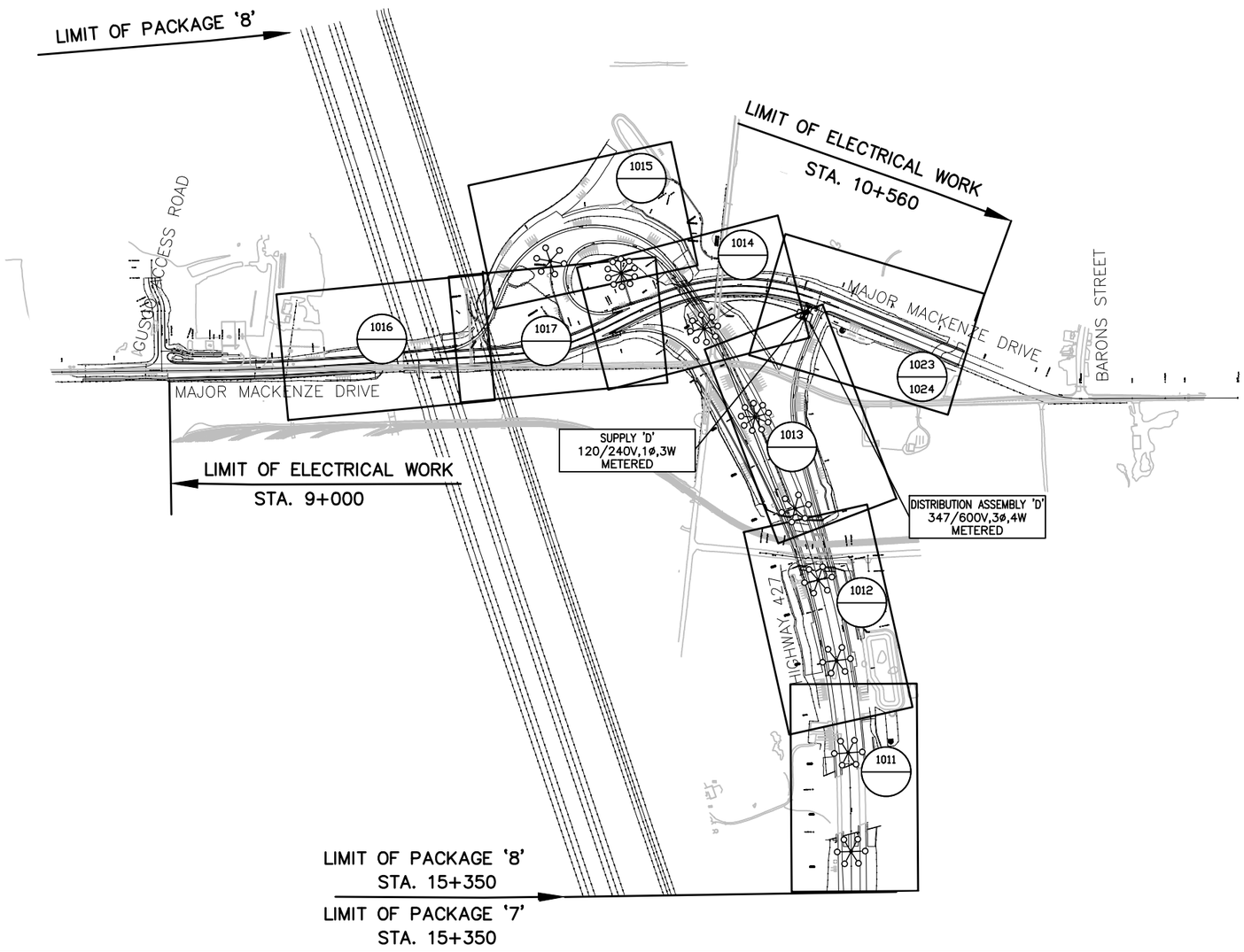
HWY 427 EXPANSION

ELECTRICAL KEY PLAN - 1
PERMANENT

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	F	7	ELE	000	DWG	1001	A



LEGEND

(XX) NEW CONSTRUCTION

NO.	DATE	REVISIONS	BY	CHK.	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

N.T.S.

CONSULTANT	NAME (PRINT)	INIT.	DATE
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CHECKED	LENNOX LUE		
APPROVED LEAD. ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

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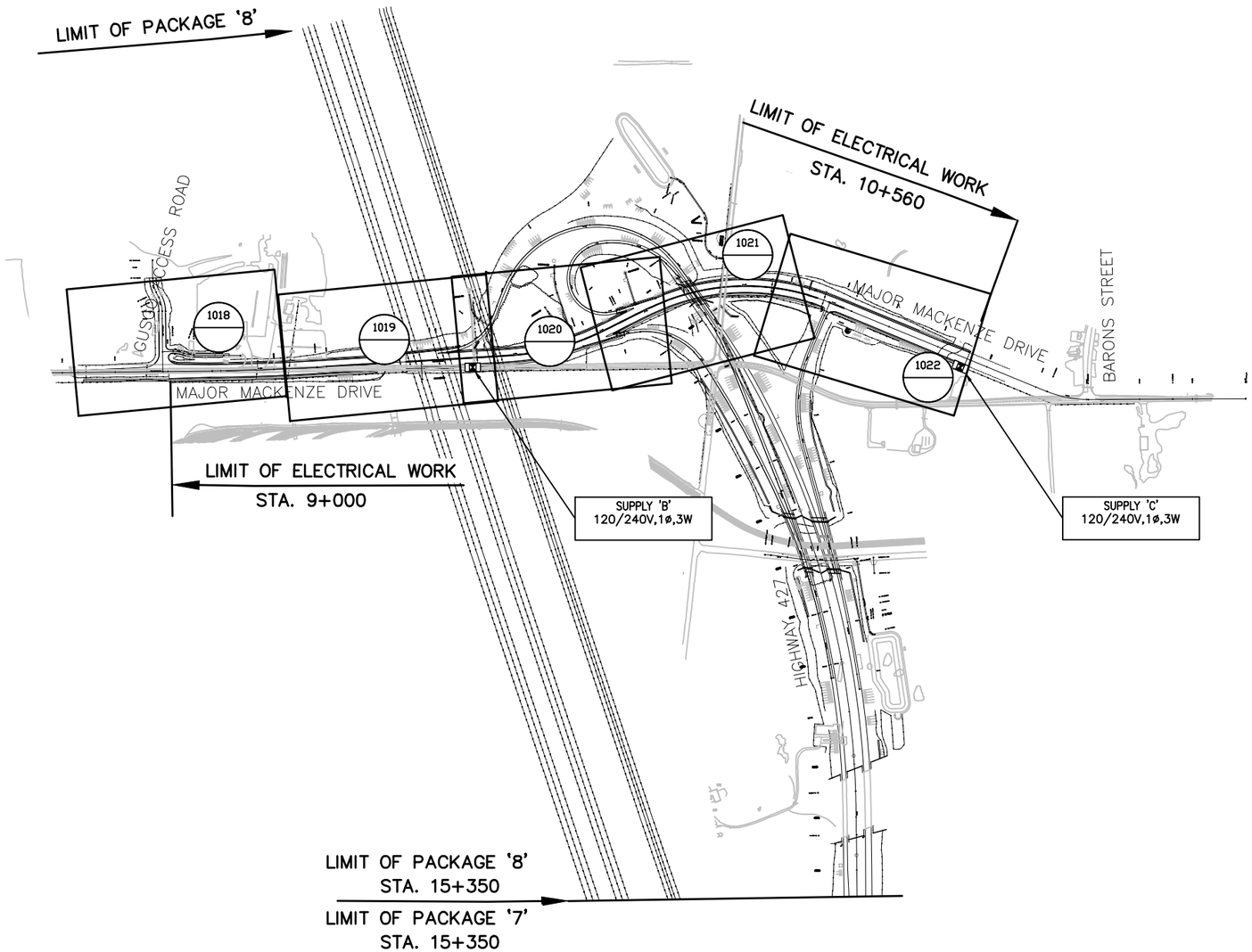
HWY 427 EXPANSION

ELECTRICAL KEY PLAN - 1
PERMANENT (MTO)

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	8	ELE	000	DWG	1001	A



LEGEND

XX — NEW CONSTRUCTION

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
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SCALE :

N.T.S.

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	NAME (PRINT)	INIT.	DATE

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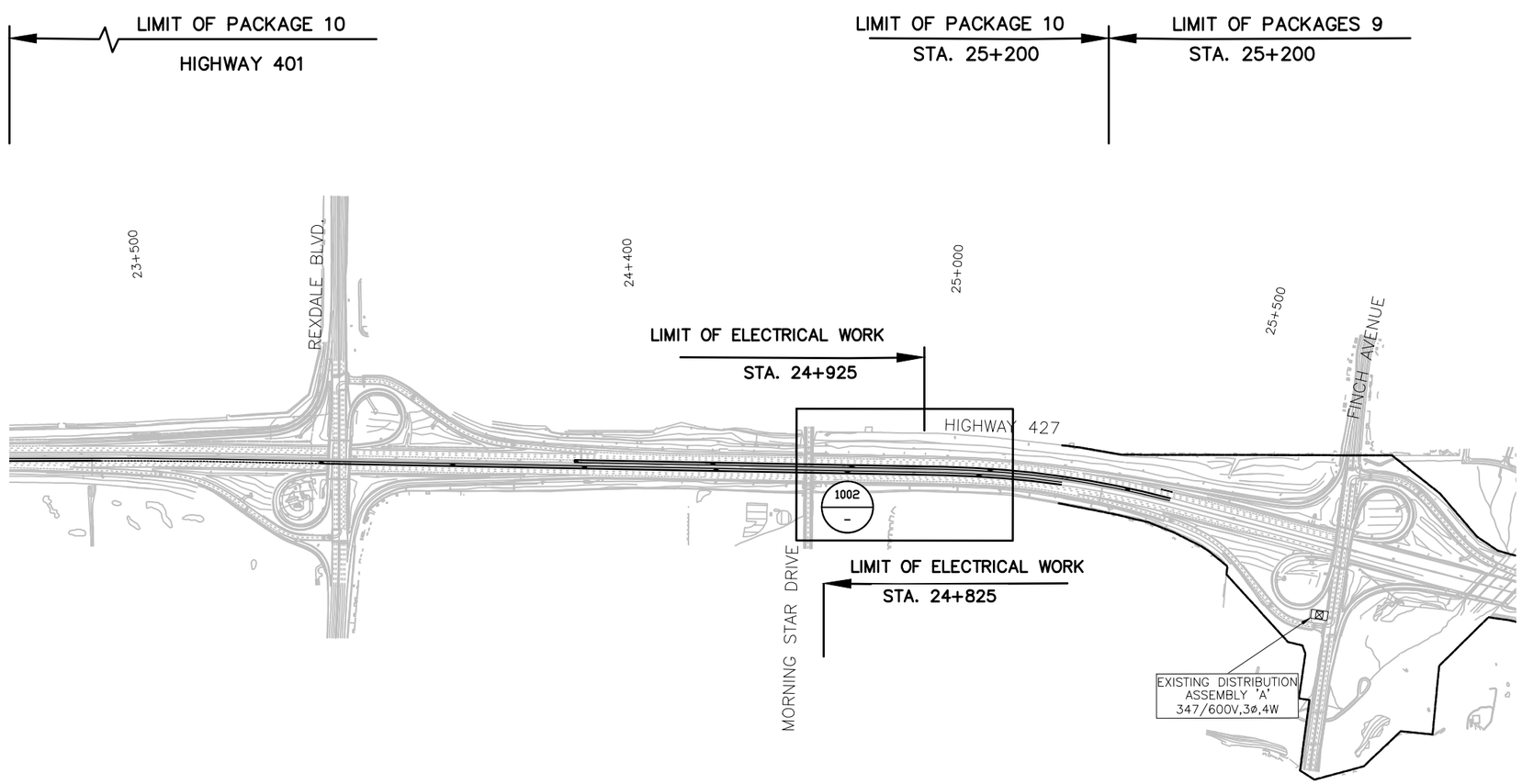
HWY 427 EXPANSION

ELECTRICAL KEY PLAN - 2
PERMANENT (MUN)

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	8	ELE	000	DWG	1002	A

ELECTRICAL LEGEND

xx / xx	NEW CONSTRUCTION ELECTRICAL REMOVALS
◎ HH21	ELECTRICAL HANDHOLE, UNDERGROUND WITH IDENTIFICATION CODE
□	TRAFFIC COUNT STATION, TYPE 2 MTOD 2901.022
TCS2	IDENTIFICATION CODE FOR TRAFFIC SIGNAL COUNT STATION
□ LD2	SIMPLE LOOP DETECTOR WITH IDENTIFICATION CODE



NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	18/06/18	50% SUBMISSION TO CA				

SCALE :

5m 0 10m
Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

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HWY 427 EXPANSION

LEGEND & KEY PLAN PERMANENT

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	F	10	ELE	000	DWG	1000	A

HIGH MAST LIGHTING POLE SUMMARY

POLE NO.	POLE HEIGHT (m)	LOCATION	STATION NO.	OFFSET (m) (NOTE 1)	LUMINAIRE NUMBER	LUMINAIRE TYPE AND DISTRIBUTION	HORIZONTAL ANGLE OF LUMINAIRE (DEGREES)
P32 (NOTE 2)	35	HIGHWAY 427 MEDIAN	10+554.7	0	1	HOLOPHANE HMLED3–PK3–4K–AW	0
					2	HOLOPHANE HMLED3–PK3–4K–AW	0
					3	HOLOPHANE HMLED3–PK3–4K–AW	0
					4	HOLOPHANE HMLED3–PK3–4K–AW	0
					5	HOLOPHANE HMLED3–PK3–4K–AW	0
					6	HOLOPHANE HMLED3–PK3–4K–AW	0
P33 (NOTE 2)	35	HIGHWAY 427 MEDIAN	10+718.4	0	1	HOLOPHANE HMLED3–PK3–4K–AW	0
					2	HOLOPHANE HMLED3–PK3–4K–AW	0
					3	HOLOPHANE HMLED3–PK3–4K–AW	0
					4	HOLOPHANE HMLED3–PK3–4K–AW	0
					5	HOLOPHANE HMLED3–PK3–4K–AW	0
					6	HOLOPHANE HMLED3–PK3–4K–AW	0
P34 (NOTE 2)	30	HIGHWAY 427 MEDIAN	10+866.8	0	1	HOLOPHANE HMLED3–PK3–4K–N	90
					2	HOLOPHANE HMLED3–PK3–4K–N	90
					3	HOLOPHANE HMLED3–PK3–4K–N	270
					4	HOLOPHANE HMLED3–PK3–4K–N	270
P35	30	HIGHWAY 427 MEDIAN	11+016.1	0	1	HOLOPHANE HMLED3–PK3–4K–N	92
					2	HOLOPHANE HMLED3–PK3–4K–N	92
					3	HOLOPHANE HMLED3–PK3–4K–N	272
					4	HOLOPHANE HMLED3–PK3–4K–N	272
P36	30	HIGHWAY 427 MEDIAN	11+168.5	0	1	HOLOPHANE HMLED3–PK3–4K–N	92
					2	HOLOPHANE HMLED3–PK3–4K–N	92
					3	HOLOPHANE HMLED3–PK3–4K–N	272
					4	HOLOPHANE HMLED3–PK3–4K–N	272
P37	30	HIGHWAY 427 MEDIAN	11+316.9	0	1	HOLOPHANE HMLED3–PK3–4K–N	92
					2	HOLOPHANE HMLED3–PK3–4K–N	92
					3	HOLOPHANE HMLED3–PK3–4K–N	272
					4	HOLOPHANE HMLED3–PK3–4K–N	272
P38	35	HIGHWAY 427 MEDIAN	11+487.7	0	1	HOLOPHANE HMLED3–PK3–4K–N	92
					2	HOLOPHANE HMLED3–PK3–4K–N	92
					3	HOLOPHANE HMLED3–PK3–4K–N	92
					4	HOLOPHANE HMLED3–PK3–4K–N	272
					5	HOLOPHANE HMLED3–PK3–4K–N	272
					6	HOLOPHANE HMLED3–PK3–4K–N	272
P39	35	HIGHWAY 427 MEDIAN	11+667.3	0	1	HOLOPHANE HMLED3–PK3–4K–N	91
					2	HOLOPHANE HMLED3–PK3–4K–N	91
					3	HOLOPHANE HMLED3–PK3–4K–N	91
					4	HOLOPHANE HMLED3–PK3–4K–N	271
					5	HOLOPHANE HMLED3–PK3–4K–N	271
					6	HOLOPHANE HMLED3–PK3–4K–N	271

NOTE(S):

1. WHEN SHOWN WITHOUT *, OFFSET IS FROM CENTRE OR CONTROL LINE OF ROADWAY. WHEN SHOWN WITH *, OFFSET IS FROM EDGE OF TRAVELED PAVEMENT (EP).
2. INSTALL SALVAGED 30m AND 35m POLES FROM DESIGN PACKAGE 9. REFER TO ELECTRICAL NON–STANDARD DETAILS FOR POLE AND ANCHORAGE DETAILS. CONTRACTOR TO CONFIRM THAT THE BOLT CIRCLE DIAMETER OF SALVAGED POLE MATCHES THAT OF THE STANDARD DRAWINGS PRIOR TO CONSTRUCTION.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE : N.T.S.

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APPROVED PROJ. MANAGER			

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HWY 427 EXPANSION

PERMANENT CHARTS - 1

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	6	ELE	000	DWG	1004	A

HIGH MAST LIGHTING POLE SUMMARY

POLE NO.	POLE HEIGHT (m)	LOCATION	STATION NO.	OFFSET (m) (NOTE 1)	LUMINAIRE NUMBER	LUMINAIRE TYPE AND DISTRIBUTION	HORIZONTAL ANGLE OF LUMINAIRE (DEGREES)
P40	40	HIGHWAY 427 MEDIAN	11+858.3	0	1	HOLOPHANE HMLED3-PK3-4K-AW	0
					2	HOLOPHANE HMLED3-PK3-4K-AW	0
					3	HOLOPHANE HMLED3-PK3-4K-AW	0
					4	HOLOPHANE HMLED3-PK3-4K-AW	0
					5	HOLOPHANE HMLED3-PK3-4K-AW	0
					6	HOLOPHANE HMLED3-PK3-4K-AW	0
					7	HOLOPHANE HMLED3-PK3-4K-AW	0
					8	HOLOPHANE HMLED3-PK3-4K-AW	0
					9	HOLOPHANE HMLED3-PK3-4K-AW	0
P41	35	HIGHWAY 427 MEDIAN	12+024.8	0	1	HOLOPHANE HMLED3-PK3-4K-AW	0
					2	HOLOPHANE HMLED3-PK3-4K-AW	0
					3	HOLOPHANE HMLED3-PK3-4K-AW	0
					4	HOLOPHANE HMLED3-PK3-4K-AW	0
					5	HOLOPHANE HMLED3-PK3-4K-AW	0
					6	HOLOPHANE HMLED3-PK3-4K-AW	0
P42	35	HIGHWAY 427 NBL	12+165.4	0	1	HOLOPHANE HMLED3-PK3-4K-AN	96
					2	HOLOPHANE HMLED3-PK3-4K-AN	96
					3	HOLOPHANE HMLED3-PK3-4K-AN	96
					4	HOLOPHANE HMLED3-PK3-4K-AN	96
					5	HOLOPHANE HMLED3-PK3-4K-AN	96
					6	HOLOPHANE HMLED3-PK3-4K-AN	96
					7	HOLOPHANE HMLED3-PK3-4K-AN	96
					8	HOLOPHANE HMLED3-PK3-4K-AN	96
P43	40	LANGSTAFF RD & W-N RAMP	9+869.5	14	1	HOLOPHANE HMLED3-PK3-4K-AW	0
					2	HOLOPHANE HMLED3-PK3-4K-AW	0
					3	HOLOPHANE HMLED3-PK3-4K-AW	0
					4	HOLOPHANE HMLED3-PK3-4K-AW	0
					5	HOLOPHANE HMLED3-PK3-4K-AW	0
					6	HOLOPHANE HMLED3-PK3-4K-AW	0
					7	HOLOPHANE HMLED3-PK3-4K-AW	0
					8	HOLOPHANE HMLED3-PK3-4K-AW	0
					9	HOLOPHANE HMLED3-PK3-4K-AW	0
P49	35	LANGSTAFF RD & W-S RAMP	9+595.3	21.5	1	HOLOPHANE HMLED3-PK3-4K-AW	0
					2	HOLOPHANE HMLED3-PK3-4K-AW	0
					3	HOLOPHANE HMLED3-PK3-4K-AW	0
					4	HOLOPHANE HMLED3-PK3-4K-AW	0
					5	HOLOPHANE HMLED3-PK3-4K-AW	0
					6	HOLOPHANE HMLED3-PK3-4K-AW	0
					7	HOLOPHANE HMLED3-PK3-4K-AW	0
					8	HOLOPHANE HMLED3-PK3-4K-AW	0

NOTE(S):

1. WHEN SHOWN WITHOUT *, OFFSET IS FROM CENTRE OR CONTROL LINE OF ROADWAY. WHEN SHOWN WITH *, OFFSET IS FROM EDGE OF TRAVELED PAVEMENT (EP).

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

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APPROVED PROJ. MANAGER			

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TITLE

HWY 427 EXPANSION

PERMANENT CHARTS - 2

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	6	ELE	000	DWG	1005	A

HIGH MAST LIGHTING POLE SUMMARY

POLE NO.	POLE HEIGHT (m)	LOCATION	STATION NO.	OFFSET (m) (NOTE 1)	LUMINAIRE NUMBER	LUMINAIRE TYPE AND DISTRIBUTION	HORIZONTAL ANGLE OF LUMINAIRE (DEGREES)
P50	40	LANGSTAFF RD & E-S RAMP	9+710.9	27	1	HOLOPHANE HMLED3-PK3-4K-AW	0
					2	HOLOPHANE HMLED3-PK3-4K-AW	0
					3	HOLOPHANE HMLED3-PK3-4K-AW	0
					4	HOLOPHANE HMLED3-PK3-4K-AW	0
					5	HOLOPHANE HMLED3-PK3-4K-AW	0
					6	HOLOPHANE HMLED3-PK3-4K-AW	0
					7	HOLOPHANE HMLED3-PK3-4K-AW	0
					8	HOLOPHANE HMLED3-PK3-4K-AW	0
					9	HOLOPHANE HMLED3-PK3-4K-AW	0
P182	40	HIGHWAY 427 NBL	12+342.5	5.5	1	HOLOPHANE HMLED3-PK3-4K-AN	97
					2	HOLOPHANE HMLED3-PK3-4K-AN	97
					3	HOLOPHANE HMLED3-PK3-4K-AN	97
					4	HOLOPHANE HMLED3-PK3-4K-AN	97
					5	HOLOPHANE HMLED3-PK3-4K-AN	97
					6	HOLOPHANE HMLED3-PK3-4K-AN	97
					7	HOLOPHANE HMLED3-PK3-4K-AN	97
					8	HOLOPHANE HMLED3-PK3-4K-AN	97
					9	HOLOPHANE HMLED3-PK3-4K-AN	97
					10	HOLOPHANE HMLED3-PK3-4K-AN	97
					11	HOLOPHANE HMLED3-PK3-4K-AN	97
					12	HOLOPHANE HMLED3-PK3-4K-AN	97
P183	35	HIGHWAY 427 NBL	12+847.7	22.5	1	HOLOPHANE HMLED3-PK3-4K-AN	90
					2	HOLOPHANE HMLED3-PK3-4K-AN	90
					3	HOLOPHANE HMLED3-PK3-4K-AN	90
					4	HOLOPHANE HMLED3-PK3-4K-AN	90
					5	HOLOPHANE HMLED3-PK3-4K-AN	90
					6	HOLOPHANE HMLED3-PK3-4K-AN	90
					7	HOLOPHANE HMLED3-PK3-4K-AN	90
					8	HOLOPHANE HMLED3-PK3-4K-AN	90
					9	HOLOPHANE HMLED3-PK3-4K-AN	90
					10	HOLOPHANE HMLED3-PK3-4K-AN	90

NOTE(S):

1. WHEN SHOWN WITHOUT *, OFFSET IS FROM CENTRE OR CONTROL LINE OF ROADWAY. WHEN SHOWN WITH *, OFFSET IS FROM EDGE OF TRAVELED PAVEMENT (EP).

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SCALE :

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APPROVED PROJ. MANAGER			

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HWY 427 EXPANSION

PERMANENT CHARTS - 3

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	6	ELE	000	DWG	1006	A

ROADWAY LIGHTING CHAMBER SUMMARY

CHAMBER NO.	LOCATION	STATION NO.	OFFSET (m) (NOTE 1)	STANDARD	CHAMBER COVER	REMARKS
HH165	HIGHWAY 427 MEDIAN	10+555	2.0 RT	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH166	HIGHWAY 427 MEDIAN	10+631	2.0 RT	OPSD 2112.040	OPSD 401.010	
HH167	HIGHWAY 427 MEDIAN	10+721	0	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH168	HIGHWAY 427 MEDIAN	10+793	2.0 RT	OPSD 2112.040	OPSD 401.010	
HH169	HIGHWAY 427 MEDIAN	10+867	2.0 LT	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH170	HIGHWAY 427 MEDIAN	10+940	2.0 RT	OPSD 2112.040	OPSD 401.010	
HH171	HIGHWAY 427 MEDIAN	11+016	2.0 RT	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH172	HIGHWAY 427 MEDIAN	11+093	2.0 LT	OPSD 2112.040	OPSD 401.010	
HH173	HIGHWAY 427 MEDIAN	11+169	2.0 RT	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
MH173	HIGHWAY 427 MEDIAN	11+995	3.5*	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO DRAINAGE POCKET
HH174	HIGHWAY 427 MEDIAN	11+015	5.5*	OPSD 2112.020	–	
MH174	HIGHWAY 427 MEDIAN	11+995	1.9 RT	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	GROUND ROD (2), DRAIN TO DRAINAGE POCKET
HH175	HIGHWAY 427 MEDIAN	11+050	4.0*	OPSD 2112.020	–	
MH175	HIGHWAY 427 NBL	11+995	4.0*	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO DRAINAGE POCKET
MH176	LANGSTAFF RD & W–N RAMP	9+973	5.5*	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO DRAINAGE POCKET
HH176	HIGHWAY 427 MEDIAN	11+243	2.0 RT	OPSD 2112.040	OPSD 401.010	
HH177	HIGHWAY 427 MEDIAN	11+317	2.0 RT	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
MH177	LANGSTAFF RD & W–N RAMP	9+973	5.0*	OPSD 2111.040 OPSD 2116.020	OPSD 401.030	DRAIN TO DRAINAGE POCKET
MH178	LANGSTAFF RD & W–N RAMP	10+000	4.8*	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO DRAINAGE POCKET
HH178	HIGHWAY 427 MEDIAN	11+402	2.0 RT	OPSD 2112.040	OPSD 401.010	
HH179	HIGHWAY 427 MEDIAN	11+487	2.0 RT	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
MH179	LANGSTAFF RD & E–S RAMP	9+971	3.5* RT	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO DRAINAGE POCKET
HH180	HIGHWAY 427 MEDIAN	11+549	2.0 RT	OPSD 2112.040	OPSD 401.010	
MH180	LANGSTAFF RD & E–S RAMP	9+971	6.8* LT	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO DRAINAGE POCKET
HH181	HIGHWAY 427 MEDIAN	11+638	2.0 RT	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
MH181	HIGHWAY 427 SBL	12+247	4.0*	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO DRAINAGE POCKET
HH182	HIGHWAY 427 MEDIAN	11+769	2.0 RT	OPSD 2112.040	OPSD 401.010	
MH182	HIGHWAY 427 NBL	12+246.5	2.0 RT	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO DRAINAGE POCKET
MH183	HIGHWAY 427 NBL	12+247.5	4.2*	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO DRAINAGE POCKET
HH183	HIGHWAY 427 MEDIAN	11+858	2.0 RT	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH184	LANGSTAFF RD & W–S RAMP	9+888	4.0*	OPSD 2112.020	–	
HH185	LANGSTAFF RD & S–E/W RAMP	10+172	3.5*	OPSD 2112.020	–	
MH185	LANGSTAFF RD & E–N RAMP	9+681.5	3.5*	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO DRAINAGE POCKET
HH186	LANGSTAFF RD & W–S RAMP	9+600	3.0*	OPSD 2112.040	OPSD 401.010	
HH187	LANGSTAFF RD & W–S RAMP	9+600	1.5*	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH188	LANGSTAFF RD & N–E/W RAMP	10+550	3.5*	OPSD 2112.040	OPSD 401.010	
HH189	LANGSTAFF RD & E–S RAMP	9+805	3.5*	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH190	LANGSTAFF RD & E–S RAMP	9+987	3.5*	OPSD 2112.020	–	
HH191	LANGSTAFF RD & E–S RAMP	9+887	3.5 RT	OPSD 2112.040	OPSD 401.010	

ROADWAY LIGHTING CHAMBER SUMMARY

CHAMBER NO.	LOCATION	STATION NO.	OFFSET (m) (NOTE 1)	STANDARD	CHAMBER COVER	REMARKS
HH192	HIGHWAY 427 MEDIAN	11+927	2.0 RT	OPSD 2112.040	OPSD 401.010	
HH193	LANGSTAFF RD & W–N RAMP	9+955	3.5*	OPSD 2112.020	–	
HH194	LANGSTAFF RD & W–N RAMP	9+880	3.5*	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH195	HIGHWAY 427 MEDIAN	12+091.5	2.0 RT	OPSD 2112.040	OPSD 401.010	
HH196	HIGHWAY 427 NBL	12+165	2.0 RT	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH197	LANGSTAFF RD & N–E/W RAMP	10+173	3.5*	OPSD 2112.020	–	
HH198	LANGSTAFF RD & E–N RAMP	9+825	3.5*	OPSD 2112.020	–	
HH199	HIGHWAY 427 NBL	12+340	2.0 RT	OPSD 2112.040	OPSD 401.030	GROUND ROD (2)
HH200	HIGHWAY 427 SBL	12+412	5.5*	OPSD 2112.040	OPSD 401.010	
HH201	HIGHWAY 427 NBL	12+413	2.5 RT	OPSD 2112.040	OPSD 401.010	
HH202	HIGHWAY 427 NBL	12+564	2.5 RT	OPSD 2112.040	OPSD 401.010	
HH203	HIGHWAY 427 NBL	12+729	1.3 RT	OPSD 2112.040	OPSD 401.010	
HH204	HIGHWAY 427 NBL	12+820	3.0 RT	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH205	HIGHWAY 427 NBL	12+922	2.0 RT	OPSD 2112.040	OPSD 401.010	
HH206	LANGSTAFF RD & E–N RAMP	9+802	3.5 RT	OPSD 2112.040	OPSD 401.010	

NOTE(S):

1. WHEN SHOWN WITHOUT *, OFFSET IS FROM CENTRE OR CONTROL LINE OF ROADWAY. WHEN SHOWN WITH *, OFFSET IS FROM EDGE OF TRAVELED PAVEMENT (EP).
2. REFER TO ELECTRICAL DRAWINGS FOR TYPE OF TRAFFIC COUNT VEHICLE CLASSIFICATION STATION AND DETECTOR LOOP LAYOUT.

TRAFFIC COUNT STATION, VEHICLE CLASSIFICATION SUMMARY

STATION ID	LOCATION	STATION NO.	DETECTOR ID	SIZE (m)	TURNS	INDUCTANCE (μH)	REMARKS
TCS19	HIGHWAY 427 MEDIAN	11+115	LD277	2 X 2	3	79	NOTE 2
			LD278	2 X 2	4	131	NOTE 2
			LD279	2 X 2	3	79	NOTE 2
			LD280	2 X 2	4	131	NOTE 2
			LD281	2 X 2	3	79	NOTE 2
			LD282	2 X 2	4	131	NOTE 2
			LD283	2 X 2	3	79	NOTE 2
			LD284	2 X 2	4	131	NOTE 2
TCS20	HIGHWAY 427 MEDIAN	11+050	LD285	2 X 2	4	131	NOTE 2
			LD286	2 X 2	3	79	NOTE 2
			LD287	2 X 2	4	131	NOTE 2
			LD288	2 X 2	3	79	NOTE 2
			LD289	2 X 2	4	131	NOTE 2
			LD290	2 X 2	3	79	NOTE 2
			LD291	2 X 2	4	131	NOTE 2
			LD292	2 X 2	3	79	NOTE 2
TCS21	LANGSTAFF RD & W–S RAMP	9+888	LD293	3 X 2	4	164	NOTE 2
TCS22	LANGSTAFF RD & S–E/W RAMP	10+172	LD294	2 X 2	4	131	NOTE 2
			LD295	2 X 2	3	79	NOTE 2
TCS23	LANGSTAFF RD & E–S RAMP	9+987	LD296	3 X 2	4	164	NOTE 2
TCS24	LANGSTAFF RD & W–N RAMP	9+955	LD297	3 X 2	4	164	NOTE 2
TCS25	LANGSTAFF RD & N–E/W RAMP	10+173	LD298	2 X 2	3	79	NOTE 2
			LD299	2 X 2	4	131	NOTE 2
TCS26	LANGSTAFF RD & E–N RAMP	9+825	LD300	3 X 2	4	164	NOTE 2

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

N.T.S.

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

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TITLE

HWY 427 EXPANSION

PERMANENT CHARTS - 4

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	6	ELE	000	DWG	1007	A

CONVENTIONAL LIGHTING POLE SUMMARY

POLE NO.	LOCATION	Station	Offset (m) (Note 1)	POLE TYPE	LENGTH (M) (Note 2)	CONCRETE FOOTING	FRANGIBLE BASE	LUMINAIRE PHOTOMETRIC	WATTAGE (W)	ARM LENGTH (M)	MAXIMUM ELEVATION TO TOP OF LUMINAIRE	REMARKS
P44	LANGSTAFF RD E-N RAMP	9+407.5	1.0 BSW	STEEL	12	OPSD 2200.010	–	ATB2_60BLEDE13_R2	273	2.4	199.057	GROUND ROD
P45	LANGSTAFF RD E-N RAMP	9+442	1.0 BSW	STEEL	4.8	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-AI	113	0.6	190.687	
P185	LANGSTAFF RD E-N RAMP	9+470	5.2 EP	STEEL	4.8	OPSD 2200.010	–	XNV2-AF-02-LED-U-T3R-AI	113	0.6	190.507	
P186	LANGSTAFF RD E-N RAMP	9+500	5.2 EP	STEEL	4.8	OPSD 2200.010	–	XNV2-AF-02-LED-U-T3R-AI	113	0.6	190.807	
P187	LANGSTAFF RD E-N RAMP	9+532	1.0 BSW	STEEL	4.8	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-AI	113	0.6	190.777	
P46	LANGSTAFF RD E-N RAMP	9+565	5.2 EP	STEEL	4.5	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T3R-AI	113	0.6	190.297	
P47	LANGSTAFF RD E-N RAMP	9+602.5	5.2 EP	STEEL	12	OPSD 2200.010	OPSD 2428.010	ATB2_60BLEDE13_R2	273	2.4	197.727	GROUND ROD
P48	LANGSTAFF RD E-N RAMP	9+663.5	5.2 EP	STEEL	12	OPSD 2200.010	OPSD 2428.010	ATB2_60BLEDE13_R2	273	2.4	195.791	
P154	LANGSTAFF RD E-N RAMP	9+853	5.2 EP	STEEL	3.8	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	187.506	
P155	LANGSTAFF RD E-N RAMP	9+863	5.2 EP	STEEL	3.8	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	187.652	
P156	LANGSTAFF RD E-N RAMP	9+873	5.2 EP	STEEL	3.8	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	187.800	GROUND ROD
P157	LANGSTAFF RD E-N RAMP	9+883	5.2 EP	STEEL	3.8	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	188.017	
P158	LANGSTAFF RD E-N RAMP	9+893	5.2 EP	STEEL	3.8	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	188.145	
P159	LANGSTAFF RD E-N RAMP	9+903	5.2 EP	STEEL	3.8	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	188.341	
P160	LANGSTAFF RD E-N RAMP	9+913	5.2 EP	STEEL	3.8	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	188.526	
P161	LANGSTAFF RD E-N RAMP	9+923	5.2 EP	STEEL	3.8	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	188.849	GROUND ROD
P162	LANGSTAFF RD E-N RAMP	9+933	5.2 EP	STEEL	3.8	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	189.065	
P163	LANGSTAFF RD E-N RAMP	9+943	5.2 EP	STEEL	3.8	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	189.292	
P164	LANGSTAFF RD E-N RAMP	9+953	5.2 EP	STEEL	4.0 NOTE 2	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	189.499	
P165	LANGSTAFF RD E-N RAMP	9+963	5.2 EP	STEEL	3.8	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	189.760	
P166	LANGSTAFF RD E-N RAMP	9+973	5.2 EP	STEEL	7.5	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-AI	111	0.6	193.517	GROUND ROD
P167	LANGSTAFF RD E-N RAMP	9+987	5.2 EP	STEEL	7.5	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-AI	111	0.6	193.954	
P168	LANGSTAFF RD E-N RAMP	10+002	2.1 BCB	STEEL	7.5	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-AI	111	0.6	194.437	
P169	LANGSTAFF RD E-N RAMP	10+016	2.1 BCB	STEEL	7.5	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-AI	111	0.6	194.787	
P170	LANGSTAFF RD E-N RAMP	10+031	2.1 BCB	STEEL	7.5	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-AI	111	0.6	194.934	
P171	LANGSTAFF RD E-N RAMP	10+046	2.1 BCB	STEEL	7.5	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-AI	111	0.6	195.105	GROUND ROD
P172	LANGSTAFF RD E-N RAMP	10+062	2.1 BCB	STEEL	7.5	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-AI	111	0.6	195.259	
P173	LANGSTAFF RD E-N RAMP	10+077	2.1 BCB	STEEL	7.5	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-AI	111	0.6	195.418	
P174	LANGSTAFF RD E-N RAMP	10+092	2.1 BCB	STEEL	7.5	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-AI	111	0.6	195.569	
P175	LANGSTAFF RD E-N RAMP	10+107	1.6 BGR	STEEL	7.5	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-AI	111	0.6	195.727	
P176	LANGSTAFF RD E-N RAMP	10+122	1.6 BGR	STEEL	7.5	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-AI	111	0.6	195.884	GROUND ROD
P177	LANGSTAFF RD E-N RAMP	10+137	1.6 BGR	STEEL	7.5	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-AI	111	0.6	196.037	
P178	LANGSTAFF RD E-N RAMP	10+152	1.6 BGR	STEEL	7.5	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-AI	111	0.6	196.240	
P179	LANGSTAFF RD E-N RAMP	10+166	1.6 BGR	STEEL	7.5	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-AI	111	0.6	196.336	
P180	LANGSTAFF RD E-N RAMP	10+181	1.6 BGR	STEEL	7.5	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-AI	111	0.6	196.521	
P181	LANGSTAFF RD E-N RAMP	10+205	1.6 BGR	STEEL	7.5	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-AI	111	0.6	202.158	GROUND ROD
P51	LANGSTAFF RD N-EW RAMP	10+523	5.2 EP	STEEL	12	OPSD 2200.010	OPSD 2428.010	ATB2_60BLEDE13_R2	273	2.4	–	GROUND ROD
P52	LANGSTAFF RD N-EW RAMP	10+459	5.2 EP	STEEL	12	OPSD 2200.010	OPSD 2428.010	ATB2_60BLEDE13_R2	273	2.4	–	
P53	LANGSTAFF RD N-EW RAMP	10+398	5.2 EP	STEEL	12	OPSD 2200.010	OPSD 2428.010	ATB2_60BLEDE13_R2	273	2.4	–	
P54	LANGSTAFF RD N-EW RAMP	10+333	5.2 EP	STEEL	12	OPSD 2200.010	OPSD 2428.010	ATB2_60BLEDE13_R2	273	2.4	199.984	
P55	LANGSTAFF RD N-EW RAMP	10+268	5.2 EP	STEEL	12	OPSD 2200.010	OPSD 2428.010	ATB2_60BLEDE13_R2	273	2.4	199.003	
P56	LANGSTAFF RD N-EW RAMP	10+201	5.2 EP	STEEL	12	OPSD 2200.010	OPSD 2428.010	ATB2_60BLEDE13_R2	273	2.4	198.302	GROUND ROD

NOTE(S):

1. OFFSET INFORMATION GIVEN FROM ONE OF THE FOLLOWING:

   EP – EDGE OF TRAVELLED PAVEMENT
   BGR – BACK OF GUIDERAIL CHANNEL
   BCB – BACK OF CONCRETE BARRIER
   RSS – BACK OF RSS WALL
   BSW – BACK OF SIDEWALK

2. POLE HEIGHT TO BE MODIFIED TO ENSURE MAXIMUM ELEVATION TO TOP OF LUMINAIRE IS MET.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

N.T.S.

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

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TITLE

HWY 427 EXPANSION

PERMANENT CHARTS - 5

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	6	ELE	000	DWG	1008	A

CONVENTIONAL LIGHTING POLE SUMMARY

POLE NO.	LOCATION	Station	Offset (m) (Note 1)	POLE TYPE	LENGTH (M)	CONCRETE FOOTING	FRANGIBLE BASE	LUMINAIRE PHOTOMETRIC	WATTAGE (W)	ARM LENGTH (M)	MAXIMUM ELEVATION TO TOP OF LUMINAIRE	REMARKS
P57	LANGSTAFF RD N-EW RAMP	10+149	5.2 EP	STEEL	12	OPSD 2200.010	OPSD 2428.010	ATB2_60BLEDE13_R2	273	2.4	198.014	
P58	LANGSTAFF RD N-EW RAMP	10+123	5.2 EP	STEEL	3.8	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	188.993	
P59	LANGSTAFF RD N-EW RAMP	10+097	5.2 EP	STEEL	3.8	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	188.994	
P60	LANGSTAFF RD N-EW RAMP	10+072	5.2 EP	STEEL	3.8	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	189.293	
P61	LANGSTAFF RD N-EW RAMP	10+047	5.2 EP	STEEL	3.8	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	189.685	GROUND ROD
P62	LANGSTAFF RD N-EW RAMP	10+026	5.2 EP	STEEL	3.8	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	190.024	
P63	LANGSTAFF RD N-EW RAMP	10+006	5.2 EP	STEEL	3.8	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	190.453	
P64	LANGSTAFF RD N-EW RAMP	9+996	5.2 EP	STEEL	3.8	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	190.612	
P65	LANGSTAFF RD N-EW RAMP	9+986	5.2 EP	STEEL	3.8	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	190.844	
P66	LANGSTAFF RD N-EW RAMP	9+976	5.2 EP	STEEL	3.8	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	190.929	GROUND ROD
P67	LANGSTAFF RD N-EW RAMP	9+966	5.2 EP	STEEL	3.8	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	191.086	
P68	LANGSTAFF RD N-EW RAMP	9+956	5.2 EP	STEEL	3.8	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	191.269	
P69	LANGSTAFF RD N-EW RAMP	9+946	5.2 EP	STEEL	3.8	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	191.396	
P70	LANGSTAFF RD N-EW RAMP	9+931	5.2 EP	STEEL	7.3	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-AI	111	0.6	195.083	
P71	LANGSTAFF RD N-EW RAMP	9+905	5.2 EP	STEEL	7.3	OPSD 2200.010	OPSD 2428.010	XNV2-AF-02-LED-U-T4FT-AI	111	0.6	195.545	GROUND ROD
P72	HIGHWAY 427 SBL	12+433	1.6 BGR	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	196.613	GROUND ROD
P73	HIGHWAY 427 SBL	12+442	1.6 BGR	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	187.814	
P74	HIGHWAY 427 SBL	12+453	1.6 BGR	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	187.883	
P75	HIGHWAY 427 SBL	12+462	1.6 BGR	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	187.979	
P76	HIGHWAY 427 SBL	12+472	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	188.167	GROUND ROD
P77	HIGHWAY 427 SBL	12+482	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	188.251	
P78	HIGHWAY 427 SBL	12+492	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	188.314	
P79	HIGHWAY 427 SBL	12+502	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	188.488	
P80	HIGHWAY 427 SBL	12+512	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	188.606	
P81	HIGHWAY 427 SBL	12+522	0.425 RSS	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	188.776	
P82	HIGHWAY 427 SBL	12+532	0.425 RSS	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	191.114	NOTE 3
P83	HIGHWAY 427 SBL	12+542	0.425 RSS	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	191.259	NOTE 3
P84	HIGHWAY 427 SBL	12+552	0.425 RSS	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	191.332	NOTE 3
P85	HIGHWAY 427 SBL	12+562	0.425 RSS	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	191.557	NOTE 3
P86	HIGHWAY 427 SBL	12+572	0.425 RSS	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	190.880	NOTE 3
P87	HIGHWAY 427 SBL	12+582	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	191.059	GROUND ROD
P88	HIGHWAY 427 SBL	12+592	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	191.022	
P89	HIGHWAY 427 SBL	12+602	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	191.318	
P90	HIGHWAY 427 SBL	12+612	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	191.514	
P91	HIGHWAY 427 SBL	12+622	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	191.449	
P92	HIGHWAY 427 SBL	12+632	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	191.734	GROUND ROD
P93	HIGHWAY 427 SBL	12+642	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	191.865	
P94	HIGHWAY 427 SBL	12+652	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	192.031	
P95	HIGHWAY 427 SBL	12+662	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	191.783	
P96	HIGHWAY 427 SBL	12+672	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	192.069	
P97	HIGHWAY 427 SBL	12+681	1.5 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2-AF-02-LED-U-T4FT-600-AI	66	0.6	192.107	GROUND ROD

NOTE(S):

1. OFFSET INFORMATION GIVEN FROM ONE OF THE FOLLOWING:

   EP – EDGE OF TRAVELLED PAVEMENT
   BGR – BACK OF GUIDERAIL CHANNEL
   BCB – BACK OF CONCRETE BARRIER
   RSS – BACK OF RSS WALL

2. POLE HEIGHT TO BE MODIFIED TO ENSURE MAXIMUM ELEVATION TO TOP OF LUMINAIRE IS MET.

3. COORDINATE INSTALLTION OF POLE FOOTING WITH RSS WALL.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

N.T.S.

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

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TITLE

HWY 427 EXPANSION

PERMANENT CHARTS - 6

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	6	ELE	000	DWG	1009	A

CONVENTIONAL LIGHTING POLE SUMMARY

POLE NO.	LOCATION	Station	Offset (m) (Note 1)	POLE TYPE	LENGTH (M)	CONCRETE FOOTING	FRANGIBLE BASE	LUMINAIRE PHOTOMETRIC	WATTAGE (W)	ARM LENGTH (M)	MAXIMUM ELEVATION TO TOP OF LUMINAIRE	REMARKS
P98	HIGHWAY 427 SBL	12+449	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	187.969	
P99	HIGHWAY 427 SBL	12+459	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	188.031	
P100	HIGHWAY 427 SBL	12+469	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	188.146	
P101	HIGHWAY 427 SBL	12+479	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	188.297	GROUND ROD
P102	HIGHWAY 427 SBL	12+488	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	188.427	
P103	HIGHWAY 427 SBL	12+498	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	188.540	
P104	HIGHWAY 427 SBL	12+508	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	188.698	
P105	HIGHWAY 427 SBL	12+518	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	188.835	
P106	HIGHWAY 427 SBL	12+528	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	188.992	GROUND ROD
P107	HIGHWAY 427 SBL	12+538	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	190.109	
P108	HIGHWAY 427 SBL	12+548	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	190.245	
P109	HIGHWAY 427 SBL	12+558	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	190.720	
P110	HIGHWAY 427 SBL	12+568	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	190.947	
P111	HIGHWAY 427 SBL	12+578	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	189.710	GROUND ROD
P112	HIGHWAY 427 SBL	12+588	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	189.728	
P113	HIGHWAY 427 SBL	12+597	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	189.906	
P114	HIGHWAY 427 SBL	12+608	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	190.044	
P115	HIGHWAY 427 SBL	12+618	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	190.149	
P116	HIGHWAY 427 SBL	12+627	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	190.251	GROUND ROD
P117	HIGHWAY 427 SBL	12+637	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	190.433	
P118	HIGHWAY 427 SBL	12+647	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	190.596	
P119	HIGHWAY 427 SBL	12+658	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	190.698	
P120	HIGHWAY 427 SBL	12+668	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	190.872	
P121	HIGHWAY 427 SBL	12+677	0.8 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	190.922	GROUND ROD
P122	HIGHWAY 427 SBL	12+692	0.8 BCB	STEEL	7.5	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–AI	111	0.6	194.714	
P123	HIGHWAY 427 SBL	12+717	0.8 BCB	STEEL	7.5	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–AI	111	0.6	195.076	
P124	HIGHWAY 427 SBL	12+742	0.8 BCB	STEEL	7.5	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–AI	111	0.6	195.426	
P125	HIGHWAY 427 SBL	12+766	0.8 BCB	STEEL	7.5	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–AI	111	0.6	195.730	GROUND ROD
P126	HIGHWAY 427 NBL	12+421	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	188.488	
P127	HIGHWAY 427 NBL	12+431	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	188.659	
P128	HIGHWAY 427 NBL	12+441	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	188.947	GROUND ROD
P129	HIGHWAY 427 NBL	12+451	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	188.964	
P130	HIGHWAY 427 NBL	12+461	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	189.081	
P131	HIGHWAY 427 NBL	12+471	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	189.197	
P132	HIGHWAY 427 NBL	12+481	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	189.219	
P133	HIGHWAY 427 NBL	12+491	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	189.395	GROUND ROD
P134	HIGHWAY 427 NBL	12+501	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	189.483	

NOTE(S):

1. OFFSET INFORMATION GIVEN FROM ONE OF THE FOLLOWING:

   EP – EDGE OF TRAVELLED PAVEMENT
   BGR – BACK OF GUIDERAIL CHANNEL
   BCB – BACK OF CONCRETE BARRIER
   RSS – BACK OF RSS WALL

2. POLE HEIGHT TO BE MODIFIED TO ENSURE MAXIMUM ELEVATION TO TOP OF LUMINAIRE IS MET.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

N.T.S.

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

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TITLE

HWY 427 EXPANSION

PERMANENT CHARTS - 7

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	6	ELE	000	DWG	1010	A

CONVENTIONAL LIGHTING POLE SUMMARY

POLE NO.	LOCATION	Station	Offset (m) (Note 1)	POLE TYPE	LENGTH (M)	CONCRETE FOOTING	FRANGIBLE BASE	LUMINAIRE PHOTOMETRIC	WATTAGE (W)	ARM LENGTH (M)	MAXIMUM ELEVATION TO TOP OF LUMINAIRE	REMARKS
P135	HIGHWAY 427 NBL	12+511	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	189.585	
P136	HIGHWAY 427 NBL	12+521	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	189.701	
P137	HIGHWAY 427 NBL	12+531	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	189.847	
P138	HIGHWAY 427 NBL	12+541	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	189.979	GROUND ROD
P139	HIGHWAY 427 NBL	12+551	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	190.040	
P140	HIGHWAY 427 NBL	12+561	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	190.161	
P141	HIGHWAY 427 NBL	12+571	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	190.253	
P142	HIGHWAY 427 NBL	12+581	2.1 BCB	STEEL	4.15	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–600–AI	66	0.6	190.442	
P143	HIGHWAY 427 NBL	12+597	2.1 BCB	STEEL	7.5	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–AI	111	0.6	194.038	GROUND ROD
P144	HIGHWAY 427 NBL	12+612	2.1 BCB	STEEL	7.5	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–AI	111	0.6	194.125	
P145	HIGHWAY 427 NBL	12+627	2.1 BCB	STEEL	7.5	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–AI	111	0.6	194.354	
P146	HIGHWAY 427 NBL	12+642	2.1 BCB	STEEL	7.5	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–AI	111	0.6	194.469	
P147	HIGHWAY 427 NBL	12+656	2.1 BCB	STEEL	7.5	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–AI	111	0.6	194.728	
P148	HIGHWAY 427 NBL	12+671	2.1 BCB	STEEL	7.5	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–AI	111	0.6	194.847	GROUND ROD
P149	HIGHWAY 427 NBL	12+686	2.1 BCB	STEEL	7.5	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–AI	111	0.6	195.084	
P150	HIGHWAY 427 NBL	12+701	2.1 BCB	STEEL	7.5	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–AI	111	0.6	195.317	
P151	HIGHWAY 427 NBL	12+716	1.6 BGR	STEEL	7.5	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–AI	111	0.6	195.430	
P152	HIGHWAY 427 NBL	12+731	1.6 BGR	STEEL	7.5	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–AI	111	0.6	195.601	
P153	HIGHWAY 427 NBL	12+747	1.6 BGR	STEEL	7.5	OPSD 2200.010	–	XNV2–AF–02–LED–U–T4FT–AI	111	0.6	195.630	GROUND ROD

NOTE(S):

1. OFFSET INFORMATION GIVEN FROM ONE OF THE FOLLOWING:

   EP – EDGE OF TRAVELLED PAVEMENT
   BGR – BACK OF GUIDERAIL CHANNEL
   BCB – BACK OF CONCRETE BARRIER
   RSS – BACK OF RSS WALL

2. POLE HEIGHT TO BE MODIFIED TO ENSURE MAXIMUM ELEVATION TO TOP OF LUMINAIRE IS MET.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

N.T.S.

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

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TITLE

HWY 427 EXPANSION

PERMANENT CHARTS - 8

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	6	ELE	000	DWG	1011	A

NOTE(S):

1. WHEN SHOWN WITHOUT *, OFFSET IS FROM CENTRE OR CONTROL LINE OF ROADWAY. WHEN SHOWN WITH *, OFFSET IS FROM EDGE OF TRAVELED PAVEMENT (EP).

TRAFFIC SIGNAL CONTROLLER CABINET SUMMARY

EQUIPMENT ID	LOCATION	STATION	OFFSET(m) (NOTE 1)	TYPE	CONCRETE PAD	REMARKS
TC3	LANGSTAFF RD & COMMUTER PARKING LOT	9+606.5	17	YORK REGION STANDARD CONTROLLER	YORK REGION STD. E-3.09	–
TC4	LANGSTAFF RD & N-E/W RAMP TERMINAL	9+855.5	17.5	YORK REGION STANDARD CONTROLLER	YORK REGION STD. E-3.09	–
TC5	LANGSTAFF RD & S-E/W RAMP TERMINAL	10+137.5	16.5	YORK REGION STANDARD CONTROLLER	YORK REGION STD. E-3.09	–

TRAFFIC SIGNAL EQUIPMENT SUMMARY

CHAMBER ID	LOCATION	STATION	OFFSET (m) (NOTE 1)	STANDARD	REMARKS
HH20	COMMUTER PARKING LOT	9+618	2.0*	OPSD 2112.040	
HH21	LANGSTAFF RD	9+738	3.0*	OPSD 2112.040	
HH30	LANGSTAFF RD & W-S RAMP	9+728	1.5*	OPSD 2112.040	
MH30	LANGSTAFF RD	9+653	2.1*	OPSD 2111.020 OPSD 2116.020	GROUND ROD, DRAIN TO EMBANKMENT SLOPE
MH31	LANGSTAFF RD	9+656	1.0 RT	OPSD 2111.020 OPSD 2116.020	DRAIN TO DRAINAGE POCKET
MH32	LANGSTAFF RD & W-S RAMP	9+655.25	1.6*	OPSD 2111.020 OPSD 2116.020	GROUND ROD, DRAIN TO EMBANKMENT SLOPE
MH33	LANGSTAFF RD	9+609	3.0*	OPSD 2111.020 OPSD 2116.020	GROUND ROD, DRAIN TO EMBANKMENT SLOPE
MH34	LANGSTAFF RD	9+604	0	OPSD 2111.020 OPSD 2116.020	DRAIN TO DRAINAGE POCKET
MH35	LANGSTAFF RD	9+601.5	6.7*	OPSD 2111.040 OPSD 2116.020	GROUND ROD, DRAIN TO EMBANKMENT SLOPE
HH40	LANGSTAFF RD	10+060.5	1.8*	OPSD 2111.040	
MH40	LANGSTAFF RD & N-E/W RAMP	9+867	3.4*	OPSD 2111.020 OPSD 2116.020	GROUND ROD, DRAIN TO EMBANKMENT SLOPE
HH41	LANGSTAFF RD & E-N RAMP	10+086	2.1*	OPSD 2112.040	GROUND ROD
MH41	LANGSTAFF RD	9+873	2.7*	OPSD 2111.020 OPSD 2116.020	GROUND ROD, DRAIN TO EMBANKMENT SLOPE
HH42	LANGSTAFF RD & E-N RAMP	10+270	2.8	OPSD 2112.040	
MH42	LANGSTAFF RD	9+815.5	4.5*	OPSD 2111.020 OPSD 2116.020	GROUND ROD, DRAIN TO EMBANKMENT SLOPE
MH43	LANGSTAFF RD	9+815	3.0*	OPSD 2111.020 OPSD 2116.020	GROUND ROD, DRAIN TO EMBANKMENT SLOPE
MH44	LANGSTAFF RD	9+870	0	OPSD 2111.020 OPSD 2116.020	DRAIN TO DRAINAGE POCKET
MH45	LANGSTAFF RD	9+816	0	OPSD 2111.020	DRAIN TO DRAINAGE POCKET
MH50	LANGSTAFF RD & S-E/W RAMP	10+161.5	7.1*	OPSD 2111.040 OPSD 2116.020	GROUND ROD, DRAIN TO DRAINAGE POCKET
MH51	LANGSTAFF RD	10+144.5	1.6*	OPSD 2111.020 OPSD 2116.020	GROUND ROD, DRAIN TO EMBANKMENT SLOPE
MH52	LANGSTAFF RD	10+187	1.5*	OPSD 2111.020 OPSD 2116.020	GROUND ROD, DRAIN TO DRAINAGE POCKET
MH53	LANGSTAFF RD	10+188	6.7*	OPSD 2111.020 OPSD 2116.020	GROUND ROD, DRAIN TO EMBANKMENT SLOPE
MH54	LANGSTAFF RD	10+142	0	OPSD 2111.020 OPSD 2116.020	GROUND ROD, DRAIN TO DRAINAGE POCKET
MH55	LANGSTAFF RD	10+194.5	0	OPSD 2111.020 OPSD 2116.020	GROUND ROD, DRAIN TO DRAINAGE POCKET

DETECTOR LOOP SUMMARY

ID	LOCATION	TYPE	SIZE (m)	TURNS	INDUCTANCE (μH)	REMARKS
LD30	LANGSTAFF RD & COMMUTER PARKING LOT	SIMPLE	1.8 X 13	2	146	
LD31	LANGSTAFF RD & COMMUTER PARKING LOT	SIMPLE	1.8 X 13	2	146	
LD32	LANGSTAFF RD	SIMPLE	1.8 X 1.8	6	248	
LD33	LANGSTAFF RD	SIMPLE	1.8 X 1.8	6	248	
NID30	LANGSTAFF RD	RADAR	1.8 X 1.8	–	–	
NID31	LANGSTAFF RD	RADAR	1.8 X 1.8	–	–	
LD40	LANGSTAFF RD	SIMPLE	1.8 X 1.8	6	248	
LD41	LANGSTAFF RD	SIMPLE	1.8 X 1.8	6	248	
LD43	LANGSTAFF RD & N-E/W RAMP	SIMPLE	1.8 X 14	2	155	
LD44	LANGSTAFF RD & N-E/W RAMP	SIMPLE	1.8 X 14	2	155	
LD45	LANGSTAFF RD & N-E/W RAMP	SIMPLE	1.8 X 14	2	155	
NID40	LANGSTAFF RD	RADAR	1.8 X 1.8	–	–	
NID41	LANGSTAFF RD	RADAR	1.8 X 1.8	–	–	
LD50	LANGSTAFF RD	SIMPLE	1.8 X 1.8	5	177	
LD51	LANGSTAFF RD	SIMPLE	1.8 X 1.8	5	177	
LD52	LANGSTAFF RD	SIMPLE	1.8 X 1.8	6	248	
LD53	LANGSTAFF RD	SIMPLE	1.8 X 1.8	6	248	
LD55	LANGSTAFF RD & S – E/W RAMP	SIMPLE	1.8 X 14	5	177	
LD56	LANGSTAFF RD & S – E/W RAMP	SIMPLE	1.8 X 14	5	177	
LD57	LANGSTAFF RD & S – E/W RAMP	SIMPLE	1.8 X 14	5	177	

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

N.T.S.

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

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TITLE

HWY 427 EXPANSION

PERMANENT CHARTS - 10

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	6	ELE	000	DWG	1013	A

HIGH MAST LIGHTING POLE SUMMARY

POLE NO.	POLE LENGTH (m)	LOCATION	STATION NO.	OFFSET (m) (NOTE 1)	LUMINAIRE NUMBER	LUMINAIRE TYPE AND DISTRIBUTION	HORIZONTAL ANGLE OF LUMINAIRE (DEGREES)
P118	35	HIGHWAY 427 NBL	13+008.4	20.5	1	HOLOPHANE HMLED3–PK3–4K–AN	88
					2	HOLOPHANE HMLED3–PK3–4K–AN	88
					3	HOLOPHANE HMLED3–PK3–4K–AN	88
					4	HOLOPHANE HMLED3–PK3–4K–AN	88
					5	HOLOPHANE HMLED3–PK3–4K–AN	88
					6	HOLOPHANE HMLED3–PK3–4K–AN	88
					7	HOLOPHANE HMLED3–PK3–4K–AN	88
					8	HOLOPHANE HMLED3–PK3–4K–AN	88
					9	HOLOPHANE HMLED3–PK3–4K–AN	88
					10	HOLOPHANE HMLED3–PK3–4K–AN	88
P119	35	HIGHWAY 427 NBL	13+158.3	15	1	HOLOPHANE HMLED3–PK3–4K–AN	86
					2	HOLOPHANE HMLED3–PK3–4K–AN	86
					3	HOLOPHANE HMLED3–PK3–4K–AN	86
					4	HOLOPHANE HMLED3–PK3–4K–AN	86
					5	HOLOPHANE HMLED3–PK3–4K–AN	86
					6	HOLOPHANE HMLED3–PK3–4K–AN	86
					7	HOLOPHANE HMLED3–PK3–4K–AN	86
					8	HOLOPHANE HMLED3–PK3–4K–AN	86
P120	35	HIGHWAY 427 SBL	13+311	10	1	HOLOPHANE HMLED3–PK3–4K–AW	0
					2	HOLOPHANE HMLED3–PK3–4K–AW	0
					3	HOLOPHANE HMLED3–PK3–4K–AW	0
					4	HOLOPHANE HMLED3–PK3–4K–AW	0
					5	HOLOPHANE HMLED3–PK3–4K–AW	0
					6	HOLOPHANE HMLED3–PK3–4K–AW	0
P121	35	HIGHWAY 427 SBL	13+474.5	4	1	HOLOPHANE HMLED3–PK3–4K–AW	0
					2	HOLOPHANE HMLED3–PK3–4K–AW	0
					3	HOLOPHANE HMLED3–PK3–4K–AW	0
					4	HOLOPHANE HMLED3–PK3–4K–AW	0
					5	HOLOPHANE HMLED3–PK3–4K–AW	0
					6	HOLOPHANE HMLED3–PK3–4K–AW	0
P122	35	HIGHWAY 427 SBL	13+636	2	1	HOLOPHANE HMLED3–PK3–4K–AN	76
					2	HOLOPHANE HMLED3–PK3–4K–AN	76
					3	HOLOPHANE HMLED3–PK3–4K–AN	76
					4	HOLOPHANE HMLED3–PK3–4K–AN	76
P123	35	HIGHWAY 427 SBL	13+786.7	1	1	HOLOPHANE HMLED3–PK3–4K–AN	4
					2	HOLOPHANE HMLED3–PK3–4K–AN	49
					3	HOLOPHANE HMLED3–PK3–4K–AN	94
					4	HOLOPHANE HMLED3–PK3–4K–AN	139
					5	HOLOPHANE HMLED3–PK3–4K–AN	184
					6	HOLOPHANE HMLED3–PK3–4K–AN	229
					7	HOLOPHANE HMLED3–PK3–4K–AN	274
					8	HOLOPHANE HMLED3–PK3–4K–AN	319

HIGH MAST LIGHTING POLE SUMMARY

POLE NO.	POLE LENGTH (m)	LOCATION	STATION NO.	OFFSET (m) (NOTE 1)	LUMINAIRE NUMBER	LUMINAIRE TYPE AND DISTRIBUTION	HORIZONTAL ANGLE OF LUMINAIRE (DEGREES)
P124	40 (NOTE 2)	HIGHWAY 427	13+925.6	0	1	HOLOPHANE HMLED3–PK3–4K–AW	0
					2	HOLOPHANE HMLED3–PK3–4K–AW	0
					3	HOLOPHANE HMLED3–PK3–4K–AW	0
					4	HOLOPHANE HMLED3–PK3–4K–AW	0
					5	HOLOPHANE HMLED3–PK3–4K–AW	0
					6	HOLOPHANE HMLED3–PK3–4K–AW	0
					7	HOLOPHANE HMLED3–PK3–4K–AW	0
					8	HOLOPHANE HMLED3–PK3–4K–AW	0
P125	40 (NOTE 2)	HIGHWAY 427	14+126.2	0	1	HOLOPHANE HMLED3–PK3–4K–M	63
					2	HOLOPHANE HMLED3–PK3–4K–M	63
					3	HOLOPHANE HMLED3–PK3–4K–M	63
					4	HOLOPHANE HMLED3–PK3–4K–M	63
					5	HOLOPHANE HMLED3–PK3–4K–M	243
					6	HOLOPHANE HMLED3–PK3–4K–M	243
					7	HOLOPHANE HMLED3–PK3–4K–M	243
					8	HOLOPHANE HMLED3–PK3–4K–M	243
P126	40 (NOTE 2)	HIGHWAY 427	14+269.5	0	1	HOLOPHANE HMLED3–PK3–4K–N	66
					2	HOLOPHANE HMLED3–PK3–4K–N	66
					3	HOLOPHANE HMLED3–PK3–4K–N	66
					4	HOLOPHANE HMLED3–PK3–4K–N	66
					5	HOLOPHANE HMLED3–PK3–4K–N	66
					6	HOLOPHANE HMLED3–PK3–4K–N	66
P128	45	RUTHERFORD ROAD & E–S RAMP	9+935	40	1	HOLOPHANE HMLED3–PK3–4K–AW	0
					2	HOLOPHANE HMLED3–PK3–4K–AW	0
					3	HOLOPHANE HMLED3–PK3–4K–AW	0
					4	HOLOPHANE HMLED3–PK3–4K–AW	0
					5	HOLOPHANE HMLED3–PK3–4K–AW	0
					6	HOLOPHANE HMLED3–PK3–4K–AW	0
					7	HOLOPHANE HMLED3–PK3–4K–AW	0
					8	HOLOPHANE HMLED3–PK3–4K–AW	0
					9	HOLOPHANE HMLED3–PK3–4K–AW	0
					10	HOLOPHANE HMLED3–PK3–4K–AW	0

NOTE(S):

1. WHEN SHOWN WITHOUT *, OFFSET IS FROM CENTRE OR CONTROL LINE OF ROADWAY. WHEN SHOWN WITH *, OFFSET IS FROM EDGE OF TRAVELLED PAVEMENT (EP).
2. INSTALL SALVAGED 40m POLES FROM DESIGN PACKAGE 9. REFER TO ELECTRICAL NON–STANDARD DETAILS FOR POLE AND ANCHORAGE DETAILS. CONTRACTOR TO CONFIRM THAT THE BOLT CIRCLE DIAMETER OF SALVAGED POLE MATCHES THAT OF THE STANDARD DRAWINGS PRIOR TO CONSTRUCTION.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
B	19/01/25	50% SUBMISSION TO CA				
A	18/04/25	50% SUBMISSION TO CA				

SCALE :

N.T.S.

CONSULTANT

DESIGNED	NATALIA MAHABIR	N.M.	
DRAWN	KARMJIT GILL	K.G.	
CHECKED	LENNOX LUE	L.L.	
APPROVED LEAD ENGINEER	MARIO TEDESCO	M.T.	
APPROVED PROJ. MANAGER			
	NAME (PRINT)	INIT.	DATE

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TITLE

HWY 427 EXPANSION

PERMANENT CHARTS - 1

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	F	7	ELE	000	DWG	1004	B

HIGH MAST LIGHTING POLE SUMMARY

POLE NO.	POLE LENGTH (m)	LOCATION	STATION NO.	OFFSET (m) (NOTE 1)	LUMINAIRE NUMBER	LUMINAIRE TYPE AND DISTRIBUTION	HORIZONTAL ANGLE OF LUMINAIRE (DEGREES)
P129	40 (NOTE 2)	RUTHERFORD ROAD & W-N RAMP	9+870	20	1	HOLOPHANE HMLED3-PK3-4K-AW	0
					2	HOLOPHANE HMLED3-PK3-4K-AW	0
					3	HOLOPHANE HMLED3-PK3-4K-AW	0
					4	HOLOPHANE HMLED3-PK3-4K-AW	0
					5	HOLOPHANE HMLED3-PK3-4K-AW	0
					6	HOLOPHANE HMLED3-PK3-4K-AW	0
					7	HOLOPHANE HMLED3-PK3-4K-AW	0
					8	HOLOPHANE HMLED3-PK3-4K-AW	0
					9	HOLOPHANE HMLED3-PK3-4K-AW	0
P137	40 (NOTE 2)	HIGHWAY 427	14+442.9	0	1	HOLOPHANE HMLED3-PK3-4K-F	273
					2	HOLOPHANE HMLED3-PK3-4K-F	273
					3	HOLOPHANE HMLED3-PK3-4K-F	273
					4	HOLOPHANE HMLED3-PK3-4K-F	273
					5	HOLOPHANE HMLED3-PK3-4K-F	273
					6	HOLOPHANE HMLED3-PK3-4K-F	273
					7	HOLOPHANE HMLED3-PK3-4K-F	273
					8	HOLOPHANE HMLED3-PK3-4K-F	273
P138	40 (NOTE 2)	HIGHWAY 427	14+588.6	0	1	HOLOPHANE HMLED3-PK3-4K-AN	11
					2	HOLOPHANE HMLED3-PK3-4K-AN	56
					3	HOLOPHANE HMLED3-PK3-4K-AN	101
					4	HOLOPHANE HMLED3-PK3-4K-AN	146
					5	HOLOPHANE HMLED3-PK3-4K-AN	191
					6	HOLOPHANE HMLED3-PK3-4K-AN	236
					7	HOLOPHANE HMLED3-PK3-4K-AN	281
					8	HOLOPHANE HMLED3-PK3-4K-AN	326
P139	35	HIGHWAY 427	14+778	0	1	HOLOPHANE HMLED3-PK3-4K-AW	0
					2	HOLOPHANE HMLED3-PK3-4K-AW	0
					3	HOLOPHANE HMLED3-PK3-4K-AW	0
					4	HOLOPHANE HMLED3-PK3-4K-AW	0
					5	HOLOPHANE HMLED3-PK3-4K-AW	0
P140	30	HIGHWAY 427	14+940.6	0	1	HOLOPHANE HMLED3-PK3-4K-AW	0
					2	HOLOPHANE HMLED3-PK3-4K-AW	0
					3	HOLOPHANE HMLED3-PK3-4K-AW	0
					4	HOLOPHANE HMLED3-PK3-4K-AW	0
P141	30	HIGHWAY 427	15+088.9	0	1	HOLOPHANE HMLED3-PK3-4K-AW	0
					2	HOLOPHANE HMLED3-PK3-4K-AW	0
					3	HOLOPHANE HMLED3-PK3-4K-AW	0
					4	HOLOPHANE HMLED3-PK3-4K-AW	0
P142	30	HIGHWAY 427	15+245.2	0	1	HOLOPHANE HMLED3-PK3-4K-AW	0
					2	HOLOPHANE HMLED3-PK3-4K-AW	0
					3	HOLOPHANE HMLED3-PK3-4K-AW	0
					4	HOLOPHANE HMLED3-PK3-4K-AW	0

ROADWAY LIGHTING CHAMBER SUMMARY

CHAMBER NO.	LOCATION	STATION NO.	OFFSET (m) (NOTE 1)	STANDARD	CHAMBER COVER	REMARKS
MH181	RUTHERFORD ROAD & W-S RAMP	9+750	5.0*	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO EMBANKMENT SLOPE
MH182	HIGHWAY 427	14+023	2.5 RT	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	GROUND ROD (2), DRAIN TO DRAINAGE POCKET
MH183	RUTHERFORD ROAD & E-S RAMP	9+967	5.0*	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO EMBANKMENT SLOPE
MH184	HIGHWAY 427	14+317	4.0*	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO DRAINAGE POCKET
MH185	HIGHWAY 427	14+316	6.8 RT	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO DRAINAGE POCKET
MH186	RUTHERFORD ROAD & W-N RAMP	9+791.5	5.5*	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO DRAINAGE POCKET
MH187	RUTHERFORD ROAD & W-N RAMP	9+791.5	3.5*	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO EMBANKMENT SLOPE
MH188	RUTHERFORD ROAD & S-E/W RAMP	10+398	22.0 LT	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO DRAINAGE POCKET
MH189	HIGHWAY 427	14+316	3.5*	OPSD 2111.040 OPSD 2116.020	OPSD 401.030	DRAIN TO DRAINAGE POCKET
MH190	HIGHWAY 427	14+117.5	2.4*	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO EMBANKMENT SLOPE
HH206	HIGHWAY 427 NBL	13+013	3.2 RT	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH207	HIGHWAY 427 NBL	13+077	3.0 RT	OPSD 2112.040	OPSD 401.010	
HH208	HIGHWAY 427 NBL	13+154	3.2 RT	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH209	HIGHWAY 427 NBL	13+239	3.0 RT	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH210	HIGHWAY 427 SBL	13+313	4.6*	OPSD 2112.020	–	
HH211	HIGHWAY 427 NBL	13+320	3.0 RT	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH212	HIGHWAY 427 NBL	13+317	5.3*	OPSD 2112.020	–	
HH213	HIGHWAY 427 NBL	13+404	3.0 RT	OPSD 2112.040	OPSD 401.010	
HH214	HIGHWAY 427 NBL	13+488	1.5 RT	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH215	HIGHWAY 427 NBL	13+570	2.0 RT	OPSD 2112.040	OPSD 401.010	
HH216	HIGHWAY 427 NBL	13+647	2.0 RT	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH217	HIGHWAY 427 NBL	13+723	2.0 RT	OPSD 2112.040	OPSD 401.010	
HH218	HIGHWAY 427 NBL	13+799	2.0 RT	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH219	HIGHWAY 427	13+857	5.5 RT	OPSD 2112.040	OPSD 401.010	
HH220	HIGHWAY 427	13+925	5.5 RT	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH221	RUTHERFORD ROAD & W-S RAMP	10+004	3.5*	OPSD 2112.020	–	
HH222	RUTHERFORD ROAD & S-E/W RAMP	10+105	3.5*	OPSD 2112.020	–	
HH223	RUTHERFORD ROAD & W-S RAMP	9+750	5.0*	OPSD 2112.040	OPSD 401.010	
HH224	HIGHWAY 427	14+126	5.5 RT	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH225	HIGHWAY 427	14+212	5.5 RT	OPSD 2112.040	OPSD 401.010	

NOTE(S):

1. WHEN SHOWN WITHOUT *, OFFSET IS FROM CENTRE OR CONTROL LINE OF ROADWAY. WHEN SHOWN WITH *, OFFSET IS FROM EDGE OF TRAVELLED PAVEMENT (EP).
2. INSTALL SALVAGED 40m POLES FROM DESIGN PACKAGE 9. REFER TO ELECTRICAL NON-STANDARD DETAILS FOR POLE AND ANCHORAGE DETAILS. CONTRACTOR TO CONFIRM THAT THE BOLT CIRCLE DIAMETER OF SALVAGED POLE MATCHES THAT OF THE STANDARD DRAWINGS PRIOR TO CONSTRUCTION.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
B	19/01/25	50% SUBMISSION TO CA				
A	18/04/25	50% SUBMISSION TO CA				

SCALE : N.T.S.

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR	N.M.	
DRAWN	KARMJIT GILL	K.G.	
CHECKED	LENNOX LUE	L.L.	
APPROVED LEAD ENGINEER	MARIO TEDESCO	M.T.	
APPROVED PROJ. MANAGER			

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TITLE

HWY 427 EXPANSION

PERMANENT CHARTS - 2

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	F	7	ELE	000	DWG	1005	B

ROADWAY LIGHTING CHAMBER SUMMARY

CHAMBER NO.	LOCATION	STATION NO.	OFFSET (m) (NOTE 1)	STANDARD	CHAMBER COVER	REMARKS
HH226	HIGHWAY 427	14+270	5.5 RT	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH227	RUTHERFORD ROAD & W–N RAMP	9+959	3.7*	OPSD 2112.020	–	
HH228	RUTHERFORD ROAD & E–S RAMP	10+010	5.0*	OPSD 2112.020	–	
MH191	RUTHERFORD ROAD & W–N RAMP	9+976	4.0*	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO EMBANKMENT SLOPE
MH192	RUTHERFORD ROAD & W–N RAMP	10+370	3.5*	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO EMBANKMENT SLOPE
HH230	RUTHERFORD ROAD & E–N RAMP	9+658	5.0*	OPSD 2112.040	OPSD 401.010	
MH193	RUTHERFORD ROAD & E–N RAMP	9+750	5.0*	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO EMBANKMENT SLOPE
HH233	HIGHWAY 427	14+423	5.5 RT	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH234	HIGHWAY 427	14+506	5.5 RT	OPSD 2112.040	OPSD 401.010	
HH235	HIGHWAY 427	14+589	5.5 RT	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH236	RUTHERFORD ROAD & N–E/W RAMP	10+111	3.5*	OPSD 2112.020	–	
HH237	RUTHERFORD ROAD & E–N RAMP	9+875	3.5*	OPSD 2112.020	–	
HH238	HIGHWAY 427	14+678	5.5*	OPSD 2112.040	OPSD 401.010	
HH239	HIGHWAY 427	14+778	5.5*	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH240	HIGHWAY 427	14+851	5.5*	OPSD 2112.040	OPSD 401.010	
HH241	HIGHWAY 427	14+941	5.5*	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH242	HIGHWAY 427	15+012	5.5*	OPSD 2112.040	OPSD 401.010	
HH243	HIGHWAY 427	15+089	5.5*	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH244	HIGHWAY 427	15+167	6.0 RT	OPSD 2112.040	OPSD 401.010	
HH245	HIGHWAY 427	12+246	7.5 RT	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH246	HIGHWAY 427	15+335	9.5 RT	OPSD 2112.040	OPSD 401.010	
HH247	HIGHWAY 427	15+252	4.0*	OPSD 2112.020	–	
HH248	HIGHWAY 427	15+243	4.0*	OPSD 2112.020	–	
HH249	RUTHERFORD ROAD & S–E/W RAMP	10+370	2.0*	OPSD 2112.040	OPSD 401.010	
HH250	RUTHERFORD ROAD & S–E/W RAMP	10+370	3.5*	OPSD 2112.040	OPSD 401.010	

LIGHTING POLE SUMMARY

POLE NO.	LOCATION	STATION	OFFSET (m) (NOTE 1)	POLE TYPE	LENGTH (m)	CONCRETE FOOTING	FRANGIBLE BASE	LUMINAIRE PHOTOMETRIC AMERICAN ELECTRIC	WATTAGE (W)	ARM LENGTH (m)	REMARKS
P127	RUTHERFORD RD. W–S RAMP	9+644	2.5*	STEEL	12	OPSD 2200.010	OPSD 2428.01	ATB2_60BLED13_R2	273	2.4	–
P132	RUTHERFORD RD. E–N RAMP	9+480	5.2*	STEEL	6	OPSD 2200.010	OPSD 2428.01	XNV2–AF–02–LED–U–T3R	111	2.4	GROUND ROD
P133	RUTHERFORD RD. E–N RAMP	9+531.5	5.2*	STEEL	6	OPSD 2200.010	OPSD 2428.01	XNV2–AF–02–LED–U–T3R	111	2.4	–
P134	RUTHERFORD RD. E–N RAMP	9+688	4.2*	STEEL	12	OPSD 2200.010	OPSD 2428.01	ATB2_60BLED13_R2	273	2.4	–
P136	RUTHERFORD RD. S–EW RAMP	10+403	5.4*	STEEL	12	OPSD 2200.010	–	ATB2_60BLED13_R2	273	2.4	GROUND ROD
P143	RUTHERFORD RD. W–S RAMP	6+585	5.3*	STEEL	12	OPSD 2200.010	OPSD 2428.01	ATB2_60BLED13_R2	273	2.4	GROUND ROD

NOTE(S):

1. WHEN SHOWN WITHOUT *, OFFSET IS FROM CENTRE OR CONTROL LINE OF ROADWAY. WHEN SHOWN WITH *, OFFSET IS FROM EDGE OF TRAVELLED PAVEMENT (EP).
2. REFER TO ELECTRICAL DRAWINGS FOR TYPE OF TRAFFIC COUNT, VEHICLE CLASSIFICATION STATION AND DETECTOR LOOP ARRANGEMENT

TRAFFIC COUNT STATION, VEHICLE CLASSIFICATION SUMMARY

STATION ID	LOCATION	STATION NO.	DETECTOR ID	SIZE (m)	TURNS	INDUCTANCE (μH)	REMARKS
TCS27	HIGHWAY 427 SBL	13+312	LD301	2 X 2	3	79	NOTE 2
			LD302	2 X 2	4	131	NOTE 2
			LD303	2 X 2	3	79	NOTE 2
			LD304	2 X 2	4	131	NOTE 2
			LD305	2 X 2	3	79	NOTE 2
			LD306	2 X 2	4	131	NOTE 2
			LD307	2 X 2	3	79	NOTE 2
			LD308	2 X 2	4	131	NOTE 2
TCS28	HIGHWAY 427 NBL	13+318	LD309	2 X 2	4	131	NOTE 2
			LD310	2 X 2	3	79	NOTE 2
			LD311	2 X 2	4	131	NOTE 2
			LD312	2 X 2	3	79	NOTE 2
			LD313	2 X 2	4	131	NOTE 2
			LD314	2 X 2	3	79	NOTE 2
			LD315	2 X 2	4	131	NOTE 2
			LD316	2 X 2	3	79	NOTE 2
TCS29	RUTHERFORD ROAD & W–S RAMP	10+005	LD317	3 X 2	4	164	NOTE 2
TCS30	RUTHERFORD ROAD & S–E/W RAMP	10+105	LD318	2 X 2	4	131	NOTE 2
			LD319	2 X 2	3	79	NOTE 2
TCS31	RUTHERFORD ROAD & E–S RAMP	10+011	LD320	3 X 2	4	164	NOTE 2
TCS32	RUTHERFORD ROAD & W–N RAMP	9+960	LD321	3 X 2	4	164	NOTE 2
TCS33	RUTHERFORD ROAD & N–E/W RAMP	10+112	LD322	2 X 2	3	79	NOTE 2
			LD323	2 X 2	4	131	NOTE 2
TCS34	RUTHERFORD ROAD & E–N RAMP	9+849	LD324	3 X 2	4	164	NOTE 2
TCS35	HIGHWAY 427	15+251	LD325	2 X 2	4	131	NOTE 2
			LD326	2 X 2	3	79	NOTE 2
			LD327	2 X 2	4	131	NOTE 2
			LD329	2 X 2	4	131	NOTE 2
			LD330	2 X 2	3	79	NOTE 2
			LD331	2 X 2	4	131	NOTE 2
TCS36	HIGHWAY 427	15+244	LD334	2 X 2	4	131	NOTE 2
			LD335	2 X 2	3	79	NOTE 2
			LD336	2 X 2	4	131	NOTE 2
			LD338	2 X 2	4	131	NOTE 2
			LD339	2 X 2	3	79	NOTE 2
			LD340	2 X 2	4	131	NOTE 2

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
B	19/01/25	50% SUBMISSION TO CA				
A	18/04/25	50% SUBMISSION TO CA				

SCALE : N.T.S.

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR	N.M.	
DRAWN	KARMJIT GILL	K.G.	
CHECKED	LENNOX LUE	L.L.	
APPROVED LEAD ENGINEER	MARIO TEDESCO	M.T.	
APPROVED PROJ. MANAGER			

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TITLE

HWY 427 EXPANSION

PERMANENT CHARTS - 3

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	F	7	ELE	000	DWG	1006	B

TRAFFIC SIGNAL POLE SUMMARY

POLE ID	LOCATION	STATION	OFFSET (m) (NOTE 1)	POLE TYPE	POLE HEIGHT (m)	CONCRETE FOOTING	TYPE	TRAFFIC SIGNAL HEADS			ROADWAY LUMINAIRES		REMARKS
								MOUNTING HEIGHT (m)	MAST ARM LENGTH (m)	LUMINAIRE PHOTOMETRIC	WATTAGE (W)	ARM LENGTH (m)	
TS50	RUTHERFORD ROAD	9+809	0	SECTIONAL STEEL	7	OPSD 2200.01	TYPE 1	5	1.2	–	–	–	
TS51	RUTHERFORD ROAD & W–S RAMP	9+799.5	1.2*	HEAVY CLASS SECTIONAL STEEL	10.5	MTOD 2200.050	TYPE 1	5	7.6	ATB2_40BLEDE10_R3	143	2.4	
TS52	RUTHERFORD ROAD & W–S RAMP	9+792.5	0.9*	SECTIONAL STEEL	7	OPSD 2200.01	OVERSIZE HIGHWAY	5	3	–	–	–	
TS53	RUTHERFORD ROAD & W–S RAMP	9+779.5	3.8*	SECTIONAL STEEL	7	OPSD 2200.01	OVERSIZE HIGHWAY	5	3	–	–	–	
TS54	RUTHERFORD ROAD & W–S RAMP	9+770	3.0*	SECTIONAL STEEL	8.7	–	–	–	–	–	–	–	POWER SUPPLY, GROUND ROD (4), DIRECT BURIED
TS55	RUTHERFORD ROAD	9+775	0	SECTIONAL STEEL	7	OPSD 2200.01	TYPE 1	5	1.2	–	–	–	
TS56	RUTHERFORD ROAD	9+766	3.2*	HEAVY CLASS SECTIONAL STEEL	10.5	MTOD 2200.050	TYPE 1	5	6.7	–	–	–	
TS60	RUTHERFORD ROAD	10+259	0	SECTIONAL STEEL	7	OPSD 2200.01	TYPE 1	5	1.2	–	–	–	
TS61	RUTHERFORD ROAD	10+268	3.0*	HEAVY CLASS SECTIONAL STEEL	10.5	MTOD 2200.050	TYPE 1	5	7.6	–	–	–	
TS62	RUTHERFORD ROAD	10+224	0	SECTIONAL STEEL	7	OPSD 2200.01	TYPE 1	5	1.2	–	–	–	
TS63	RUTHERFORD ROAD & E–N RAMP	10+232.5	3.0*	HEAVY CLASS SECTIONAL STEEL	10.5	MTOD 2200.050	TYPE 1	5	6.7	ATB2_40BLEDE10_R3	143	2.4	
TS64	RUTHERFORD ROAD & E–N RAMP	10+440.5	3.0*	SECTIONAL STEEL	7	OPSD 2200.01	OVERSIZE HIGHWAY	5	3.7	–	–	–	
TS65	RUTHERFORD ROAD & E–N RAMP	10+454.5	3.0*	SECTIONAL STEEL	7	OPSD 2200.01	OVERSIZE HIGHWAY	5	2.4	–	–	–	
TS66	RUTHERFORD ROAD	10+270.5	6.6*	SECTIONAL STEEL	8.7	–	–	–	–	–	–	–	POWER SUPPLY, GROUND ROD (4), DIRECT BURIED
EHP8	RUTHERFORD ROAD	9+761	EXISTING	EXISTING	EXISTING	–	–	–	–	ATB2_40BLEDE10_R3	143	2.4	
EHP10	RUTHERFORD ROAD	10+283	EXISTING	EXISTING	EXISTING	–	–	–	–	ATB2_40BLEDE10_R3	143	2.4	

TRAFFIC SIGNAL CONTROLLER CABINET SUMMARY

EQUIPMENT ID	LOCATION	STATION	OFFSET(m) (NOTE 1)	TYPE	CONCRETE PAD	REMARKS
TC6	RUTHERFORD RD & COMMUTER PARKING LOT	9+812.5	7.0*	YORK REGION STANDARD CONTROLLER	YORK REGION STD. E–3.09	–
TC7	RUTHERFORD RD & N–E/W RAMP TERMINAL	10+228	5.0*	YORK REGION STANDARD CONTROLLER	YORK REGION STD. E–3.09	–

TRAFFIC SIGNAL EQUIPMENT SUMMARY

CHAMBER ID	LOCATION	STATION	OFFSET (m) (NOTE 1)	STANDARD	REMARKS
HH50	RUTHERFORD ROAD	9+894	3.0*	OPSD 2112.040	
HH51	RUTHERFORD ROAD	9+690	3.7*	OPSD 2112.040	
HH60	RUTHERFORD ROAD	10+345	3.0*	OPSD 2112.040	
MH60	RUTHERFORD ROAD	9+801	4.0*	OPSD 2111.040 OPSD 2116.020	GROUND ROD, DRAIN TO DRAINAGE POCKET
HH61	RUTHERFORD ROAD	10+137	3.4*	OPSD 2112.040	
MH61	RUTHERFORD ROAD	9+811	0	OPSD 2111.020 OPSD 2116.020	DRAIN TO DRAINAGE POCKET
MH62	RUTHERFORD ROAD & W–S RAMP	9+812.25	3.9*	OPSD 2111.020 OPSD 2116.020	GROUND ROD, DRAIN TO EMBANKMENT SLOPE
MH63	RUTHERFORD ROAD & W–S RAMP	9+774.7	3.0*	OPSD 2111.020 OPSD 2116.020	GROUND ROD, DRAIN TO EMBANKMENT SLOPE
MH64	RUTHERFORD ROAD	9+773	0	OPSD 2111.020 OPSD 2116.020	DRAIN TO DRAINAGE POCKET
MH65	RUTHERFORD ROAD	9+772	4.3*	OPSD 2111.020 OPSD 2116.020	GROUND ROD, DRAIN TO DRAINAGE POCKET
MH70	RUTHERFORD ROAD & E–N RAMP	10+261.5	3.5*	OPSD 2111.020 OPSD 2116.020	GROUND ROD, DRAIN TO EMBANKMENT SLOPE
MH71	RUTHERFORD ROAD	10+261.5	0	OPSD 2111.020 OPSD 2116.020	DRAIN TO DRAINAGE POCKET
MH72	RUTHERFORD ROAD & S–E/W RAMP	10+263.8	3.8*	OPSD 2111.020 OPSD 2116.020	GROUND ROD, DRAIN TO DRAINAGE POCKET
MH73	RUTHERFORD ROAD	10+220.5	3.6*	OPSD 2111.020 OPSD 2116.020	GROUND ROD, DRAIN TO EMBANKMENT SLOPE
MH74	RUTHERFORD ROAD	10+220.5	0	OPSD 2111.020 OPSD 2116.020	DRAIN TO DRAINAGE POCKET
MH75	RUTHERFORD ROAD & E–N RAMP	10+219	3.5*	OPSD 2111.020 OPSD 2116.020	GROUND ROD, DRAIN TO EMBANKMENT SLOPE

DETECTOR LOOP SUMMARY

ID	LOCATION	TYPE	SIZE (m)	TURNS	INDUCTANCE (μH)	REMARKS
LD60	RUTHERFORD ROAD	SIMPLE	1.8 X 1.8	4	239	
LD61	RUTHERFORD ROAD	SIMPLE	1.8 X 1.8	4	239	
LD62	RUTHERFORD ROAD	SIMPLE	1.8 X 1.8	4	239	
LD63	RUTHERFORD ROAD	SIMPLE	1.8 X 1.8	4	239	
LD64	RUTHERFORD ROAD & N–E/W RAMP	SIMPLE	1.8 X 13	4	291	
LD65	RUTHERFORD ROAD & N–E/W RAMP	SIMPLE	1.8 X 13	4	291	
LD66	RUTHERFORD ROAD & N–E/W RAMP	SIMPLE	1.8 X 13	4	291	
LD67	RUTHERFORD ROAD & N–E/W RAMP	SIMPLE	1.8 X 5.3	2	70	
LD70	RUTHERFORD ROAD	SIMPLE	1.8 X 1.8	4	239	
LD71	RUTHERFORD ROAD	SIMPLE	1.8 X 1.8	4	239	
LD72	RUTHERFORD ROAD & S–E/W RAMP	SIMPLE	1.8 X 13	4	291	
LD73	RUTHERFORD ROAD & S–E/W RAMP	SIMPLE	1.8 X 13	4	291	
LD74	RUTHERFORD ROAD & S–E/W RAMP	SIMPLE	1.8 X 13	4	291	
LD75	RUTHERFORD ROAD	SIMPLE	1.8 X 1.8	4	239	
LD76	RUTHERFORD ROAD	SIMPLE	1.8 X 1.8	4	239	
LD77	RUTHERFORD ROAD & S–E/W RAMP	SIMPLE	1.8 X 5.3	3	140	

NOTE(S):

1. WHEN SHOWN WITHOUT *, OFFSET IS FROM CENTRE OR CONTROL LINE OF ROADWAY. WHEN SHOWN WITH *, OFFSET IS FROM EDGE OF TRAVELLED PAVEMENT (EP).

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
B	19/01/25	50% SUBMISSION TO CA				
A	18/04/25	50% SUBMISSION TO CA				

SCALE : N.T.S.

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR	N.M.	
DRAWN	KARMJIT GILL	K.G.	
CHECKED	LENNOX LUE	L.L.	
APPROVED LEAD ENGINEER	MARIO TEDESCO	M.T.	
APPROVED PROJ. MANAGER			

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HWY 427 EXPANSION

PERMANENT CHARTS - 4

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	F	7	ELE	000	DWG	1007	B

HIGH MAST LIGHTING POLE SUMMARY							
POLE NO.	POLE HEIGHT (m)	LOCATION	STATION NO.	OFFSET (m) (NOTE 1)	LUMINAIRE NUMBER	LUMINAIRE TYPE AND DISTRIBUTION	HORIZONTAL ANGLE OF LUMINAIRE (DEGREES)
P143	40	HIGHWAY 427 MEDIAN	15+427.6	0	1	HOLOPHANE HMLED3–PK3–4K–AW	0
					2	HOLOPHANE HMLED3–PK3–4K–AW	0
					3	HOLOPHANE HMLED3–PK3–4K–AW	0
					4	HOLOPHANE HMLED3–PK3–4K–AW	0
					5	HOLOPHANE HMLED3–PK3–4K–AW	0
					6	HOLOPHANE HMLED3–PK3–4K–AW	0
P144	40	HIGHWAY 427 MEDIAN	15+615.6	0	1	HOLOPHANE HMLED3–PK3–4K–AW	0
					2	HOLOPHANE HMLED3–PK3–4K–AW	0
					3	HOLOPHANE HMLED3–PK3–4K–AW	0
					4	HOLOPHANE HMLED3–PK3–4K–AW	0
					5	HOLOPHANE HMLED3–PK3–4K–AW	0
					6	HOLOPHANE HMLED3–PK3–4K–AW	0
P145	35	HIGHWAY 427 MEDIAN	15+792.7	0	1	HOLOPHANE HMLED3–PK3–4K–AW	0
					2	HOLOPHANE HMLED3–PK3–4K–AW	0
					3	HOLOPHANE HMLED3–PK3–4K–AW	0
					4	HOLOPHANE HMLED3–PK3–4K–AW	0
					5	HOLOPHANE HMLED3–PK3–4K–AW	0
					6	HOLOPHANE HMLED3–PK3–4K–AW	0
P146	40	HIGHWAY 427 MEDIAN	15+950	0	1	HOLOPHANE HMLED3–PK3–4K–AW	0
					2	HOLOPHANE HMLED3–PK3–4K–AW	0
					3	HOLOPHANE HMLED3–PK3–4K–AW	0
					4	HOLOPHANE HMLED3–PK3–4K–AW	0
					5	HOLOPHANE HMLED3–PK3–4K–AW	0
					6	HOLOPHANE HMLED3–PK3–4K–AW	0
P147	40	HIGHWAY 427 MEDIAN	16+092.9	0	1	HOLOPHANE HMLED3–PK3–4K–AW	0
					2	HOLOPHANE HMLED3–PK3–4K–AW	0
					3	HOLOPHANE HMLED3–PK3–4K–AW	0
					4	HOLOPHANE HMLED3–PK3–4K–AW	0
					5	HOLOPHANE HMLED3–PK3–4K–AW	0
					6	HOLOPHANE HMLED3–PK3–4K–AW	0

NOTE(S):

1. WHEN SHOWN WITHOUT *, OFFSET IS FROM CENTRE OR CONTROL LINE OF ROADWAY. WHEN SHOWN WITH *, OFFSET IS FROM EDGE OF TRAVELED PAVEMENT (EP).

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

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HWY 427 EXPANSION

PERMANENT CHARTS - 1

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	8	ELE	000	DWG	1005	A

HIGH MAST LIGHTING POLE SUMMARY							
POLE NO.	POLE HEIGHT (m)	LOCATION	STATION NO.	OFFSET (m) (NOTE 1)	LUMINAIRE NUMBER	LUMINAIRE TYPE AND DISTRIBUTION	HORIZONTAL ANGLE OF LUMINAIRE (DEGREES)
P148	40	HIGHWAY 427 MEDIAN	16+283	0	1	HOLOPHANE HMLED3-PK3-4K-AW	0
					2	HOLOPHANE HMLED3-PK3-4K-AW	0
					3	HOLOPHANE HMLED3-PK3-4K-AW	0
					4	HOLOPHANE HMLED3-PK3-4K-AW	0
					5	HOLOPHANE HMLED3-PK3-4K-AW	0
					6	HOLOPHANE HMLED3-PK3-4K-AW	0
					7	HOLOPHANE HMLED3-PK3-4K-AW	0
					8	HOLOPHANE HMLED3-PK3-4K-AW	0
P149	40	HIGHWAY 427 427 SBL	16+500.7	0	1	HOLOPHANE HMLED3-PK3-4K-M	225
					2	HOLOPHANE HMLED3-PK3-4K-M	225
					3	HOLOPHANE HMLED3-PK3-4K-M	225
					4	HOLOPHANE HMLED3-PK3-4K-M	225
					5	HOLOPHANE HMLED3-PK3-4K-N	56
					6	HOLOPHANE HMLED3-PK3-4K-N	56
					7	HOLOPHANE HMLED3-PK3-4K-N	56
					8	HOLOPHANE HMLED3-PK3-4K-N	56
P151	35	MAJOR MACKENZIE & S-W RAMP	16+899.3	35	1	HOLOPHANE HMLED3-PK3-4K-AW	0
					2	HOLOPHANE HMLED3-PK3-4K-AW	0
					3	HOLOPHANE HMLED3-PK3-4K-AW	0
					4	HOLOPHANE HMLED3-PK3-4K-AW	0
					5	HOLOPHANE HMLED3-PK3-4K-AW	0
					6	HOLOPHANE HMLED3-PK3-4K-AW	0
P152	40	MAJOR MACKENZIE & E-S RAMP	9+399.5	54	1	HOLOPHANE HMLED3-PK3-4K-AW	0
					2	HOLOPHANE HMLED3-PK3-4K-AW	0
					3	HOLOPHANE HMLED3-PK3-4K-AW	0
					4	HOLOPHANE HMLED3-PK3-4K-AW	0
					5	HOLOPHANE HMLED3-PK3-4K-AW	0
					6	HOLOPHANE HMLED3-PK3-4K-AW	0
					7	HOLOPHANE HMLED3-PK3-4K-AW	0
					8	HOLOPHANE HMLED3-PK3-4K-AW	0
					9	HOLOPHANE HMLED3-PK3-4K-AW	0
					10	HOLOPHANE HMLED3-PK3-4K-AW	0

NOTE(S):

1. WHEN SHOWN WITHOUT *, OFFSET IS FROM CENTRE OR CONTROL LINE OF ROADWAY. WHEN SHOWN WITH *, OFFSET IS FROM EDGE OF TRAVELED PAVEMENT (EP).

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

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HWY 427 EXPANSION

PERMANENT CHARTS - 2

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	8	ELE	000	DWG	1006	A

ROADWAY LIGHTING CHAMBER SUMMARY						
CHAMBER NO.	LOCATION	STATION NO.	OFFSET (m) (NOTE 1)	STANDARD	CHAMBER COVER	REMARKS
MH190	MAJOR MACKENZIE & E–S RAMP	9+755	4.0*	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO EMBANKMENT SLOPE
MH191	HIGHWAY 427	16+344.5	3.0*	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO DRAINAGE POCKET
MH192	MAJOR MACKENZIE & S–E/W RAMP	10+385	26	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO DRAINAGE POCKET
MH193	MAJOR MACKENZIE & S–E/W RAMP	10+385	4.6*	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO EMBANKMENT SLOPE
MH194	MAJOR MACKENZIE & S–E/W RAMP	10+385	3.0*	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO EMBANKMENT SLOPE
MH195	MAJOR MACKENZIE & S–E/W RAMP	10+048.5	1.4 BGR	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	GROUND ROD, DRAIN TO EMBANKMENT SLOPE
MH196	HIGHWAY 427	16+109	31.0 RT	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO DRAINAGE POCKET
MH197	HIGHWAY 427	16+109	14.0 RT	OPSD 2111.040 OPSD 2116.020	OPSD 401.010	DRAIN TO DRAINAGE POCKET
HH246	HIGHWAY 427	15+345	5.5*	OPSD 2112.040	OPSD 401.010	
HH249	HIGHWAY 427	15+428	5.0*	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH250	HIGHWAY 427	15+470	3.0*	OPSD 2112.040	OPSD 401.010	
HH251	HIGHWAY 427	15+590	3.0*	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH252	HIGHWAY 427	15+704	3.5*	OPSD 2112.040	OPSD 401.010	
HH253	HIGHWAY 427	15+793	3.5*	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH254	HIGHWAY 427	15+866	3.5*	OPSD 2112.040	OPSD 401.010	
HH255	HIGHWAY 427	15+960	3.5*	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH256	HIGHWAY 427	16+073	3.0*	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH257	HIGHWAY 427	16+180	2.5*	OPSD 2112.040	OPSD 401.010	
HH258	HIGHWAY 427	16+283	2.5*	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH259	HIGHWAY 427	16+349	2.5*	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH260	MAJOR MACKENZIE & S–E/W RAMP	10+057	5.5*	OPSD 2112.020	–	
HH261	HIGHWAY 427	16+175	5.5*	OPSD 2112.020	–	
HH262	MAJOR MACKENZIE & E–S RAMP	9+850	5.5*	OPSD 2112.020	–	
HH263	MAJOR MACKENZIE & W–S RAMP	9+845	5.5*	OPSD 2112.020	–	
HH264	MAJOR MACKENZIE & S–EW RAMP	10+072	1.6 BGR	OPSD 2112.040	OPSD 401.010	
HH265	MAJOR MACKENZIE & S–EW RAMP	10+152.5	1.6 BGR	OPSD 2112.040	OPSD 401.010	
HH266	MAJOR MACKENZIE & E–S RAMP	9+513	3.0*	OPSD 2112.040	OPSD 401.010	
HH267	MAJOR MACKENZIE & E–S RAMP	9+571	4.5*	OPSD 2112.040	OPSD 401.010	
HH268	HIGHWAY 427	16+925	3.5*	OPSD 2112.040	OPSD 401.010	
HH269	HIGHWAY 427	16+925	2.0*	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH270	MAJOR MACKENZIE & E–S RAMP	9+263	3.0*	OPSD 2112.040	OPSD 401.010	
HH271	MAJOR MACKENZIE & E–S RAMP	9+348	3.0*	OPSD 2112.040	OPSD 401.010	
HH272	MAJOR MACKENZIE & E–S RAMP	9+461	3.0*	OPSD 2112.040	OPSD 401.010	GROUND ROD (2)
HH273	HIGHWAY 427	17+003	3.5*	OPSD 2112.040	OPSD 401.010	
HH274	MAJOR MACKENZIE & S–E/W RAMP	10+390	3.0*	OPSD 2112.040	OPSD 401.010	
HH275	MAJOR MACKENZIE & S–EW RAMP	10+234.5	1.6 BGR	OPSD 2112.040	OPSD 401.010	
HH276	MAJOR MACKENZIE & S–EW RAMP	10+316	3.0*	OPSD 2112.040	OPSD 401.010	

TRAFFIC COUNT STATION, VEHICLE CLASSIFICATION SUMMARY							
STATION ID	LOCATION	STATION NO.	DETECTOR ID	SIZE (m)	TURNS	INDUCTANCE (μH)	REMARKS
TCS37	MAJOR MACKENZIE & S–E/W RAMP	10+058	LD341	2 X 2	4	131	NOTE 3
			LD342	2 X 2	3	79	NOTE 3
TCS38	HIGHWAY 427	16+175	LD343	2 X 2	4	131	NOTE 3
			LD344	2 X 2	3	79	NOTE 3
TCS39	MAJOR MACKENZIE & E–S RAMP	9+851	LD345	3 X 2	4	164	NOTE 3
TCS40	MAJOR MACKENZIE & W–S RAMP	9+846	LD346	3 X 2	4	164	NOTE 3

LIGHTING POLE SUMMARY											
POLE NO.	LOCATION	STATION	OFFSET (m) (NOTE 1)	POLE TYPE	LENGTH (m)	CONCRETE FOOTING	FRANGIBLE BASE	LUMINAIRE PHOTOMETRIC AMERICAN ELECTRIC	WATTAGE (W)	ARM LENGTH (m)	REMARKS
P156	MAJOR MACKENZIE. S–W RAMP	17+138.5	5.2*	STEEL	7.5	OPSD 2200.010	OPSD 2428.01	ATB2_40BLED10_R3	143	0.6	GROUND ROD
P157	MAJOR MACKENZIE. S–W RAMP	17+108	5.2*	STEEL	7.5	OPSD 2200.010	OPSD 2428.01	ATB2_40BLED10_R3	143	0.6	–
P158	MAJOR MACKENZIE. S–W RAMP	17+078	5.2*	STEEL	7.5	OPSD 2200.010	OPSD 2428.01	ATB2_40BLED10_R3	143	0.6	–
P159	MAJOR MACKENZIE. S–W RAMP	17+035	5.2*	STEEL	12	OPSD 2200.010	OPSD 2428.01	ATB2_60BLED13_R2	273	2.4	GROUND ROD
P162	MAJOR MACKENZIE. S–EW RAMP	10+277.5	1.6 BGR	STEEL	12	OPSD 2200.010	OPSD 2428.01	ATB2_60BLED13_R2	273	2.4	–
P163	MAJOR MACKENZIE. S–EW RAMP	10+337.5	5.2*	STEEL	12	OPSD 2200.010	OPSD 2428.01	ATB2_60BLED13_R2	273	2.4	–
P164	MAJOR MACKENZIE. S–EW RAMP	10+390.5	5.2*	STEEL	12	OPSD 2200.010	OPSD 2428.01	ATB2_60BLED13_R2	273	2.4	GROUND ROD

NOTE(S):

1. WHEN SHOWN WITHOUT *, OFFSET IS FROM CENTRE OR CONTROL LINE OF ROADWAY. WHEN SHOWN WITH *, OFFSET IS FROM EDGE OF TRAVELED PAVEMENT (EP). WHEN SHOWN WITH BGR, OFFSET IS FROM BACK OF GUIDERAIL CHANNEL.
2. CUSTOM LUMINAIRE BRACKET.
3. REFER TO ELECTRICAL DRAWINGS FOR TYPE OF TRAFFIC COUNT VEHICLE CLASSIFICATION STATION AND DETECTOR LOOP LAYOUT.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

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TITLE

HWY 427 EXPANSION

PERMANENT CHARTS - 3

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	8	ELE	000	DWG	1007	A

LIGHTING POLE SUMMARY

POLE NO.	LOCATION	STATION	OFFSET (m) (Note 1)	POLE TYPE	LENGTH (M)	CONCRETE FOOTING	LUMINAIRE PHOTOMETRIC	WATTAGE (W)	ARM LENGTH (M)	REMARKS
P301	MAJOR MACKENZIE DRIVE	9+008.5	18.0	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	GROUND ROD
P302	MAJOR MACKENZIE DRIVE	9+052.5	13.0	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P303	MAJOR MACKENZIE DRIVE	9+107.5	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P304	MAJOR MACKENZIE DRIVE	9+162.75	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P305	MAJOR MACKENZIE DRIVE	9+218.0	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P306	MAJOR MACKENZIE DRIVE	9+273.0	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	GROUND ROD
P307	MAJOR MACKENZIE DRIVE	9+328.25	13.	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P308	MAJOR MACKENZIE DRIVE	9+383.5	13.9	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P309	MAJOR MACKENZIE DRIVE	9+437.5	17.5	STEEL	7.5	MOUNTED ON STRUCTURE	GPLM-180W98LED4K-ES-LE4	201	1.2	LUMINAIRE ATTACHMENT HEIGHT = 7.7m
P310	MAJOR MACKENZIE DRIVE	9+570.5	13.6	CONCRETE VAUGHAN STD. DWG L-7	9.9	DIRECT BURIED	GPLM-180W98LED4K-ES-LE4	201	1.2	GROUND ROD, LUMINAIRE ATTACHMENT HEIGHT = 7.7m
P311	MAJOR MACKENZIE DRIVE	9+591.5	13.5	CONCRETE VAUGHAN STD. DWG L-7	9.9	DIRECT BURIED	GPLM-180W98LED4K-ES-LE4	201	1.2	LUMINAIRE ATTACHMENT HEIGHT = 7.7m
P312	MAJOR MACKENZIE DRIVE	9+639.0	13.4	CONCRETE VAUGHAN STD. DWG L-7	9.9	DIRECT BURIED	GPLM-180W98LED4K-ES-LE4	201	1.2	LUMINAIRE ATTACHMENT HEIGHT = 7.7m
P313	MAJOR MACKENZIE DRIVE	9+691.25	13.4	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P314	MAJOR MACKENZIE DRIVE	9+742.25	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	GROUND ROD
P315	MAJOR MACKENZIE DRIVE	9+793.5	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P316	MAJOR MACKENZIE DRIVE	9+847.5	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P317	MAJOR MACKENZIE DRIVE	9+892.5	21.0	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P318	MAJOR MACKENZIE DRIVE	9+940.0	14.0	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P319	MAJOR MACKENZIE DRIVE	9+986.0	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	GROUND ROD
P320	MAJOR MACKENZIE DRIVE	10+045.5	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	GROUND ROD
P321	MAJOR MACKENZIE DRIVE	10+099	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P322	MAJOR MACKENZIE DRIVE	10+152.5	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P323	MAJOR MACKENZIE DRIVE	10+205.5	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P324	MAJOR MACKENZIE DRIVE	10+309	13.4	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	GROUND ROD
P325	MAJOR MACKENZIE DRIVE	10+364	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P326	MAJOR MACKENZIE DRIVE	10+419	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P327	MAJOR MACKENZIE DRIVE	10+474	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P328	MAJOR MACKENZIE DRIVE	10+526	14.0	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	

NOTE(S):

1. WHEN SHOWN WITHOUT *, OFFSET IS FROM CENTRE OR CONTROL LINE OF ROADWAY. WHEN SHOWN WITH *, OFFSET IS FROM EDGE OF TRAVELED PAVEMENT (EP).

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD. ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

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TITLE

HWY 427 EXPANSION

PERMANENT CHARTS - 4

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	8	ELE	000	DWG	1008	A

LIGHTING POLE SUMMARY

POLE NO.	LOCATION	STATION	OFFSET (m) (Note 1)	POLE TYPE	LENGTH (M)	CONCRETE FOOTING	LUMINAIRE PHOTOMETRIC	WATTAGE (W)	ARM LENGTH (M)	REMARKS
P329	MAJOR MACKENZIE DRIVE	9+007.5	14.3	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	GROUND ROD
P330	MAJOR MACKENZIE DRIVE	9+062.0	13.8	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P331	MAJOR MACKENZIE DRIVE	9+116.5	13.4	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P332	MAJOR MACKENZIE DRIVE	9+170.75	13.4	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P333	MAJOR MACKENZIE DRIVE	9+230.5	13.4	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	GROUND ROD
P334	MAJOR MACKENZIE DRIVE	9+235.25	13.4	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P335	MAJOR MACKENZIE DRIVE	9+340.25	13.4	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
EHP301	MAJOR MACKENZIE DRIVE	9+394.5	19.2	HYDRO POLE P54538	NOTE 2	–	GPLM-130W98LED4K-ES-LEH2	139	3	LUMINAIRE ATTACHMENT HEIGHT = 9.95m
EHP302	MAJOR MACKENZIE DRIVE	9+451.0	19.4	HYDRO POLE P54539	NOTE 2	–	GPLM-180W98LED4K-ES-LE4	201	1.2	LUMINAIRE ATTACHMENT HEIGHT = 7.45m
P336	MAJOR MACKENZIE DRIVE	9+499.0	13.5	CONCRETE VAUGHAN STD. DWG L-7	9.9	DIRECT BURIED	GPLM-180W98LED4K-ES-LE4	201	1.2	GROUND ROD, LUMINAIRE ATTACHMENT HEIGHT = 7.7m
P337	MAJOR MACKENZIE DRIVE	9+550.5	13.5	CONCRETE VAUGHAN STD. DWG L-7	9.9	DIRECT BURIED	GPLM-180W98LED4K-ES-LE4	201	1.2	LUMINAIRE ATTACHMENT HEIGHT = 7.7m
P338	MAJOR MACKENZIE DRIVE	9+574.0	13.5	CONCRETE VAUGHAN STD. DWG L-7	9.9	DIRECT BURIED	GPLM-180W98LED4K-ES-LE4	201	1.2	LUMINAIRE ATTACHMENT HEIGHT = 7.7m
P339	MAJOR MACKENZIE DRIVE	9+597.5	13.4	CONCRETE VAUGHAN STD. DWG L-7	9.9	DIRECT BURIED	GPLM-180W98LED4K-ES-LE4	201	1.2	LUMINAIRE ATTACHMENT HEIGHT = 7.7m
P340	MAJOR MACKENZIE DRIVE	9+655.75	13.4	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	GROUND ROD
P341	MAJOR MACKENZIE DRIVE	9+709.5	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P342	MAJOR MACKENZIE DRIVE	9+775.5	5.9*	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P343	MAJOR MACKENZIE DRIVE	9+864.0	13.6	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P344	MAJOR MACKENZIE DRIVE	9+944.0	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P345	MAJOR MACKENZIE DRIVE	10+002.25	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	GROUND ROD
P346	MAJOR MACKENZIE DRIVE	10+047	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	GROUND ROD
P347	MAJOR MACKENZIE DRIVE	10+098.5	13.4	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P348	MAJOR MACKENZIE DRIVE	10+150.5	13.4	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P349	MAJOR MACKENZIE DRIVE	10+202	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P350	MAJOR MACKENZIE DRIVE	10+253.5	17.8	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P351	MAJOR MACKENZIE DRIVE	10+321.5	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	GROUND ROD
P352	MAJOR MACKENZIE DRIVE	10+371.5	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P353	MAJOR MACKENZIE DRIVE	10+426.5	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P354	MAJOR MACKENZIE DRIVE	10+481.5	13.5	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	
P355	MAJOR MACKENZIE DRIVE	10+536.5	13.9	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	

ROADWAY LIGHTING CHAMBER SUMMARY

CHAMBER NO.	LOCATION	STATION NO.	OFFSET (m) (NOTE 1)	STANDARD	REMARKS
HH301	MAJOR MACKENZIE W.B.L.	9+462.5	1.2m BGR	E1.03	–
HH302	MAJOR MACKENZIE & S-W RAMP	9+548	0.5m BSW	E1.03	–
HH303	MAJOR MACKENZIE E.B.L.	9+595.5	0.5m FSW	E1.03	–
HH304	MAJOR MACKENZIE W.B.L.	9+595.5	0.5m FSW	E1.03	–
HH305	MAJOR MACKENZIE & W-S RAMP	9+497.5	0.5m FSW	E1.03	–
HH306	MAJOR MACKENZIE & E-S RAMP	9+109	1.2*	E1.03	–
HH307	MAJOR MACKENZIE & S-E/W RAMP	10+269.5	6.0*	E1.03	–
HH308	MAJOR MACKENZIE & S-E/W RAMP	10+288	2.5*	E1.03	–
HH309	MAJOR MACKENZIE W.B.L.	10+554	0.5m FSW	E1.03	–
HH310	MAJOR MACKENZIE E.B.L.	10+554	0.5m FSW	E1.03	–

NOTE(S):

1. WHEN SHOWN WITHOUT *, OFFSET IS FROM CENTRE OR CONTROL LINE OF ROADWAY. WHEN SHOWN WITH *, OFFSET IS FROM EDGE OF TRAVELED PAVEMENT (EP). WHEN SHOWN WITH BGR, OFFSET IS FROM BACK OF GUIDERAIL CHANNEL. WHEN SHOWN WITH BSW, OFFSET IS FROM BACK OF SIDE WALK. WHEN SHOWN WITH FSW, OFFSET IS FROM FRONT OF SIDEWALK.
2. LUMINAIRE MOUNTED ON HYDRO POLE.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

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TITLE

HWY 427 EXPANSION

PERMANENT CHARTS - 5

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	8	ELE	000	DWG	1009	A

NOTE(S):

1. WHEN SHOWN WITHOUT *, OFFSET IS FROM CENTRE OR CONTROL LINE OF ROADWAY. WHEN SHOWN WITH *, OFFSET IS FROM EDGE OF TRAVELED PAVEMENT (EP).
2. INSTALL POLE 0.9m BEHIND SIDEWALK.
3. INSTALL PUSHBUTTON IN ACCORDANCE TO OPSD 310.030/031.

LIGHTING POLE SUMMARY

POLE NO.	LOCATION	STATION	OFFSET (m) (Note 1)	POLE TYPE	LENGTH (M)	CONCRETE FOOTING	LUMINAIRE PHOTOMETRIC	WATTAGE (W)	ARM LENGTH (M)	REMARKS
P356	MAJOR MACKENZIE DRIVE S-W RAMP	17+222.5	1.6 BGR	CONCRETE VAUGHAN STD. DWG L-7	9.9	DIRECT BURIED	GPLM-180W98LED4K-ES-LE4	201	1.2	GROUND ROD, LUMINAIRE ATTACHMENT HEIGHT = 7.7m
P357	MAJOR MACKENZIE DRIVE S-W RAMP	17+198	1.6 BGR	CONCRETE VAUGHAN STD. DWG L-7	9.9	DIRECT BURIED	GPLM-180W98LED4K-ES-LE4	201	1.2	LUMINAIRE ATTACHMENT HEIGHT = 7.7m
P358	MAJOR MACKENZIE DRIVE S-W RAMP	17+168.5	5.2*	CONCRETE VAUGHAN STD. DWG L-7	9.9	DIRECT BURIED	GPLM-180W98LED4K-ES-LE4	201	1.2	LUMINAIRE ATTACHMENT HEIGHT = 7.7m
P359	MAJOR MACKENZIE DRIVE W-S RAMP	9+472	5.9*	CONCRETE VAUGHAN STD. DWG L-7	11.4	DIRECT BURIED	GPLM-130W98LED4K-ES-LEH2	139	3	

TRAFFIC SIGNAL POLE SUMMARY

POLE ID	LOCATION	STATION	OFFSET (m) (NOTE 1)	POLE TYPE	POLE HEIGHT (m)	CONCRETE FOOTING	TYPE	TRAFFIC SIGNAL HEADS		LUMINAIRE PHOTOMETRIC	ROADWAY LUMINAIRES		REMARKS
								MOUNTING HEIGHT (m)	MAST ARM LENGTH (m)		WATTAGE (W)	ARM LENGTH (m)	
TS70	MAJOR MACKENZIE DRIVE	10+286.0	0	SECTIONAL STEEL	7	OPSD 2200.01	TYPE 1	5	0.6	–	–	–	
TS71	MAJOR MACKENZIE DRIVE & S-E/W RAMP	10+291.75	NOTE 2	HEAVY CLASS SECTIONAL STEEL	6	MTOD 2200.050	TYPE 1	5	7.6	ATB2_40BLEDE10_R3	143	2.4	PEDESTRIAN HEAD C/W COUNTDOWN TIMER
TS72	MAJOR MACKENZIE DRIVE	10+256.0	10.5*	SECTIONAL STEEL	8.7	–	–	–	–	–	–	–	POWER SUPPLY(TYPE 1), GROUND ROD (4), DIRECT BURIED POLE
TS73	MAJOR MACKENZIE DRIVE	10+249.25	0	SECTIONAL STEEL	7	OPSD 2200.01	TYPE 1	5	1.8	–	–	–	
TS74	MAJOR MACKENZIE DRIVE	10+248	4.6*	HEAVY CLASS SECTIONAL STEEL	10.5	MTOD 2200.050	TYPE 1	5	7.6	–	–	–	
							TYPE 1	5	0.6	–	–	–	
TS75	MAJOR MACKENZIE DRIVE	10+271.75	5.0*	SECTIONAL STEEL	7	OPSD 2200.01	OVERSIZE HIGHWAY	5	3.0	ATB2_40BLEDE10_R3	143	2.4	
TS76	MAJOR MACKENZIE DRIVE	10+285	5.0*	SECTIONAL STEEL	7	OPSD 2200.01	OVERSIZE HIGHWAY	5	3.0	–	–	–	
TS77	MAJOR MACKENZIE DRIVE	10+265.5	NOTE 2	SECTIONAL STEEL	7	OPSD 2200.01	–	–	1.0	–	–	–	PEDESTRIAN HEAD C/W COUNTDOWN TIMER
TS78	MAJOR MACKENZIE DRIVE	–	NOTE 3	ALUMINUM POLE	1.5	OPSD 2200.041	–	–	–	–	–	–	APS PUSHBUTTON
TS79	MAJOR MACKENZIE DRIVE	–	NOTE 3	ALUMINUM POLE	1.5	OPSD 2200.041	–	–	–	–	–	–	APS PUSHBUTTON
TS80	MAJOR MACKENZIE DRIVE	10+287	6.1*	SECTIONAL STEEL	7	OPSD 2200.01	–	–	–	–	–	–	PEDESTRIAN HEAD C/W COUNTDOWN TIMER
TS81	MAJOR MACKENZIE DRIVE	–	NOTE 3	ALUMINUM POLE	1.5	OPSD 2200.041	–	–	–	–	–	–	APS PUSHBUTTON
TS82	MAJOR MACKENZIE DRIVE	–	NOTE 3	ALUMINUM POLE	1.5	OPSD 2200.041	–	–	–	–	–	–	APS PUSHBUTTON

TRAFFIC SIGNAL CONTROLLER CABINET SUMMARY

EQUIPMENT ID	LOCATION	STATION	OFFSET(m) (NOTE 1)	TYPE	CONCRETE PAD	REMARKS
TC8	MAJOR MACKENZIE DRIVE	10+294.5	20.5	YORK REGION STANDARD CONTROLLER	YORK REGION STD. E-3.09	

TRAFFIC SIGNAL EQUIPMENT SUMMARY

CHAMBER ID	LOCATION	STATION	OFFSET (m) (NOTE 1)	STANDARD	REMARKS
MH70	MAJOR MACKENZIE DRIVE	10+291.0	5.0*	OPSD 2111.020 OPSD 2116.020	GROUND ROD, DRAIN TO EMBANKMENT SLOPE
HH70	MAJOR MACKENZIE DRIVE	10+367	2.0*	OPSD 2112.040	
MH71	MAJOR MACKENZIE DRIVE	10+291.0	0	OPSD 2111.020 OPSD 2116.020	DRAIN TO DRAINAGE POCKET
MH72	MAJOR MACKENZIE DRIVE & S-E RAMP	10+291.0	6.1*	OPSD 2111.040 OPSD 2116.020	GROUND ROD, DRAIN TO DRAINAGE POCKET
HH71	MAJOR MACKENZIE DRIVE	10+153	1.6*	OPSD 2112.040	
MH73	MAJOR MACKENZIE DRIVE & S-E RAMP	10+261.75	8.0*	OPSD 2111.020 OPSD 2116.020	GROUND ROD, DRAIN TO EMBANKMENT SLOPE
MH74	MAJOR MACKENZIE DRIVE	10+251.5	0	OPSD 2111.020 OPSD 2116.020	DRAIN TO DRAINAGE POCKET
MH75	MAJOR MACKENZIE DRIVE	10+251.0	5.0*	OPSD 2111.020 OPSD 2116.020	GROUND ROD, DRAIN TO EMBANKMENT SLOPE

DETECTOR LOOP SUMMARY

ID	LOCATION	TYPE	SIZE (m)	TURNS	INDUCTANCE (μH)	REMARKS
LD70	MAJOR MACKENZIE DRIVE	SIMPLE	1.8 X 1.8	5	177	
LD71	MAJOR MACKENZIE DRIVE	SIMPLE	1.8 X 1.8	5	177	
LD72	MAJOR MACKENZIE DRIVE	SIMPLE	1.8 X 1.8	5	177	
LD73	MAJOR MACKENZIE DRIVE & S-E RAMP	SIMPLE	1.8 X 13	2	146	
LD74	MAJOR MACKENZIE DRIVE & S-E RAMP	SIMPLE	1.8 X 13	2	146	
LD75	MAJOR MACKENZIE DRIVE & S-E RAMP	SIMPLE	1.8 X 13	2	146	
LD76	MAJOR MACKENZIE DRIVE	SIMPLE	1.8 X 1.8	6	248	
LD77	MAJOR MACKENZIE DRIVE	SIMPLE	1.8 X 1.8	6	248	
LD78	MAJOR MACKENZIE DRIVE	SIMPLE	1.8 X 1.8	6	248	

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	MANPREET PANESAR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

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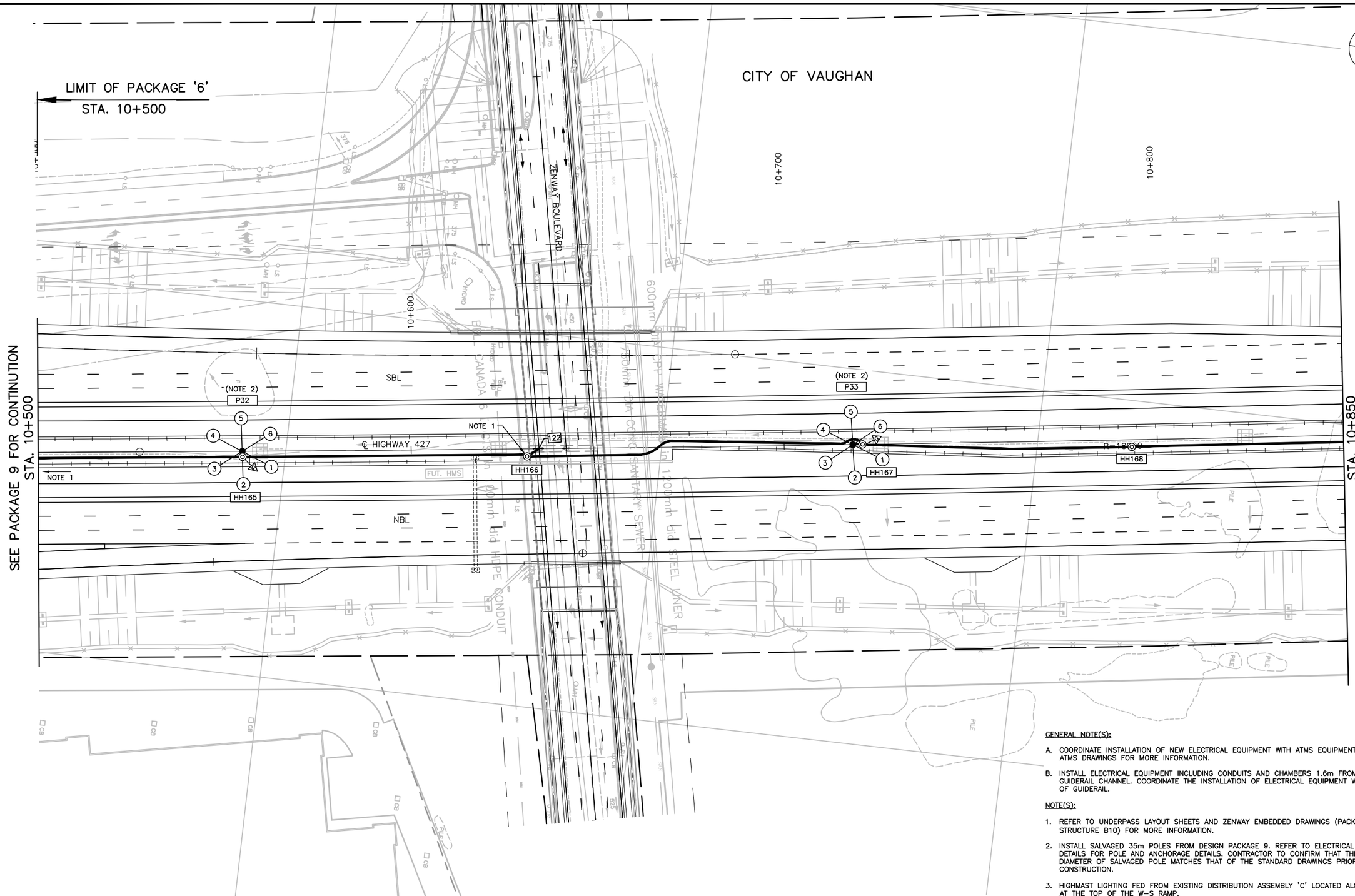
TITLE

HWY 427 EXPANSION

PERMANENT CHARTS - 6

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	8	ELE	000	DWG	1010	A



GENERAL NOTE(S):

A. COORDINATE INSTALLATION OF NEW ELECTRICAL EQUIPMENT WITH ATMS EQUIPMENT. REFER TO ATMS DRAWINGS FOR MORE INFORMATION.

B. INSTALL ELECTRICAL EQUIPMENT INCLUDING CONDUITS AND CHAMBERS 1.6m FROM BACK OF GUIDERAIL CHANNEL. COORDINATE THE INSTALLATION OF ELECTRICAL EQUIPMENT WITH INSTALLATION OF GUIDERAIL.

NOTE(S):

1. REFER TO UNDERPASS LAYOUT SHEETS AND ZENWAY EMBEDDED DRAWINGS (PACKAGE 1 – STRUCTURE B10) FOR MORE INFORMATION.

2. INSTALL SALVAGED 35m POLES FROM DESIGN PACKAGE 9. REFER TO ELECTRICAL NON–STANDARD DETAILS FOR POLE AND ANCHORAGE DETAILS. CONTRACTOR TO CONFIRM THAT THE BOLT CIRCLE DIAMETER OF SALVAGED POLE MATCHES THAT OF THE STANDARD DRAWINGS PRIOR TO CONSTRUCTION.

3. HIGHMAST LIGHTING FED FROM EXISTING DISTRIBUTION ASSEMBLY 'C' LOCATED ALONG HIGHWAY 7 AT THE TOP OF THE W–S RAMP.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

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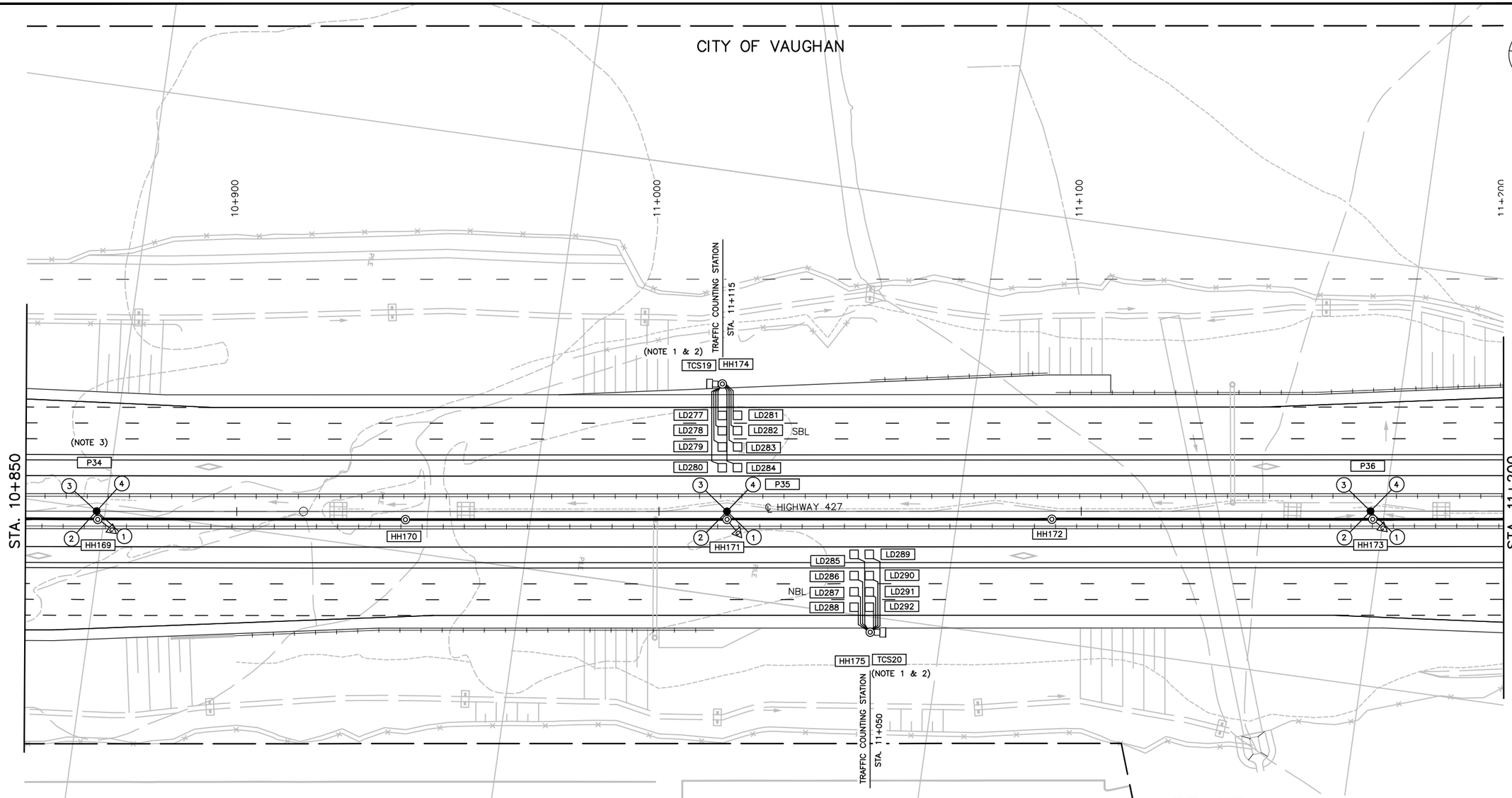
TITLE

HWY 427 EXPANSION

ELECTRICAL LAYOUT - 1
STA. 10+500 TO STA. 10+850

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	6	ELE	000	DWG	1014	A



GENERAL NOTE(S):

A. COORDINATE INSTALLATION OF NEW ELECTRICAL EQUIPMENT WITH ATMS EQUIPMENT. REFER TO ATMS DRAWINGS FOR MORE INFORMATION.

B. INSTALL ELECTRICAL EQUIPMENT INCLUDING CONDUITS AND CHAMBERS 1.6m FROM BACK OF GUIDERAIL CHANNEL. COORDINATE THE INSTALLATION OF ELECTRICAL EQUIPMENT WITH INSTALLATION OF GUIDERAIL.

NOTE(S):

1. REFER TO MTOD 2901.022 AND MTOD 2901.506 FOR CONSTRUCTION OF TRAFFIC COUNTING STATION AND LOOP DETECTORS. LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES AND INSTALLED IN UPPER BINDER COURSE PRIOR TO CONSTRUCTION OF FINAL PAVEMENT SURFACE COURSE.

2. COORDINATE INSTALLATION OF TRAFFIC COUNTING STATION WITH INSTALLATION OF NEW GUIDERAIL.

3. INSTALL SALVAGED 30m POLES FROM DESIGN PACKAGE 9. REFER TO ELECTRICAL NON–STANDARD DETAILS FOR POLE AND ANCHORAGE DETAILS. CONTRACTOR TO CONFIRM THAT THE BOLT CIRCLE DIAMETER OF SALVAGED POLE MATCHES THAT OF THE STANDARD DRAWINGS PRIOR TO CONSTRUCTION.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m
Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

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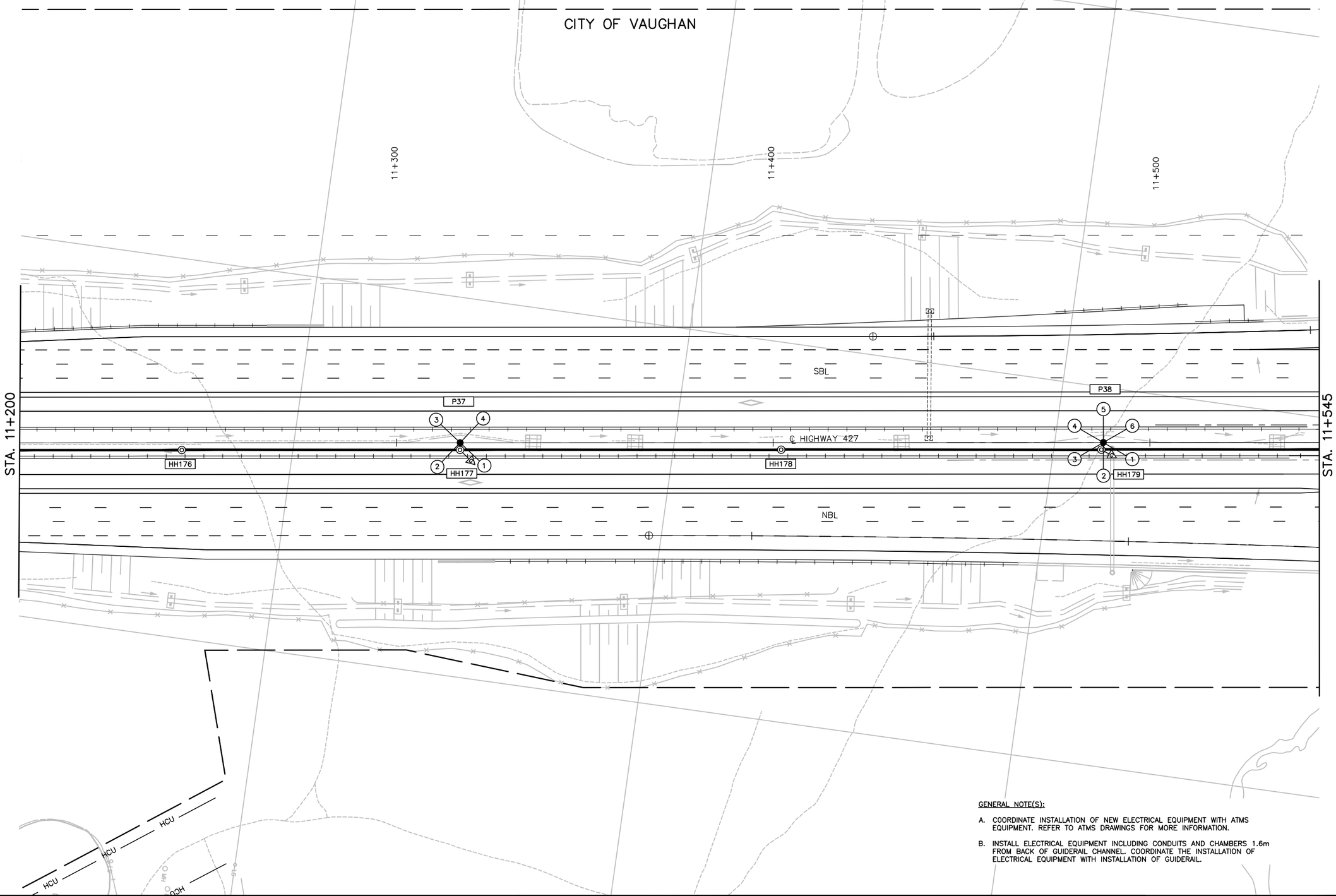
TITLE

HWY 427 EXPANSION

ELECTRICAL LAYOUT - 2
STA. 10+850 TO STA. 11+200

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	6	ELE	000	DWG	1015	A



GENERAL NOTE(S):

A. COORDINATE INSTALLATION OF NEW ELECTRICAL EQUIPMENT WITH ATMS EQUIPMENT. REFER TO ATMS DRAWINGS FOR MORE INFORMATION.

B. INSTALL ELECTRICAL EQUIPMENT INCLUDING CONDUITS AND CHAMBERS 1.6m FROM BACK OF GUIDERAIL CHANNEL. COORDINATE THE INSTALLATION OF ELECTRICAL EQUIPMENT WITH INSTALLATION OF GUIDERAIL.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m
Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

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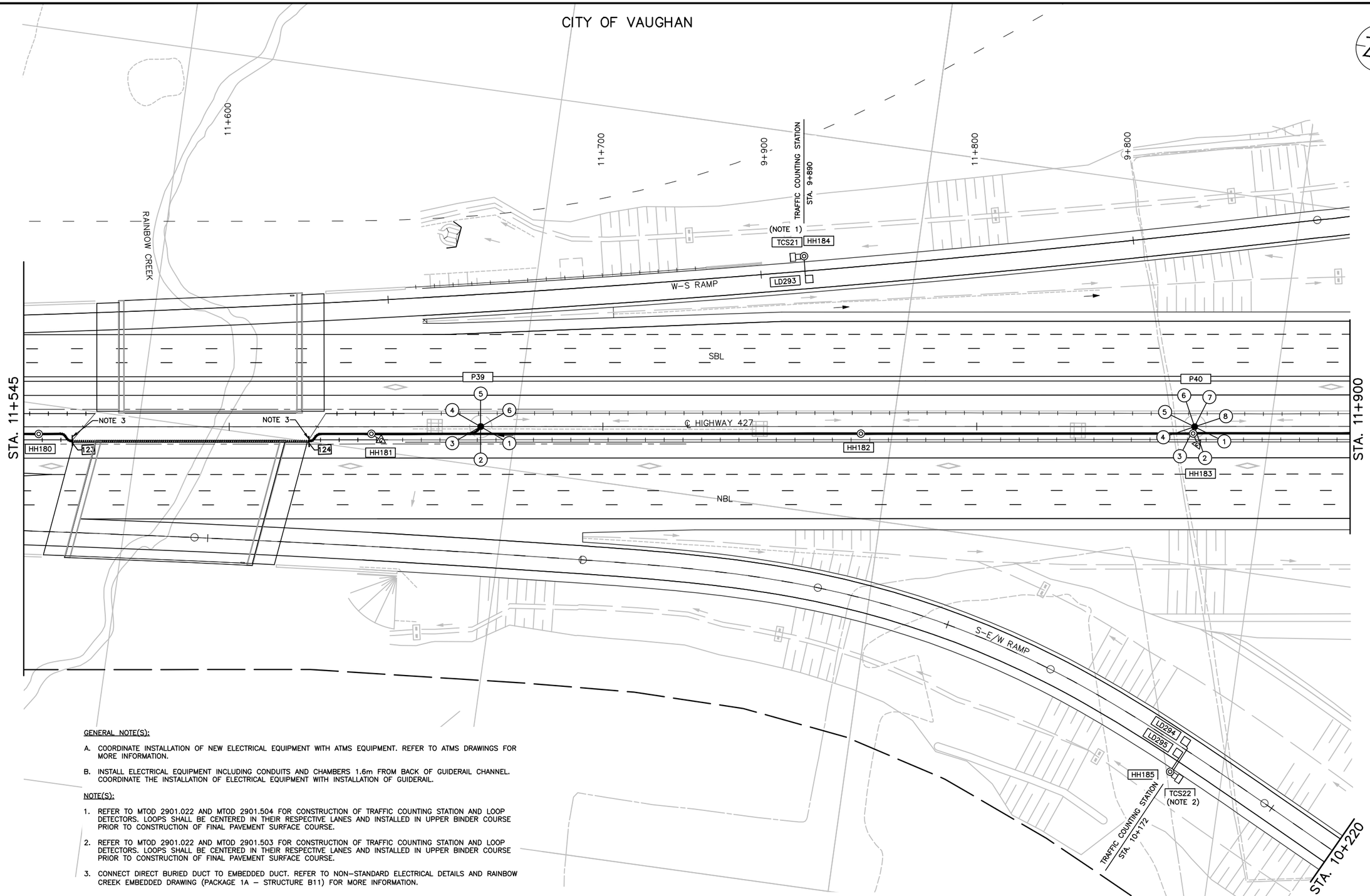
TITLE

HWY 427 EXPANSION

ELECTRICAL LAYOUT - 3
STA. 11+200 TO STA. 11+545

PROJECT ID.	STAGE IDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	6	ELE	000	DWG	1016	A



GENERAL NOTE(S):

A. COORDINATE INSTALLATION OF NEW ELECTRICAL EQUIPMENT WITH ATMS EQUIPMENT. REFER TO ATMS DRAWINGS FOR MORE INFORMATION.

B. INSTALL ELECTRICAL EQUIPMENT INCLUDING CONDUITS AND CHAMBERS 1.6m FROM BACK OF GUIDERAIL CHANNEL. COORDINATE THE INSTALLATION OF ELECTRICAL EQUIPMENT WITH INSTALLATION OF GUIDERAIL.

NOTE(S):

1. REFER TO MTOD 2901.022 AND MTOD 2901.504 FOR CONSTRUCTION OF TRAFFIC COUNTING STATION AND LOOP DETECTORS. LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES AND INSTALLED IN UPPER BINDER COURSE PRIOR TO CONSTRUCTION OF FINAL PAVEMENT SURFACE COURSE.

2. REFER TO MTOD 2901.022 AND MTOD 2901.503 FOR CONSTRUCTION OF TRAFFIC COUNTING STATION AND LOOP DETECTORS. LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES AND INSTALLED IN UPPER BINDER COURSE PRIOR TO CONSTRUCTION OF FINAL PAVEMENT SURFACE COURSE.

3. CONNECT DIRECT BURIED DUCT TO EMBEDDED DUCT. REFER TO NON-STANDARD ELECTRICAL DETAILS AND RAINBOW CREEK EMBEDDED DRAWING (PACKAGE 1A – STRUCTURE B11) FOR MORE INFORMATION.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

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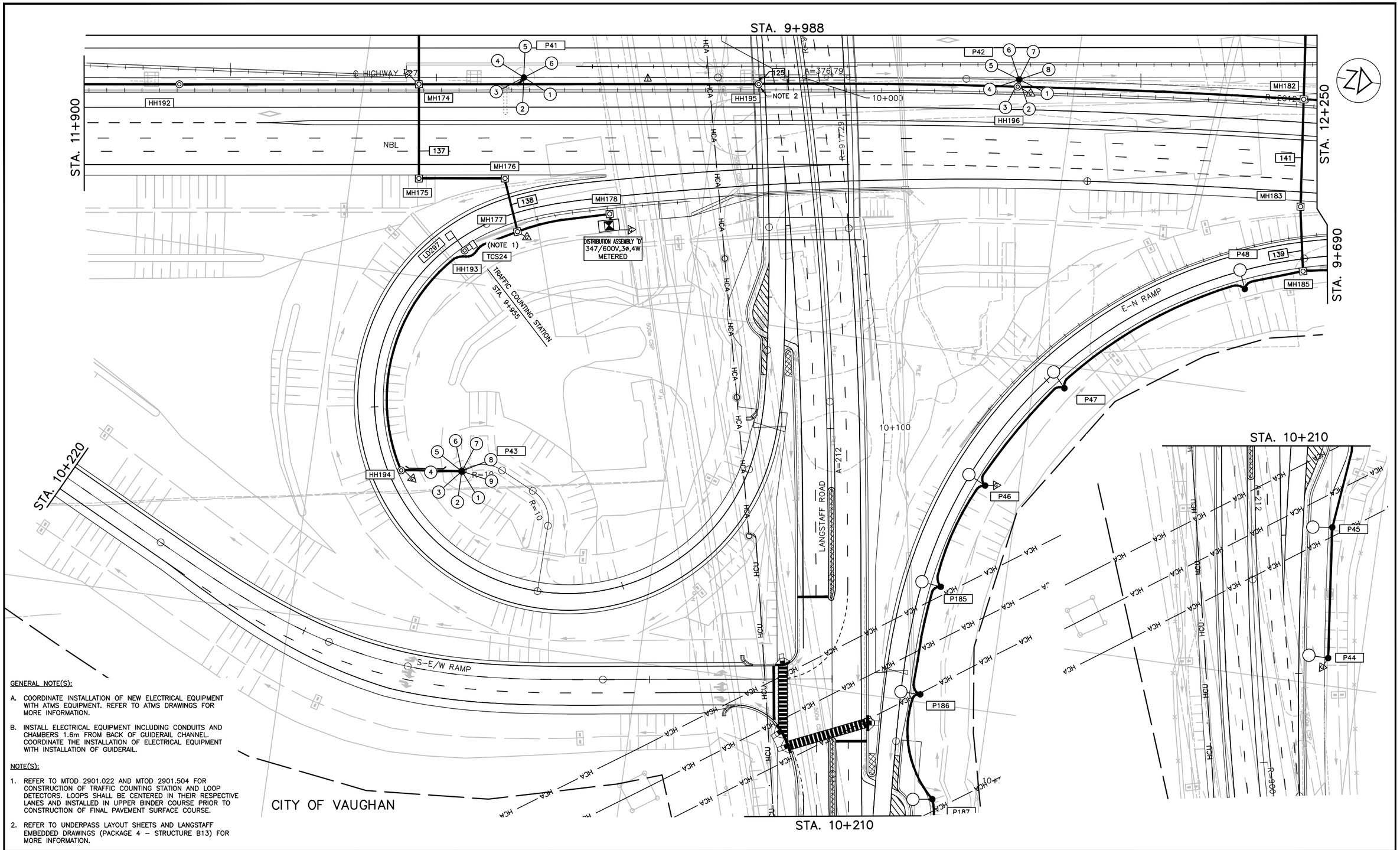
TITLE

HWY 427 EXPANSION

ELECTRICAL LAYOUT - 4
STA. 11+545 TO STA. 11+900

PROJECT ID.	STAGE IDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	6	ELE	000	DWG	1017	A



GENERAL NOTE(S):

A. COORDINATE INSTALLATION OF NEW ELECTRICAL EQUIPMENT WITH ATMS EQUIPMENT. REFER TO ATMS DRAWINGS FOR MORE INFORMATION.

B. INSTALL ELECTRICAL EQUIPMENT INCLUDING CONDUITS AND CHAMBERS 1.6m FROM BACK OF GUIDERAIL CHANNEL. COORDINATE THE INSTALLATION OF ELECTRICAL EQUIPMENT WITH INSTALLATION OF GUIDERAIL.

NOTE(S):

1. REFER TO MTOD 2901.022 AND MTOD 2901.504 FOR CONSTRUCTION OF TRAFFIC COUNTING STATION AND LOOP DETECTORS. LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES AND INSTALLED IN UPPER BINDER COURSE PRIOR TO CONSTRUCTION OF FINAL PAVEMENT SURFACE COURSE.

2. REFER TO UNDERPASS LAYOUT SHEETS AND LANGSTAFF EMBEDDED DRAWINGS (PACKAGE 4 – STRUCTURE B13) FOR MORE INFORMATION.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

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TITLE

HWY 427 EXPANSION

ELECTRICAL LAYOUT - 5
STA. 11+900 TO STA. 12+250

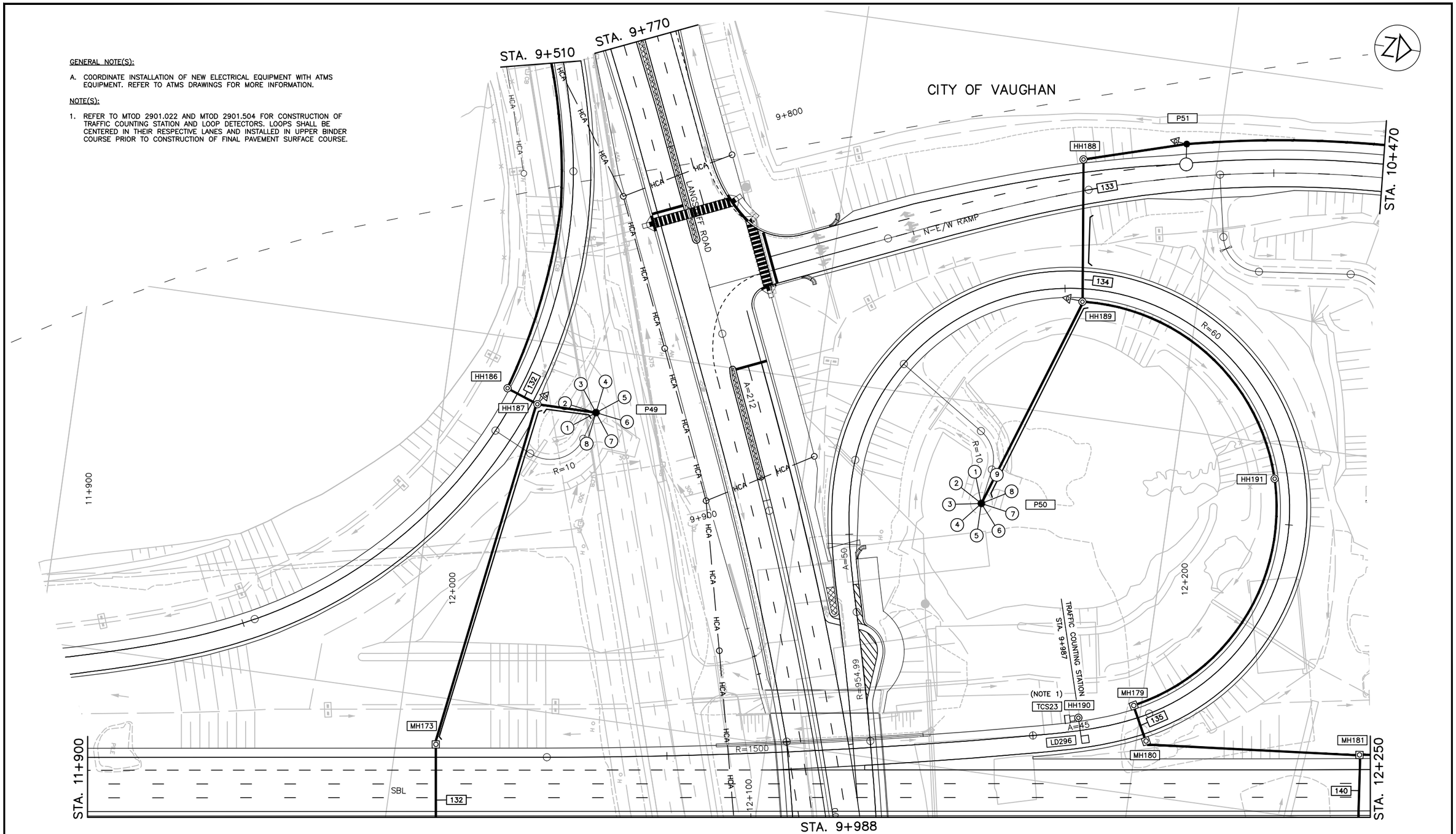
PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	6	ELE	000	DWG	1018	A

GENERAL NOTE(S):

A. COORDINATE INSTALLATION OF NEW ELECTRICAL EQUIPMENT WITH ATMS EQUIPMENT. REFER TO ATMS DRAWINGS FOR MORE INFORMATION.

NOTE(S):

1. REFER TO MTOD 2901.022 AND MTOD 2901.504 FOR CONSTRUCTION OF TRAFFIC COUNTING STATION AND LOOP DETECTORS. LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES AND INSTALLED IN UPPER BINDER COURSE PRIOR TO CONSTRUCTION OF FINAL PAVEMENT SURFACE COURSE.



NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

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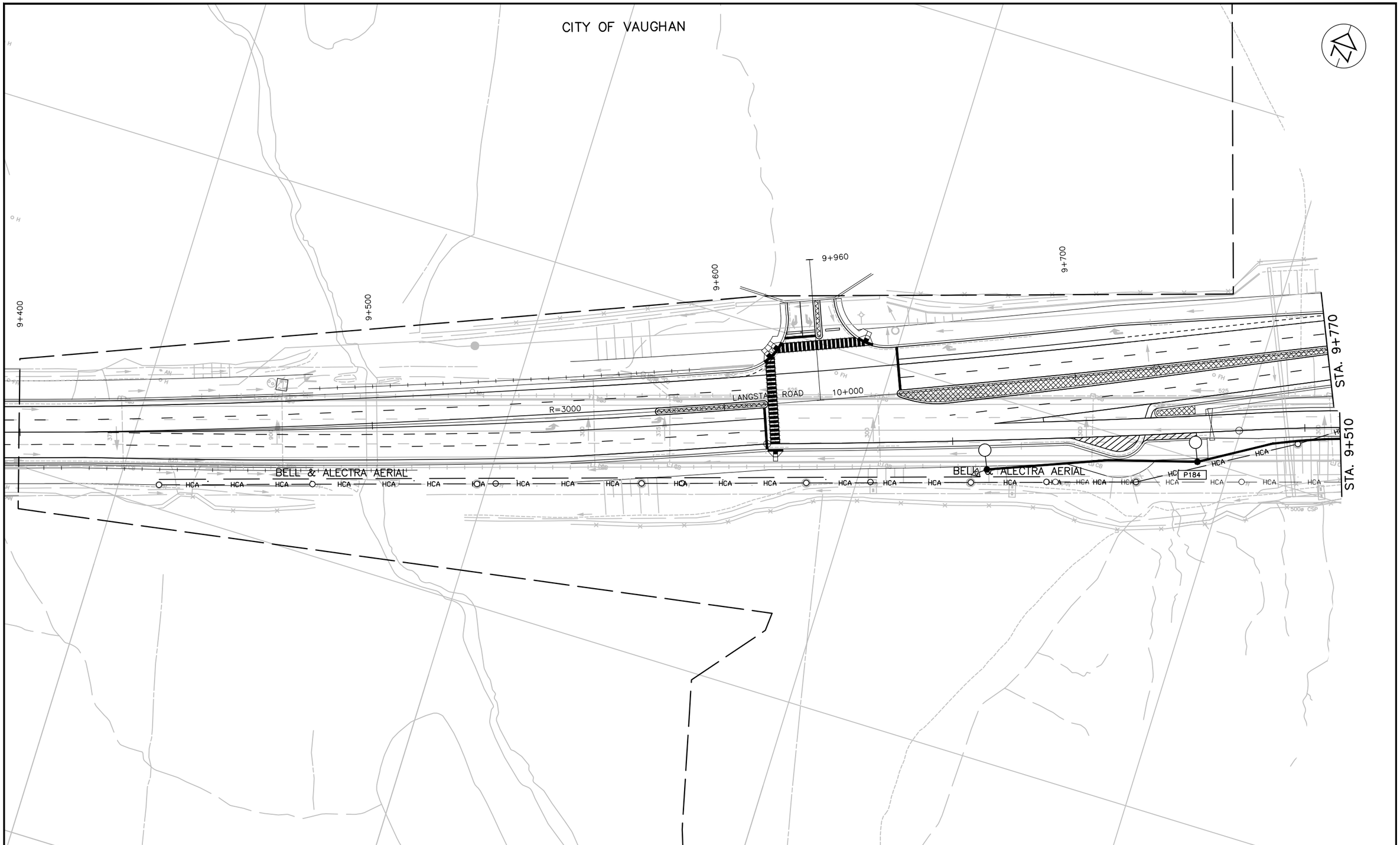
TITLE

HWY 427 EXPANSION

ELECTRICAL LAYOUT - 6
STA. 11+900 TO STA. 12+250

PROJECT ID.	STAGE IDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	6	ELE	000	DWG	1019	A



NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

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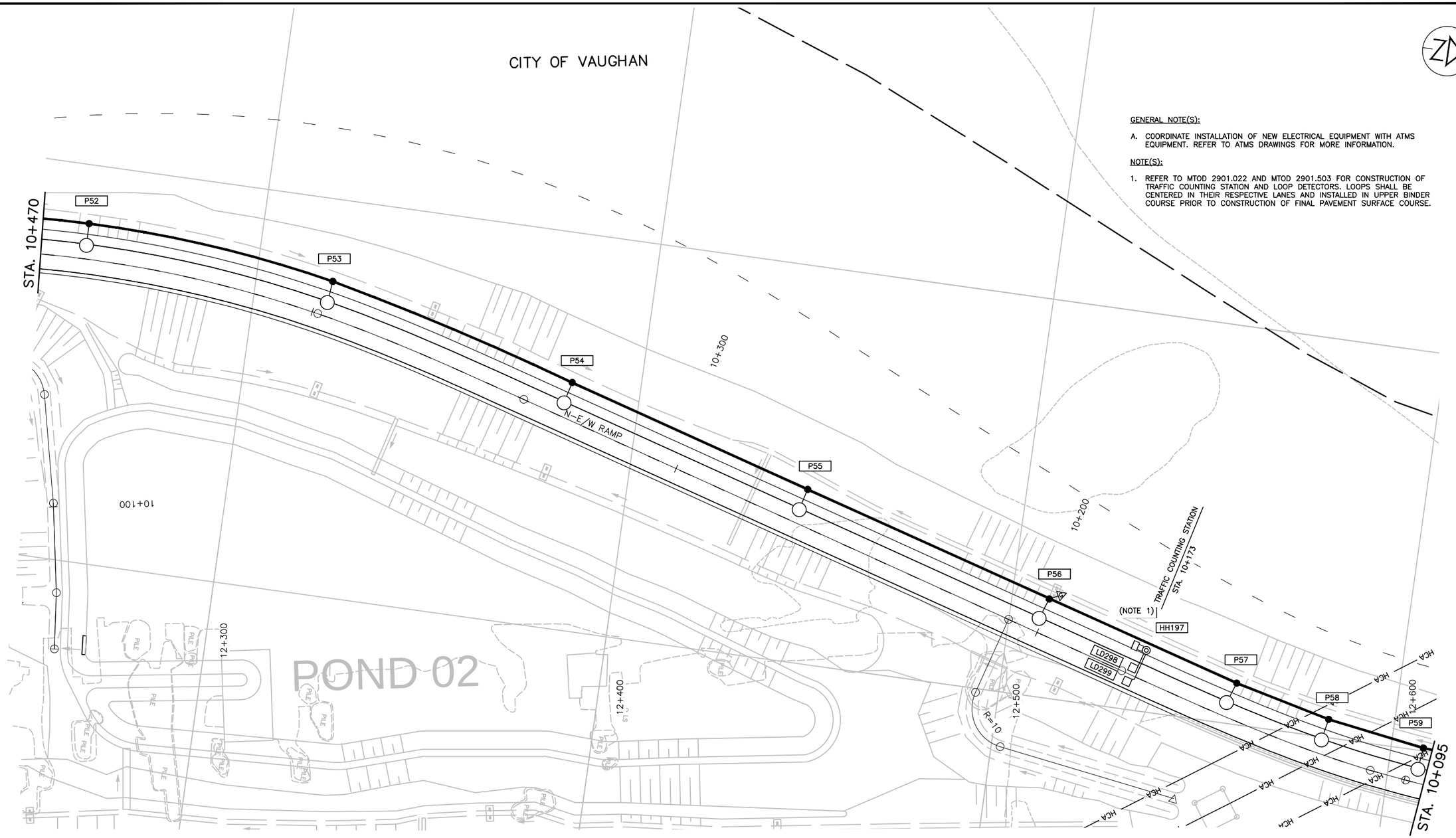
TITLE

HWY 427 EXPANSION

ELECTRICAL LAYOUT - 7
LANGSTAFF ROAD
STA. 9+400 TO STA. 9+770

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	6	ELE	000	DWG	1020	A



GENERAL NOTE(S):

A. COORDINATE INSTALLATION OF NEW ELECTRICAL EQUIPMENT WITH ATMS EQUIPMENT. REFER TO ATMS DRAWINGS FOR MORE INFORMATION.

NOTE(S):

1. REFER TO MTOD 2901.022 AND MTOD 2901.503 FOR CONSTRUCTION OF TRAFFIC COUNTING STATION AND LOOP DETECTORS. LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES AND INSTALLED IN UPPER BINDER COURSE PRIOR TO CONSTRUCTION OF FINAL PAVEMENT SURFACE COURSE.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

link427

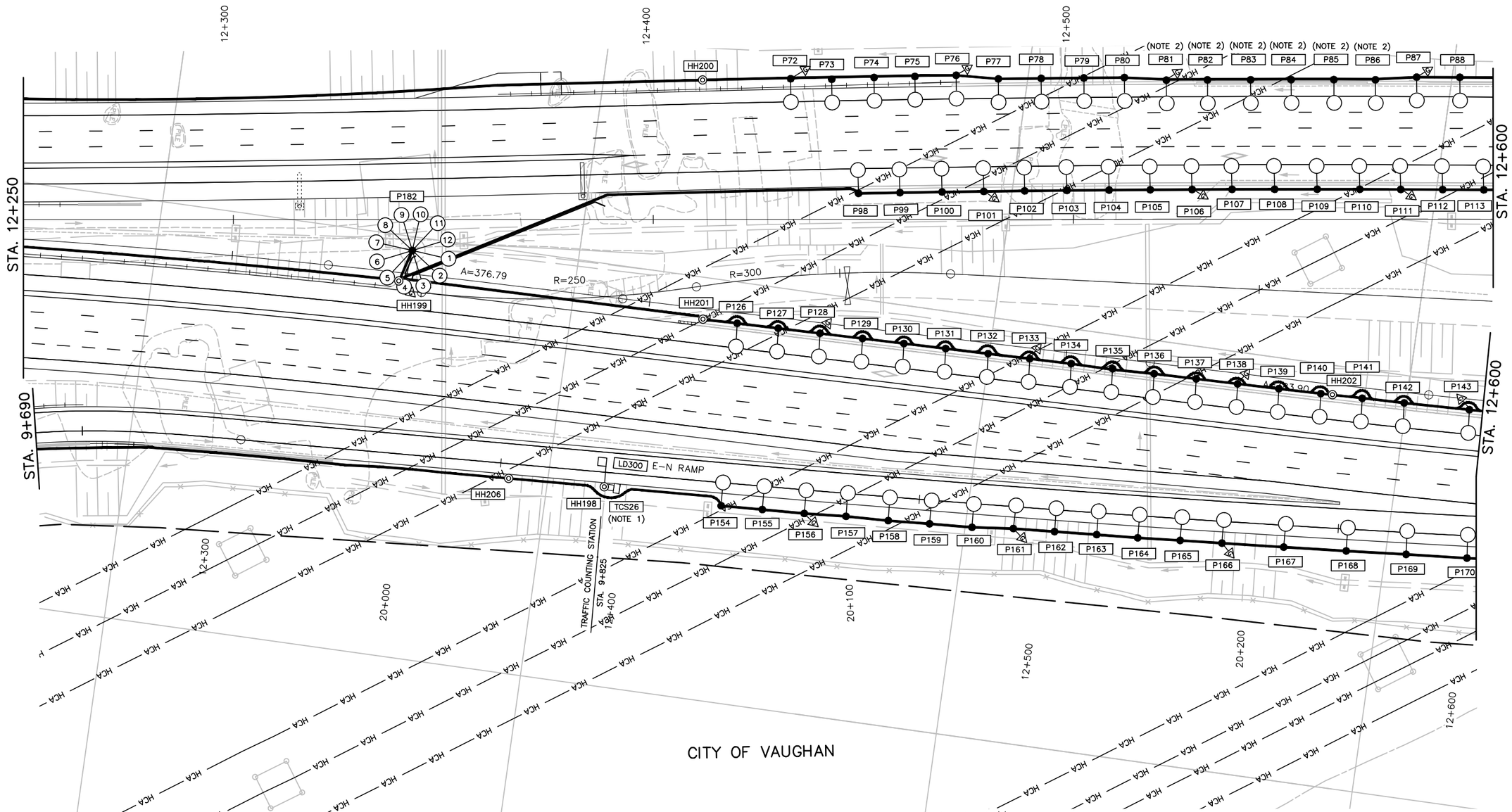
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

ELECTRICAL LAYOUT - 8
STA. 10+470 TO STA. 10+095

PROJECT ID.	STAGE IDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	6	ELE	000	DWG	1021	A



GENERAL NOTE(S):

A. COORDINATE INSTALLATION OF NEW ELECTRICAL EQUIPMENT WITH ATMS EQUIPMENT. REFER TO ATMS DRAWINGS FOR MORE INFORMATION.

B. INSTALL ELECTRICAL EQUIPMENT INCLUDING CONDUITS AND CHAMBERS 1.6m FROM BACK OF GUIDERAIL CHANNEL. COORDINATE THE INSTALLATION OF ELECTRICAL EQUIPMENT WITH INSTALLATION OF GUIDERAIL.

NOTE(S):

1. REFER TO MTOD 2901.022 AND MTOD 2901.504 FOR CONSTRUCTION OF TRAFFIC COUNTING STATION AND LOOP DETECTORS. LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES AND INSTALLED IN UPPER BINDER COURSE PRIOR TO CONSTRUCTION OF FINAL PAVEMENT SURFACE COURSE. COORDINATE INSTALLATION OF TRAFFIC COUNT STATION WITH INSTALLATION OF CONCRETE BARRIER.

2. COORDINATE INSTALLATION OF POLE FOOTING WITH EXISTING RSS WALL. REFER TO STRUCTURE W10 IN PACKAGE 1 FOR MORE DETAILS.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

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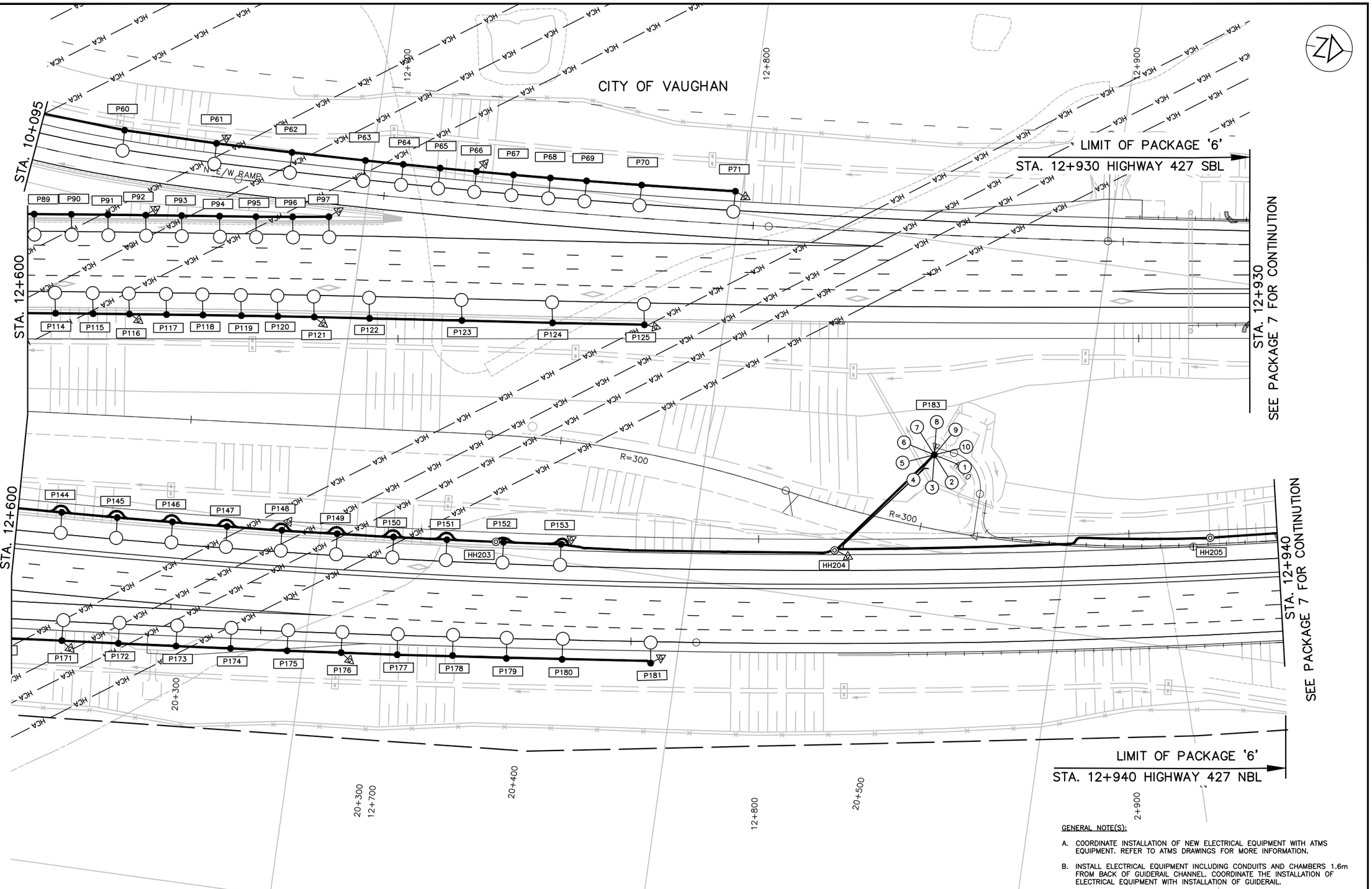
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

ELECTRICAL LAYOUT - 9
STA. 12+250 TO STA. 12+600

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	6	ELE	000	DWG	1022	A



GENERAL NOTE(S):

A. COORDINATE INSTALLATION OF NEW ELECTRICAL EQUIPMENT WITH ATMS EQUIPMENT. REFER TO ATMS DRAWINGS FOR MORE INFORMATION.

B. INSTALL ELECTRICAL EQUIPMENT INCLUDING CONDUITS AND CHAMBERS 1.6m FROM BACK OF GUIDERAIL CHANNEL. COORDINATE THE INSTALLATION OF ELECTRICAL EQUIPMENT WITH INSTALLATION OF GUIDERAIL.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD. ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

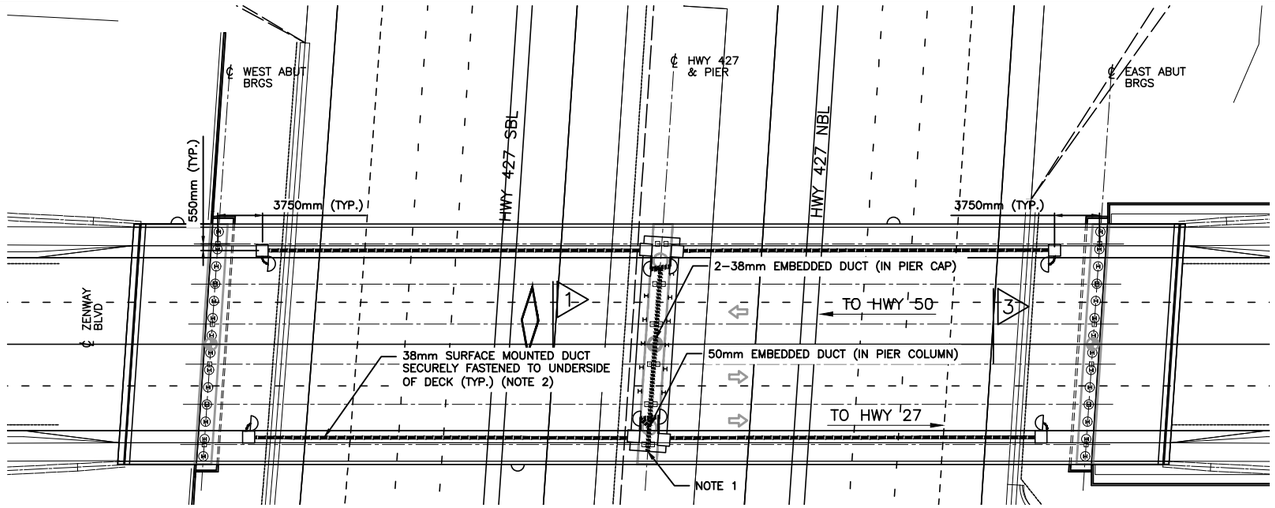
link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

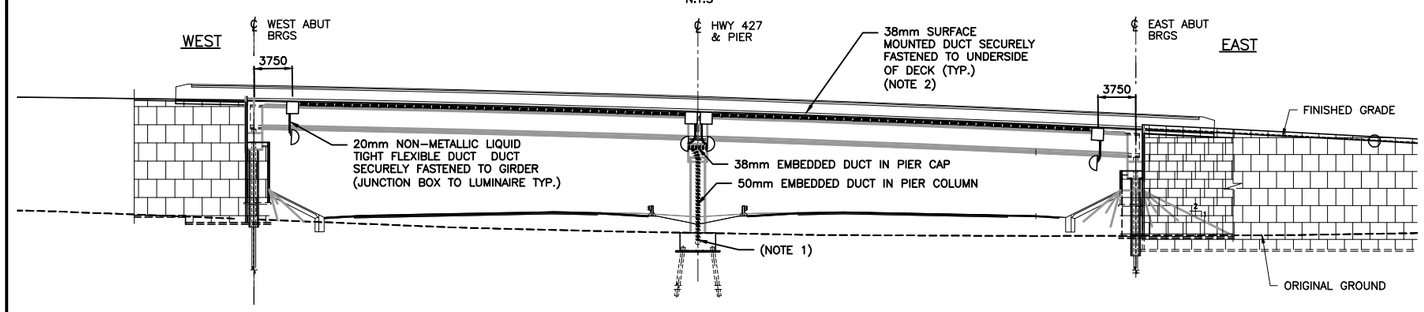
HWY 427 EXPANSION

ELECTRICAL LAYOUT - 10
STA. 12+600 TO STA. 12+930 SBL
STA. 12+600 TO STA. 12+940 NBL

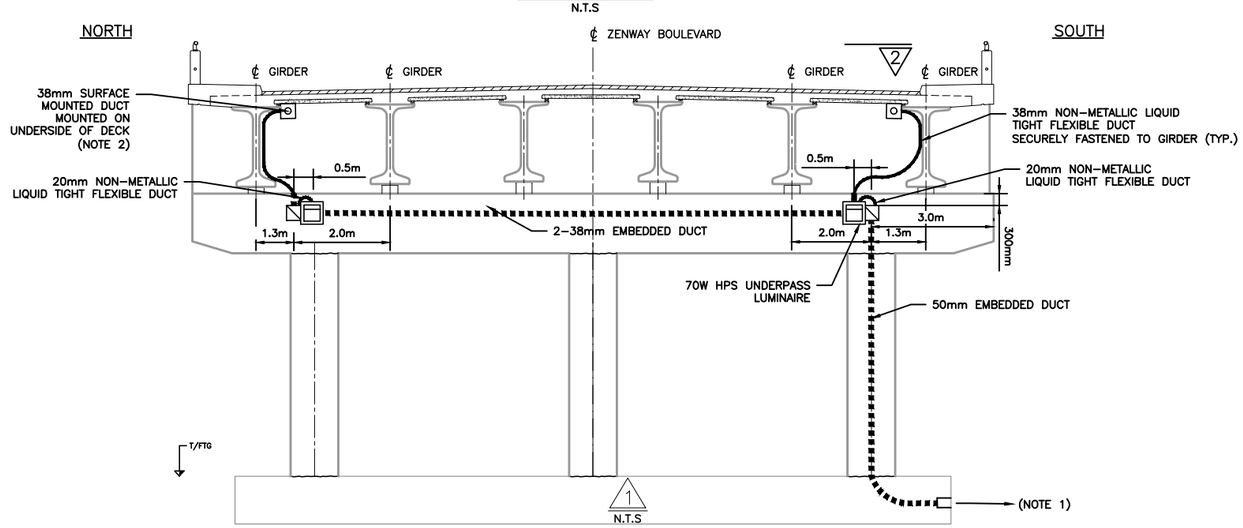
PROJECT ID.	STAGE IDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	6	ELE	000	DWG	1023	A



PLAN
N.T.S



ELEVATION
N.T.S



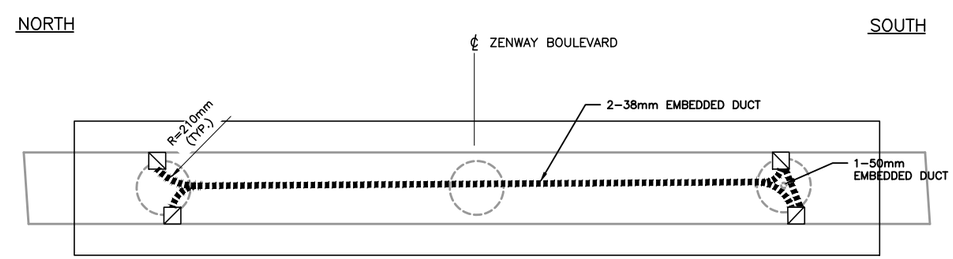
1
N.T.S

LEGEND:

- ☐ SURFACE MOUNTED RIGID PVC JUNCTION BOX TYPE P4-6 MOUNTED ON DECK (REFER TO OPSD 2300.030)
- ⧅ EMBEDDED RIGID PVC JUNCTION BOX TYPE P2-6 IN PIER CAP (REFER TO OPSD 2300.020)
- D 70W HPS UNDERPASS LUMINAIRE

NOTE(S):

1. REFER TO ELECTRICAL LAYOUT FOR MORE INFORMATION.
2. DUCT SHALL BE SECURELY FASTENED TO THE STRUCTURE / LUMINAIRE PLATE AT MINIMUM INTERVALS AS REQUIRED BY THE ELECTRICAL CODE



2 PIER CAP

NO.	DATE	REVISIONS	BY	CHK	LEAD DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE : N.T.S

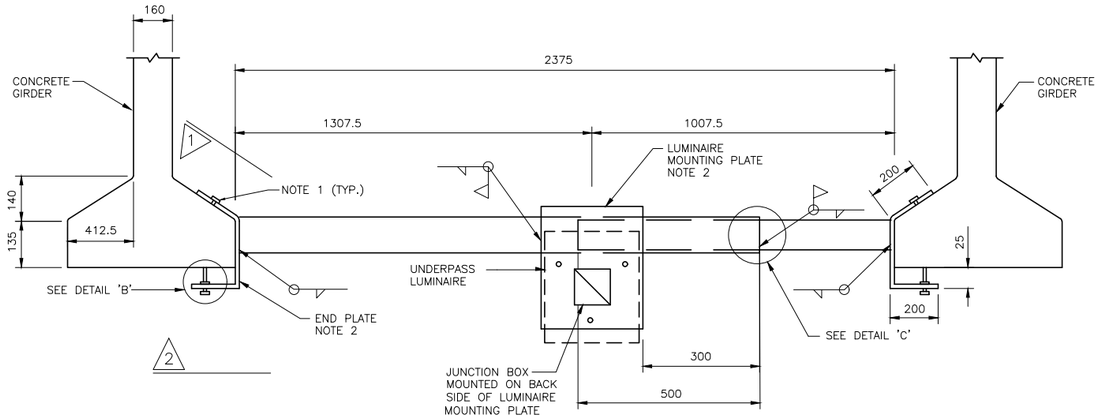
CONSULTANT		NAME (PRINT)	INIT.	DATE
	DESIGNED	NATALIA MAHABIR		
	DRAWN	KARMJIT GILL		
	CHECKED	LENNOX LUE		
	APPROVED LEAD ENG.	MARIO TEDESCO		
	APPROVED PROJ. MANAGER			

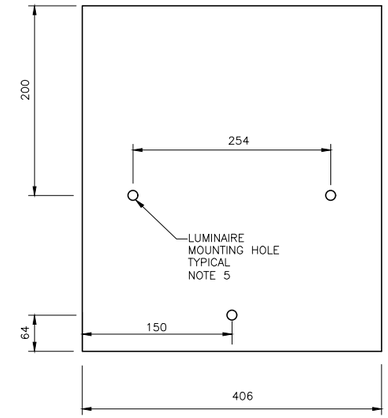
Ontario

link427 — LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE
HWY 427 EXPANSION
HWY 427 AT ZENWAY BLVD.
UNDERPASS LAYOUT - 1

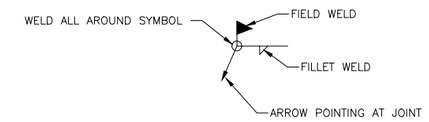
PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	6	ELE	000	DWG	1024	A





LUMINAIRE MOUNTING PLATE

SUPPLEMENTARY LEGEND:



GENERAL NOTE(S):

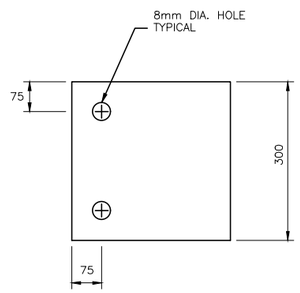
A. ALL STEEL AND HARDWARE SHALL BE HOT DIPPED GALVANIZED. COLD GALVANIZING SHALL BE APPLIED LOCALLY WHERE WELDING ON SITE IS REQUIRED.

B. ALL WELDS SHALL CONFORM TO CSA W59–M1989.

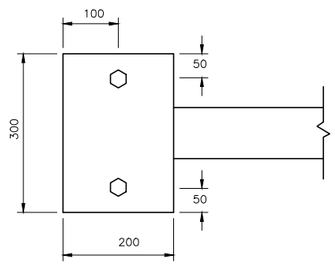
C. ALL FILLET WELDS SHALL BE 6mm.

NOTE(S):

1. HEXAGONAL HEAD SET SCREWS SHALL BE M16–A325.
2. LUMINAIRE MOUNTING PLATE AND END PLATES SHALL BE FABRICATED FROM 6mm STEEL.
3. TACK WELD NUT TO BOLT AFTER BOLT HAS BEEN TIGHTENED IN PLACE.
4. REMOVE GALVANIZING ON SURFACES SHOWN PRIOR TO PERFORMING FIELD WELD.
5. CONTRACTOR SHALL VERIFY MOUNTING HOLE LOCATION AND SIZE PRIOR TO MANUFACTURING BRACKETS.
6. REFER TO ELECTRICAL LAYOUT FOR MORE INFORMATION.
7. REFER TO DETAIL 'A' FOR MOUNTING BRACKET DETAILS.
8. DUCT SHALL BE SECURELY FASTENED TO THE STRUCTURE / LUMINAIRE PLATE AT MINIMUM INTERVALS AS REQUIRED BY THE ELECTRICAL CODE.



SECTION 1



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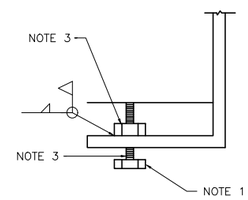
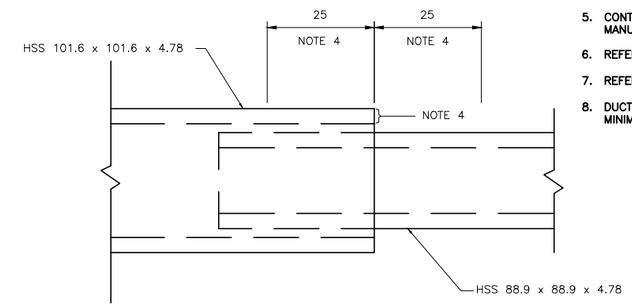


DETAIL 'B'

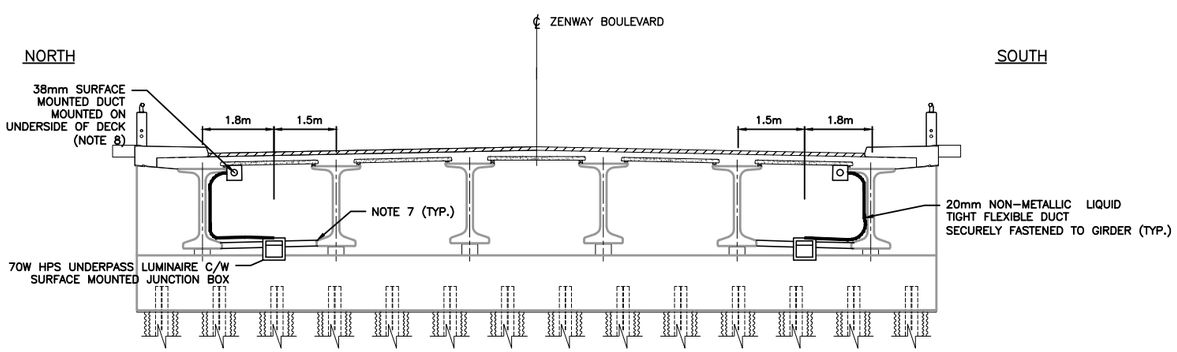


DETAIL 'C'

DETAIL 'A'

UNDERPASS LUMINAIRE MOUNTING BRACKET BETWEEN GIRDERS

N.T.S.



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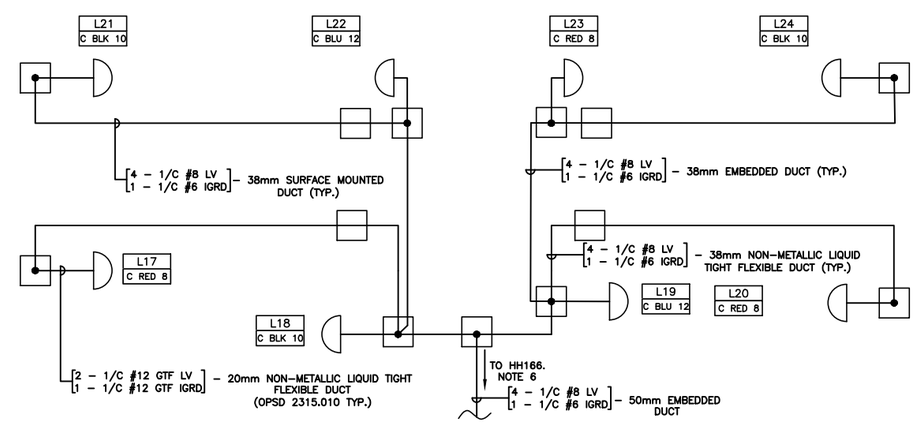
N.T.S



UNDERPASS LIGHTING WIRING DIAGRAM

N.T.S

NO.	DATE	REVISIONS	BY	CHK	LEAD DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE : N.T.S

CONSULTANT				
DESIGNED	NATALIA MAHABIR			
DRAWN	KARMJIT GILL			
CHECKED	LENNOX LUE			
APPROVED LEAD ENG.	MARIO TEDESCO			
APPROVED PROJ. MANAGER				
	NAME (PRINT)	INIT.	DATE	

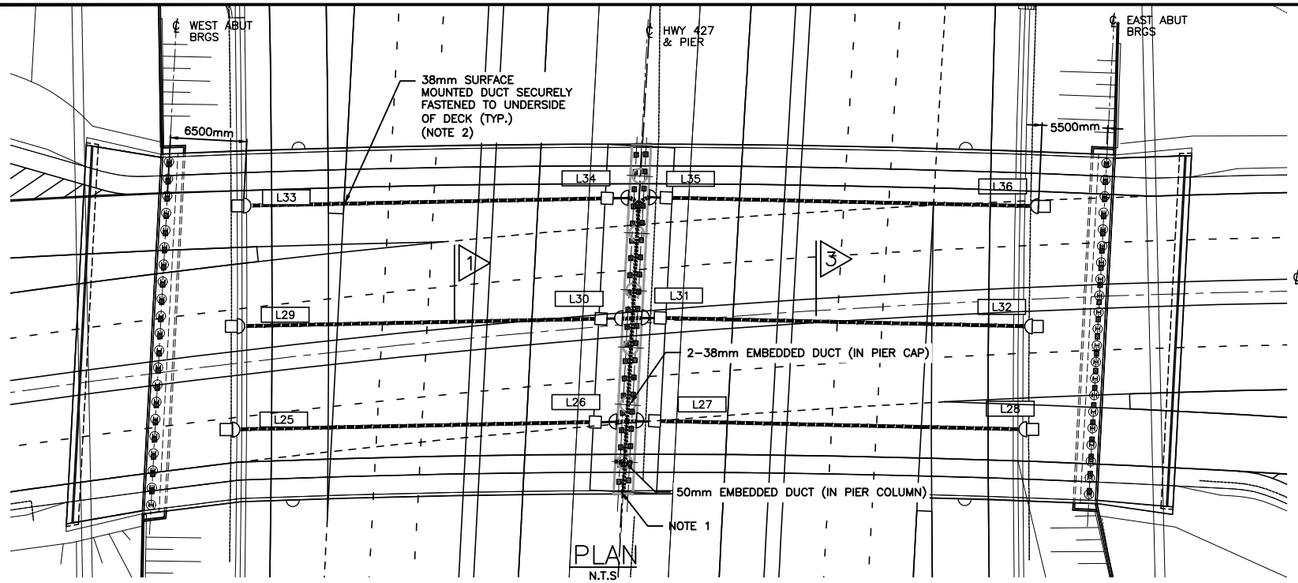
Ontario

link427 LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

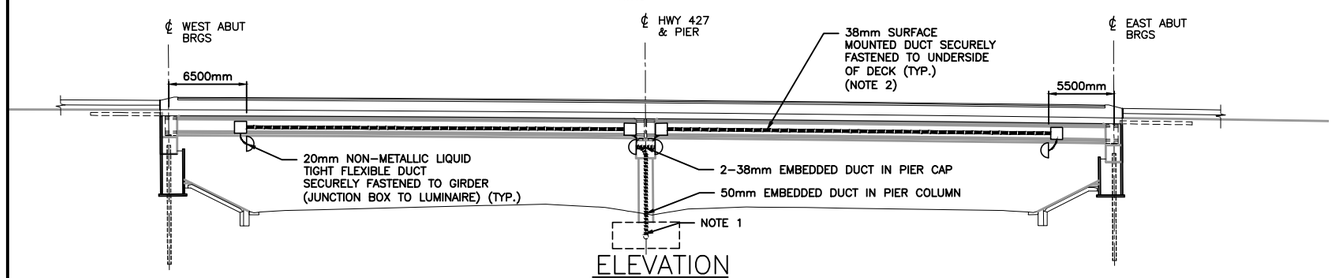
TITLE

HWY 427 EXPANSION
HWY 427 AT ZENWAY BLVD.
UNDERPASS LAYOUT - 2

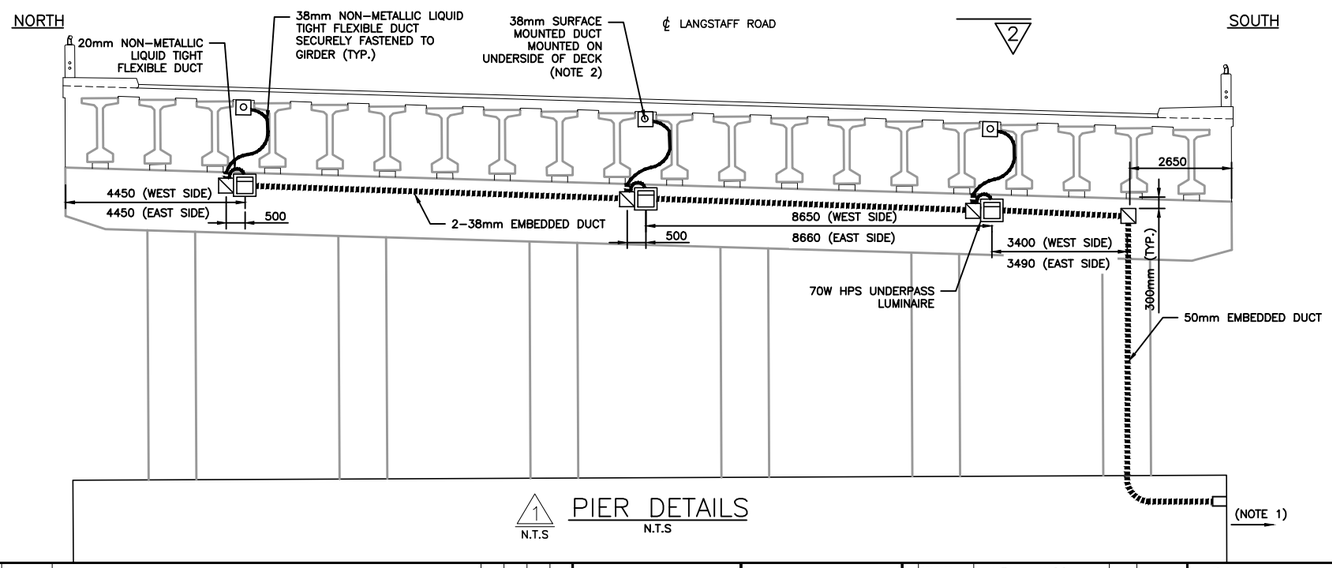
PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	6	ELE	000	DWG	1025	A



PLAN
N.T.S



ELEVATION
N.T.S



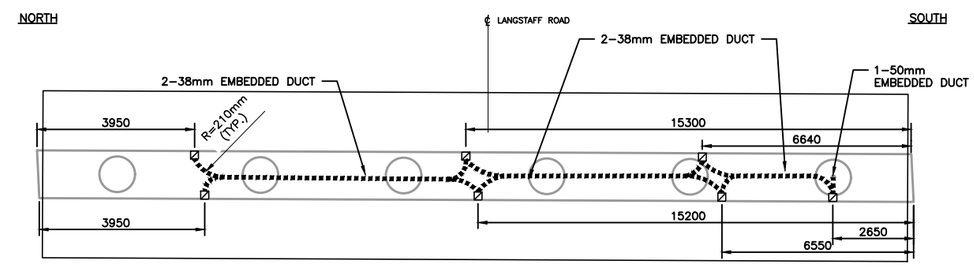
1 N.T.S PIER DETAILS
N.T.S

LEGEND:

- ☐ SURFACE MOUNTED RIGID PVC JUNCTION BOX TYPE P4-6 MOUNTED ON DECK (REFER TO OPSD 2300.030)
- ⧅ EMBEDDED RIGID PVC JUNCTION BOX TYPE P2-6 1N PIER CAP (REFER TO OPSD 2300.020)
- D 70W HPS UNDERPASS LUMINAIRE

NOTE(S):

1. REFER TO ELECTRICAL LAYOUT FOR MORE INFORMATION.
2. DUCT SHALL BE SECURELY FASTENED TO THE STRUCTURE / LUMINAIRE PLATE AT MINIMUM INTERVALS AS REQUIRED BY THE ELECTRICAL CODE.



2 PIER CAP

NO.	DATE	REVISIONS	BY	CHK	LEAD DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE : N.T.S

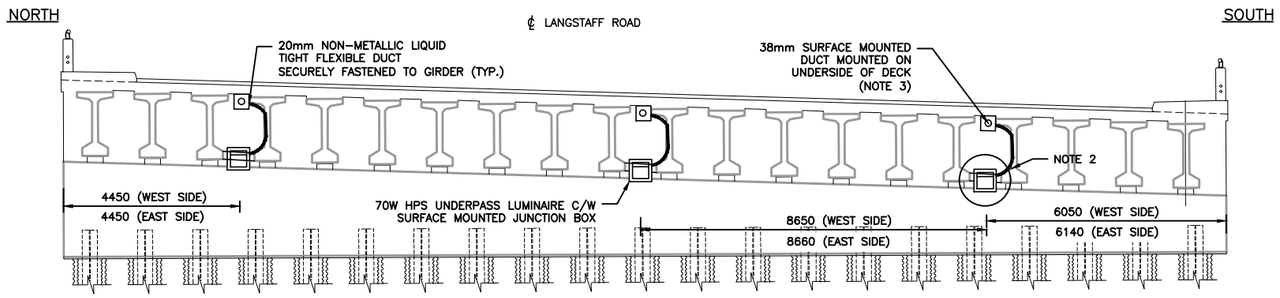
CONSULTANT			
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENG.	MARIO TEDESCO		
APPROVED PROJ. MANAGER			
	NAME (PRINT)	INIT.	DATE

Ontario

link427 LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE
HWY 427 EXPANSION
HWY 427 AT LANGSTAFF ROAD.
UNDERPASS LAYOUT - 3

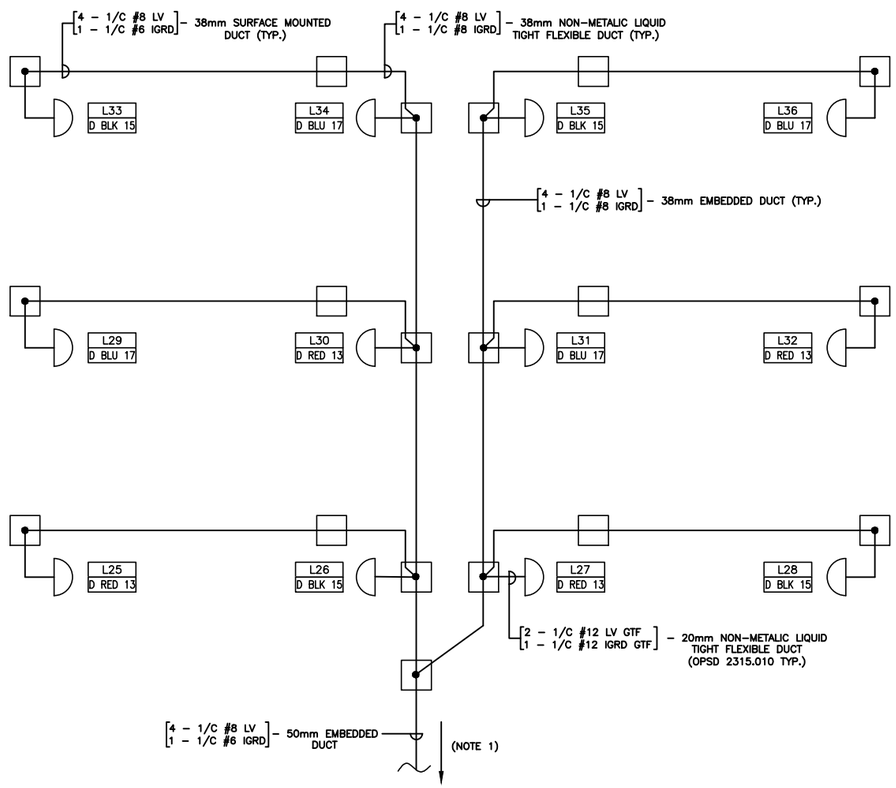
PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	6	ELE	000	DWG	1026	A



3 ABUTMENT DETAILS

N.T.S

N.T.S



UNDERPASS LIGHTING WIRING DIAGRAM

N.T.S

NOTE(S):

1. REFER TO ELECTRICAL LAYOUT FOR MORE INFORMATION.
2. REFER TO DETAIL 'A' ON UNDERPASS LAYOUT –5 FOR MOUNTING BRACKET DETAILS.
3. DUCT SHALL BE SECURELY FASTENED TO THE STRUCTURE / LUMINAIRE PLATE AT MINIMUM INTERVALS AS REQUIRED BY THE ELECTRICAL CODE.

NO.	DATE	REVISIONS	BY	CHK	LEAD DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE : N.T.S

CONSULTANT			
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENG.	MARIO TEDESCO		
APPROVED PROJ. MANAGER			
	NAME (PRINT)	INIT.	DATE

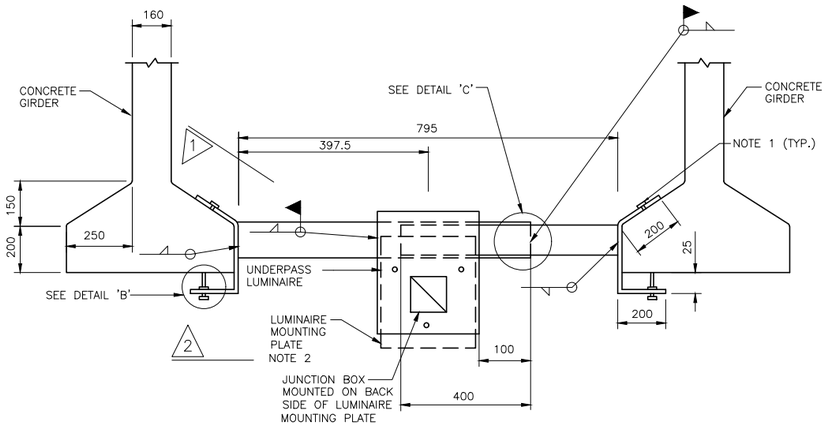
Ontario

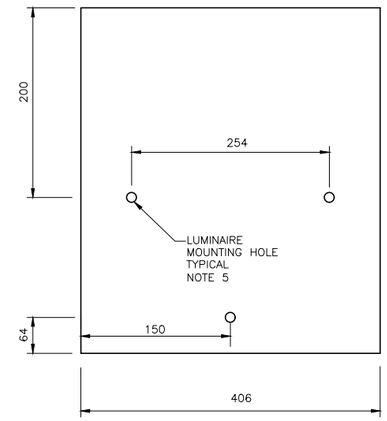
link427 LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION
HWY 427 AT LANGSTAFF ROAD.
UNDERPASS LAYOUT - 4

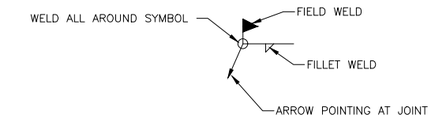
PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	6	ELE	000	DWG	1027	A





LUMINAIRE MOUNTING PLATE

SUPPLEMENTARY LEGEND:



GENERAL NOTE(S):

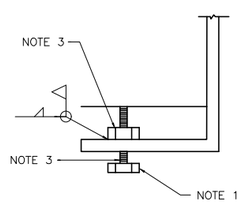
A. ALL STEEL AND HARDWARE SHALL BE HOT DIPPED GALVANIZED. COLD GALVANIZING SHALL BE APPLIED LOCALLY WHERE WELDING ON SITE IS REQUIRED.

B. ALL WELDS SHALL CONFORM TO CSA W59–M1989.

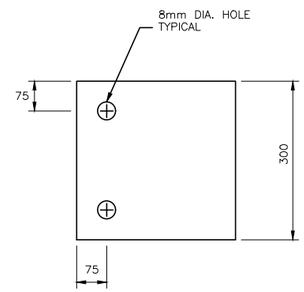
C. ALL FILLET WELDS SHALL BE 6mm.

NOTE(S):

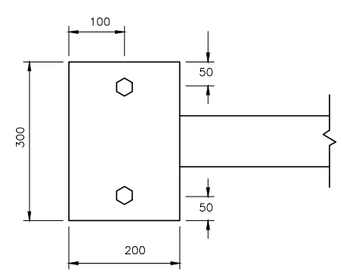
1. HEXAGONAL HEAD SET SCREWS SHALL BE M16–A325.
2. LUMINAIRE MOUNTING PLATE AND END PLATES SHALL BE FABRICATED FROM 6mm STEEL.
3. TACK WELD NUT TO BOLT AFTER BOLT HAS BEEN TIGHTENED IN PLACE.
4. REMOVE GALVANIZING ON SURFACES SHOWN PRIOR TO PERFORMING FIELD WELD.
5. CONTRACTOR SHALL VERIFY MOUNTING HOLE LOCATION AND SIZE PRIOR TO MANUFACTURING BRACKETS.



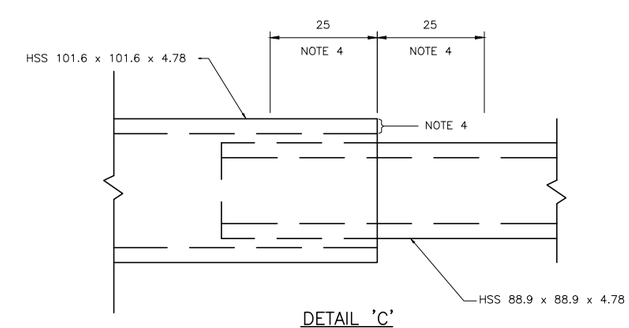
DETAIL 'B'



SECTION 1



SECTION 2



DETAIL 'C'

DETAIL 'A'

UNDERPASS LUMINAIRE MOUNTING BRACKET BETWEEN GIRDERS

N.T.S.

NO.	DATE	REVISIONS	BY	CHK	LEAD DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

N.T.S

CONSULTANT				
	DESIGNED	NATALIA MAHABIR		
	DRAWN	KARMJIT GILL		
	CHECKED	LENNOX LUE		
	APPROVED LEAD ENG.	MARIO TEDESCO		
	APPROVED PROJ. MANAGER			
		NAME (PRINT)	INIT.	DATE

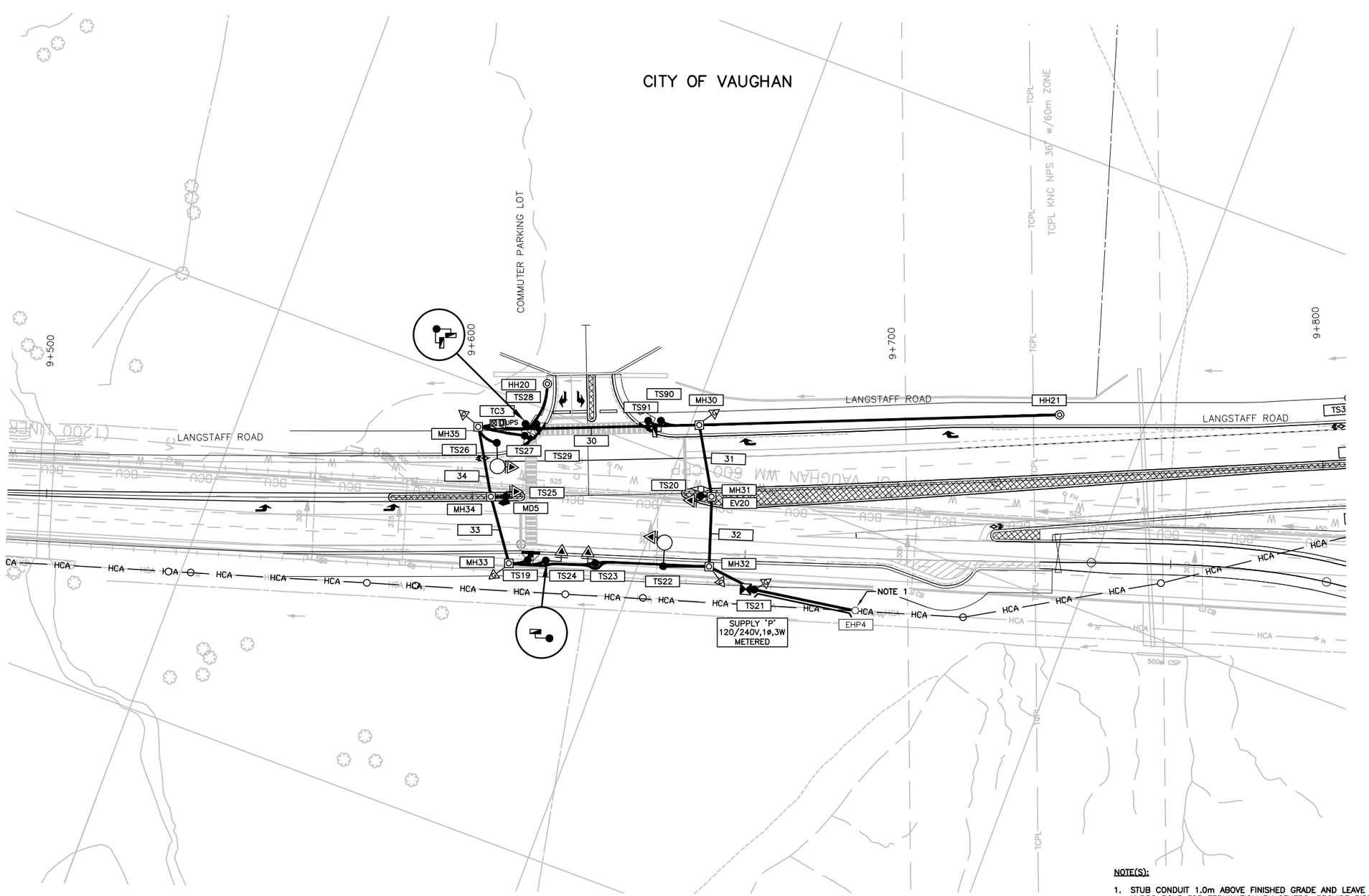
Ontario

link427 LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION
HWY 427 AT LANGSTAFF ROAD.
UNDERPASS LAYOUT - 5

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	F	6	ELE	000	DWG	1027A	A



NOTE(S):

1. STUB CONDUIT 1.0m ABOVE FINISHED GRADE AND LEAVE 15.0m OF CABLE COILED AT HYDRO POLE FOR TERMINATION BY OTHERS. PROVIDE RISER CONDUIT AND SERVICE ENTRANCE FITTING C/W ALL MOUNTING HARDWARE FOR INSTALLATION ONTO HYDRO POLE BY OTHERS. COORDINATE WORK WITH LOCAL HYDRO AUTHORITY.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	MANPREET PANESAR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

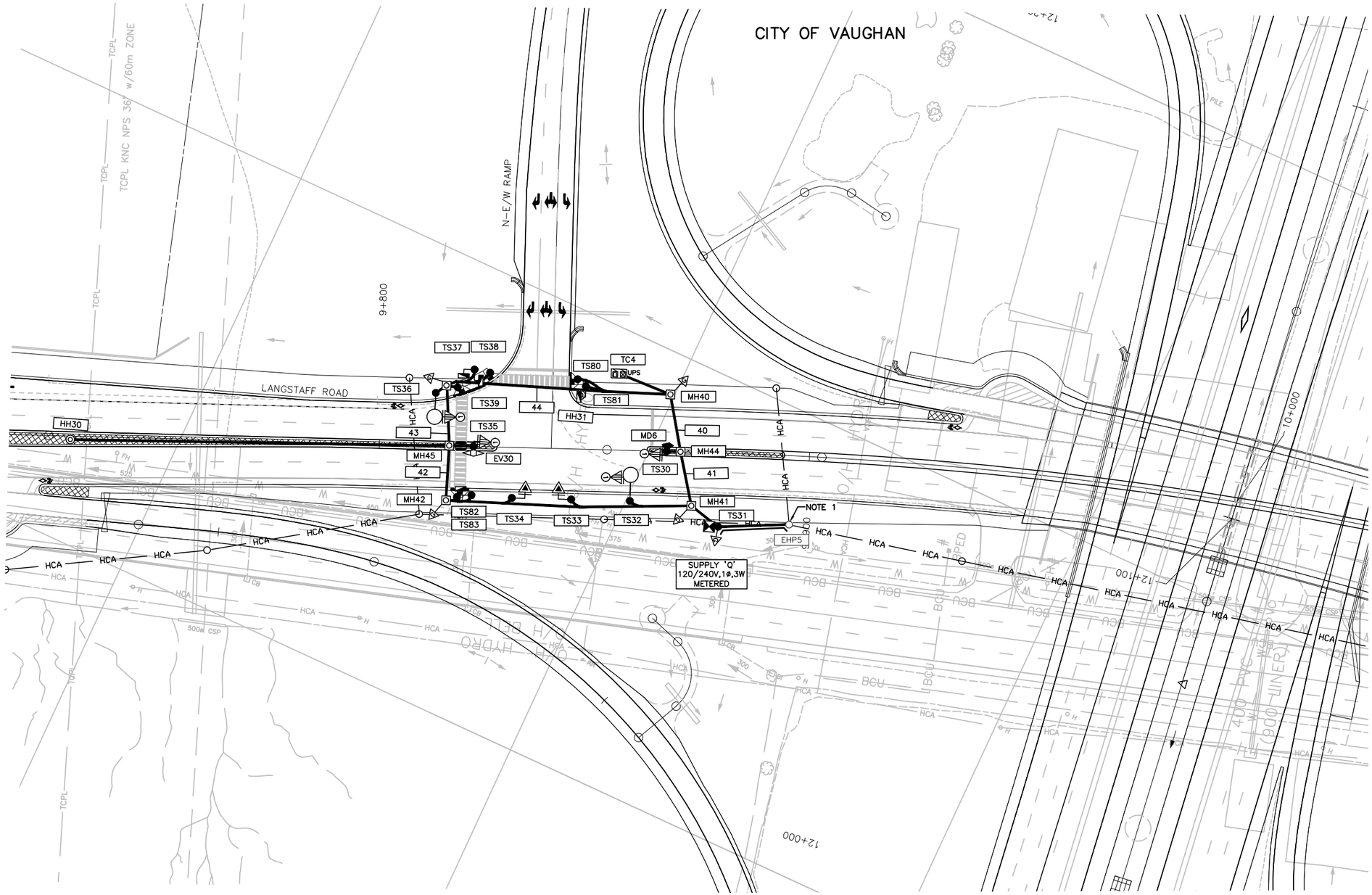
link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

TRAFFIC SIGNAL LAYOUT - 1
LANGSTAFF RD. & COMMUTER PARKING LOT

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	6	ELE	000	DWG	1028	A



NOTE(S):

1. STUB CONDUIT 1.0m ABOVE FINISHED GRADE AND LEAVE 15.0m OF CABLE COILED AT HYDRO POLE FOR TERMINATION BY OTHERS. PROVIDE RISER CONDUIT AND SERVICE ENTRANCE FITTING C/W ALL MOUNTING HARDWARE FOR INSTALLATION ONTO HYDRO POLE BY OTHERS. COORDINATE WORK WITH LOCAL HYDRO AUTHORITY.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	MANPREET PANESAR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

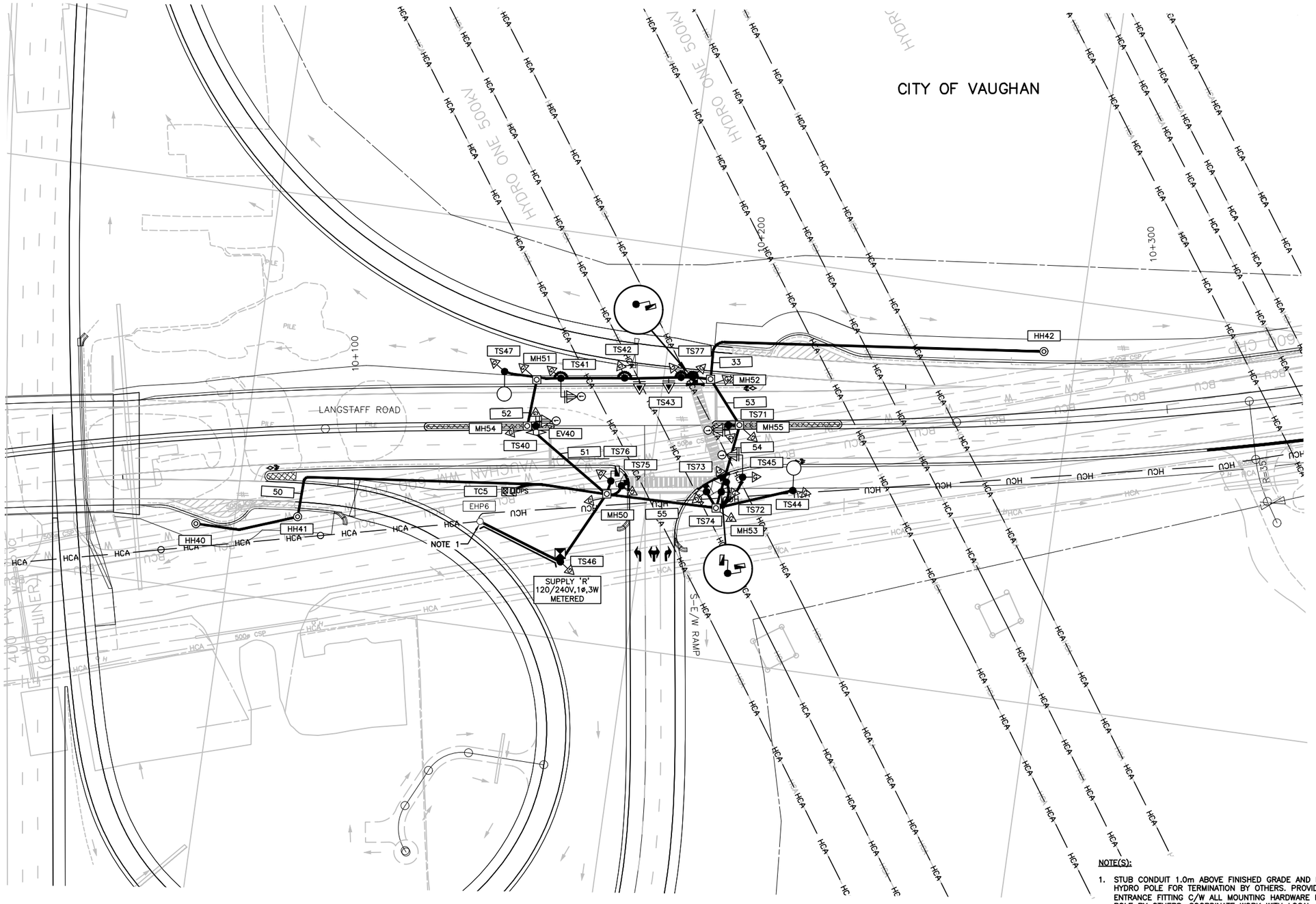
link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

TRAFFIC SIGNAL LAYOUT - 2
LANGSTAFF RD. & N-W/E RAMP

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	6	ELE	000	DWG	1029	A



NOTE(S):

1. STUB CONDUIT 1.0m ABOVE FINISHED GRADE AND LEAVE 15.0m OF CABLE COILED AT HYDRO POLE FOR TERMINATION BY OTHERS. PROVIDE RISER CONDUIT AND SERVICE ENTRANCE FITTING C/W ALL MOUNTING HARDWARE FOR INSTALLATION ONTO HYDRO POLE BY OTHERS. COORDINATE WORK WITH LOCAL HYDRO AUTHORITY.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	MANPREET PANESAR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

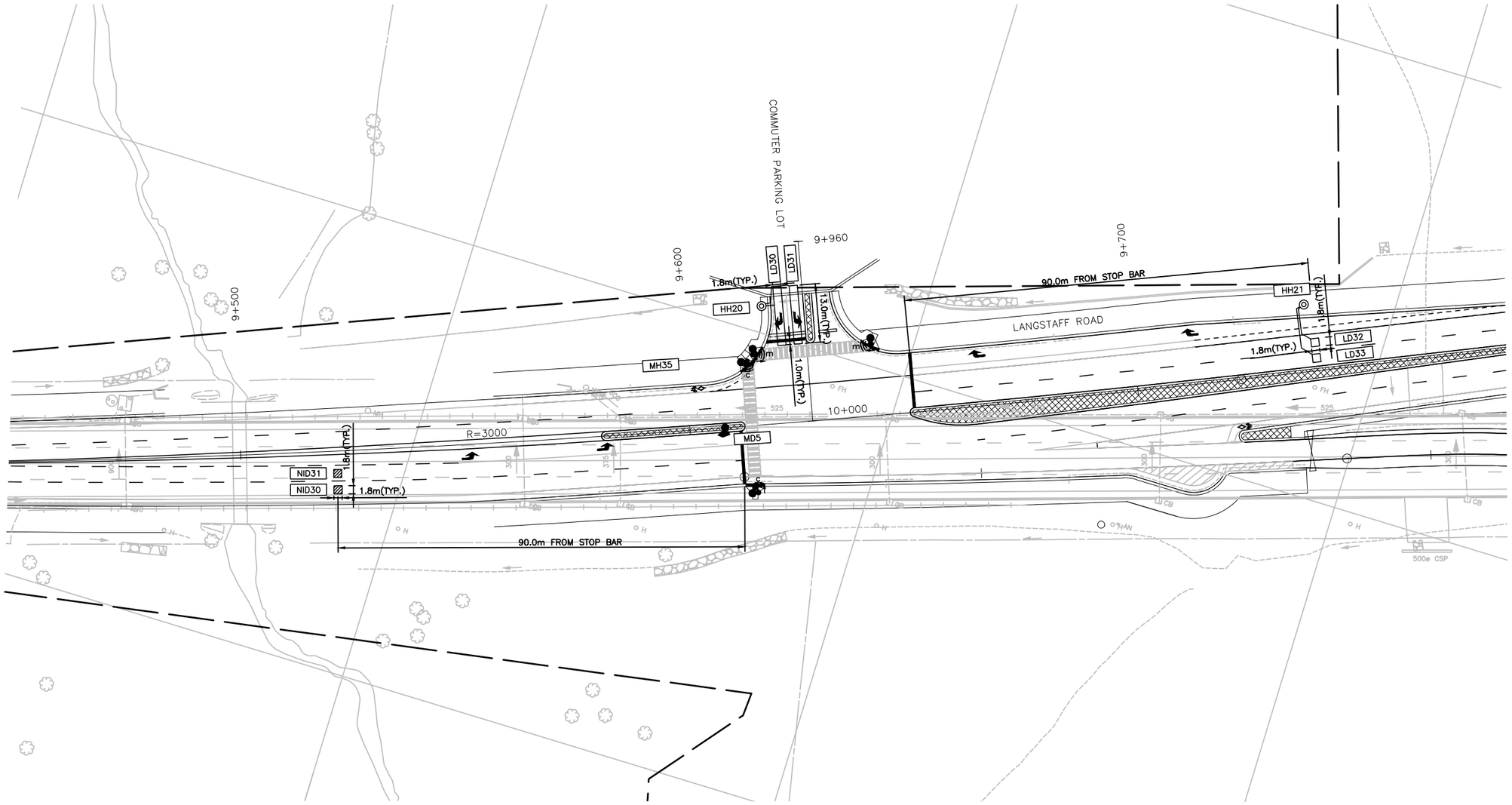
TRAFFIC SIGNAL LAYOUT - 3
LANGSTAFF RD. & HWY 427 S-E/W RAMP

PROJECT ID.	STAGE IDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	6	ELE	000	DWG	1030	A

CITY OF VAUGHAN

GENERAL NOTE(S):

A. ALL DETECTION ZONES AND LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES. LOOPS SHALL BE INSTALLED IN UPPER BINDER COURSE PRIOR TO CONSTRUCTION OF FINAL PAVEMENT COURSE.



NO.	DATE	REVISIONS	BY	CHK	LEAD. DSG.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	MANPREET PANESAR	M.P.	
DRAWN	KARMJIT GILL	K.G.	
CHECKED	LENNOX LUE	L.L.	
APPROVED LEAD ENGINEER	MARIO TEDESCO	M.T.	
APPROVED PROJ. MANAGER			

Ontario

link427

LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

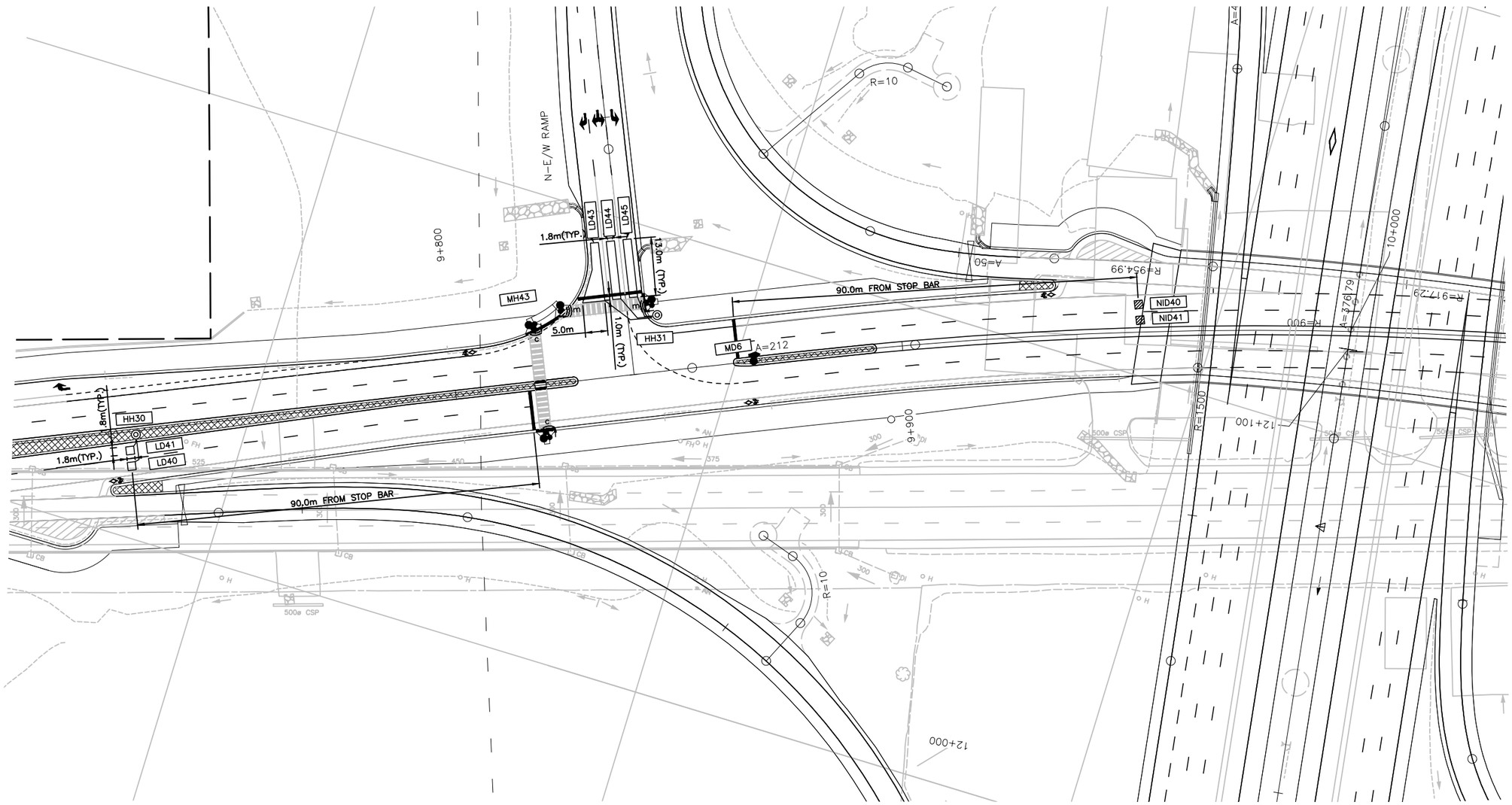
DETECTOR LAYOUT - 1
LANGSTAFF RD. & COMMUTER PARKING LOT

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	6	ELE	000	DWG	1031	A

CITY OF VAUGHAN

GENERAL NOTE(S):

A. ALL DETECTION ZONES AND LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES. LOOPS SHALL BE INSTALLED IN UPPER BINDER COURSE PRIOR TO CONSTRUCTION OF FINAL PAVEMENT COURSE.



NO.	DATE	REVISIONS	BY	CHK	LEAD. DSC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres HORIZONTAL

CONSULTANT

DESIGNED	MANPREET PANESAR	M.P.	
DRAWN	KARMJIT GILL	K.G.	
CHECKED	LENNOX LUE	L.L.	
APPROVED LEAD ENGINEER	MARIO TEDESCO	M.T.	
APPROVED PROJ. MANAGER			
	NAME (PRINT)	INIT.	DATE

Ontario

link427

LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

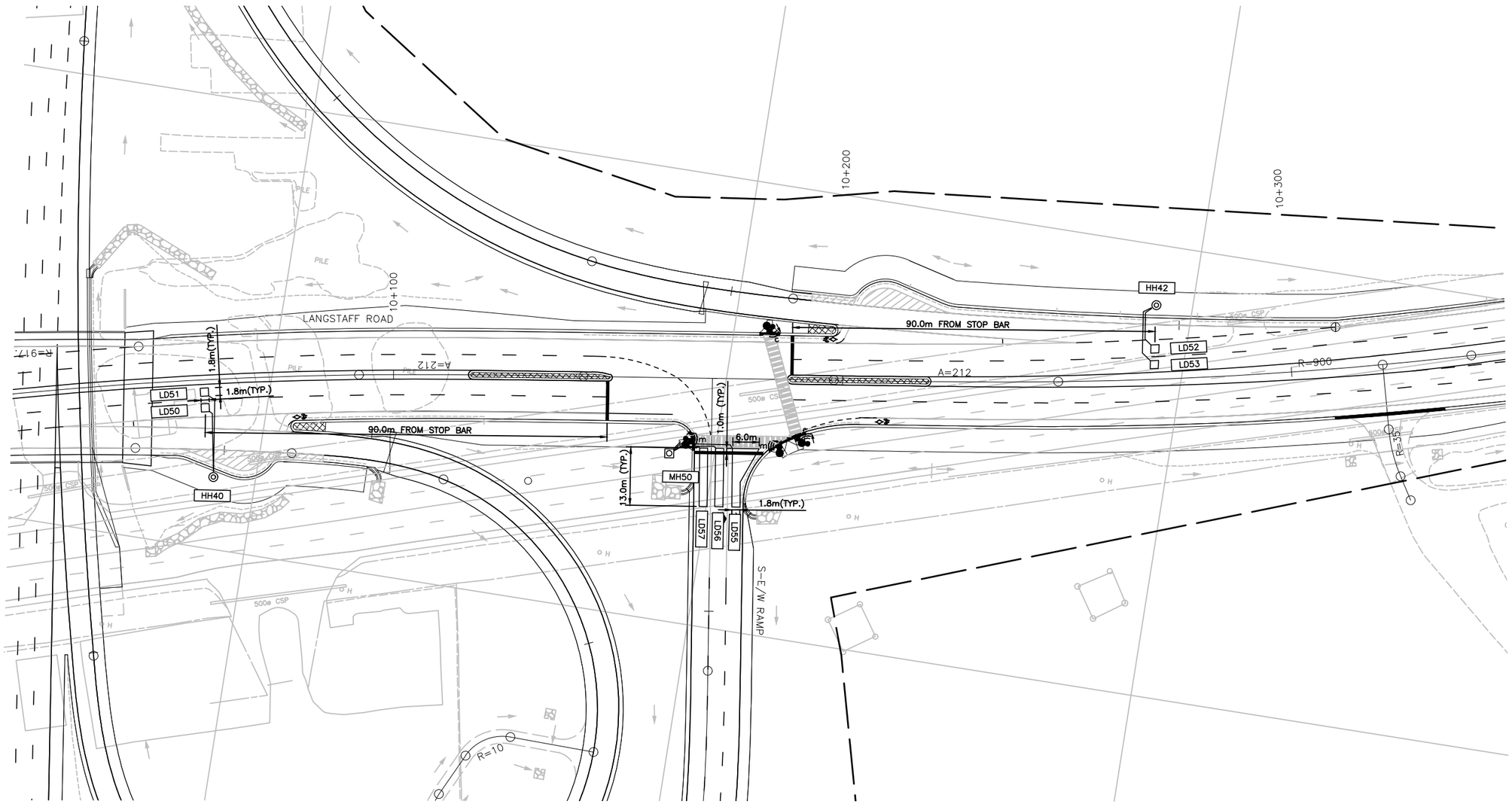
DETECTOR LAYOUT - 2
LANGSTAFF RD. & N-E/W RAMP

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	6	ELE	000	DWG	1032	A

CITY OF VAUGHAN

GENERAL NOTE(S):

A. ALL DETECTION ZONES AND LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES. LOOPS SHALL BE INSTALLED IN UPPER BINDER COURSE PRIOR TO CONSTRUCTION OF FINAL PAVEMENT COURSE.



NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	MANPREET PANESAR	M.P.	
DRAWN	KARMJIT GILL	K.G.	
CHECKED	LENNOX LUE	L.L.	
APPROVED LEAD ENGINEER	MARIO TEDESCO	M.T.	
APPROVED PROJ. MANAGER			

Ontario

link427

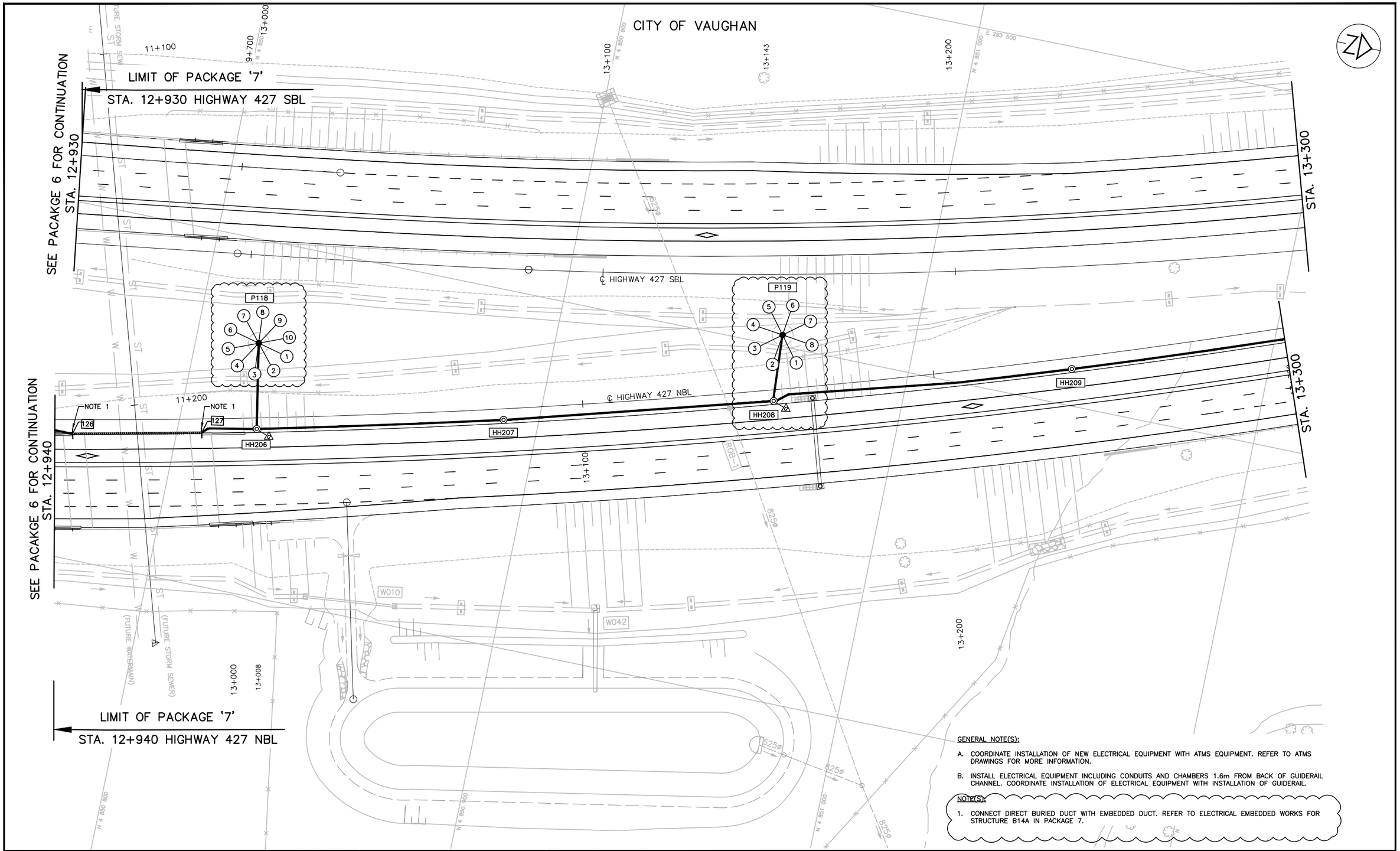
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

DETECTOR LAYOUT - 3
LANGSTAFF RD. & S-E/W RAMP

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	6	ELE	000	DWG	1033	A



GENERAL NOTE(S):

A. COORDINATE INSTALLATION OF NEW ELECTRICAL EQUIPMENT WITH ATMS EQUIPMENT. REFER TO ATMS DRAWINGS FOR MORE INFORMATION.

B. INSTALL ELECTRICAL EQUIPMENT INCLUDING CONDUITS AND CHAMBERS 1.6m FROM BACK OF GUIDERAIL CHANNEL. COORDINATE INSTALLATION OF ELECTRICAL EQUIPMENT WITH INSTALLATION OF GUIDERAIL.

NOTE(S):

1. CONNECT DIRECT BURIED DUCT WITH EMBEDDED DUCT. REFER TO ELECTRICAL EMBEDDED WORKS FOR STRUCTURE B14A IN PACKAGE 7.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
B	19/01/25	50% SUBMISSION TO CA				
A	18/04/25	50% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

ELECTRICAL LAYOUT - 1
STA. 12+930 SBL TO STA. 13+300
STA. 12+940 NBL TO STA. 13+300

PROJECT ID.	STAGE IDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	F	7	ELE	000	DWG	1008	B

CITY OF VAUGHAN

GENERAL NOTE(S):

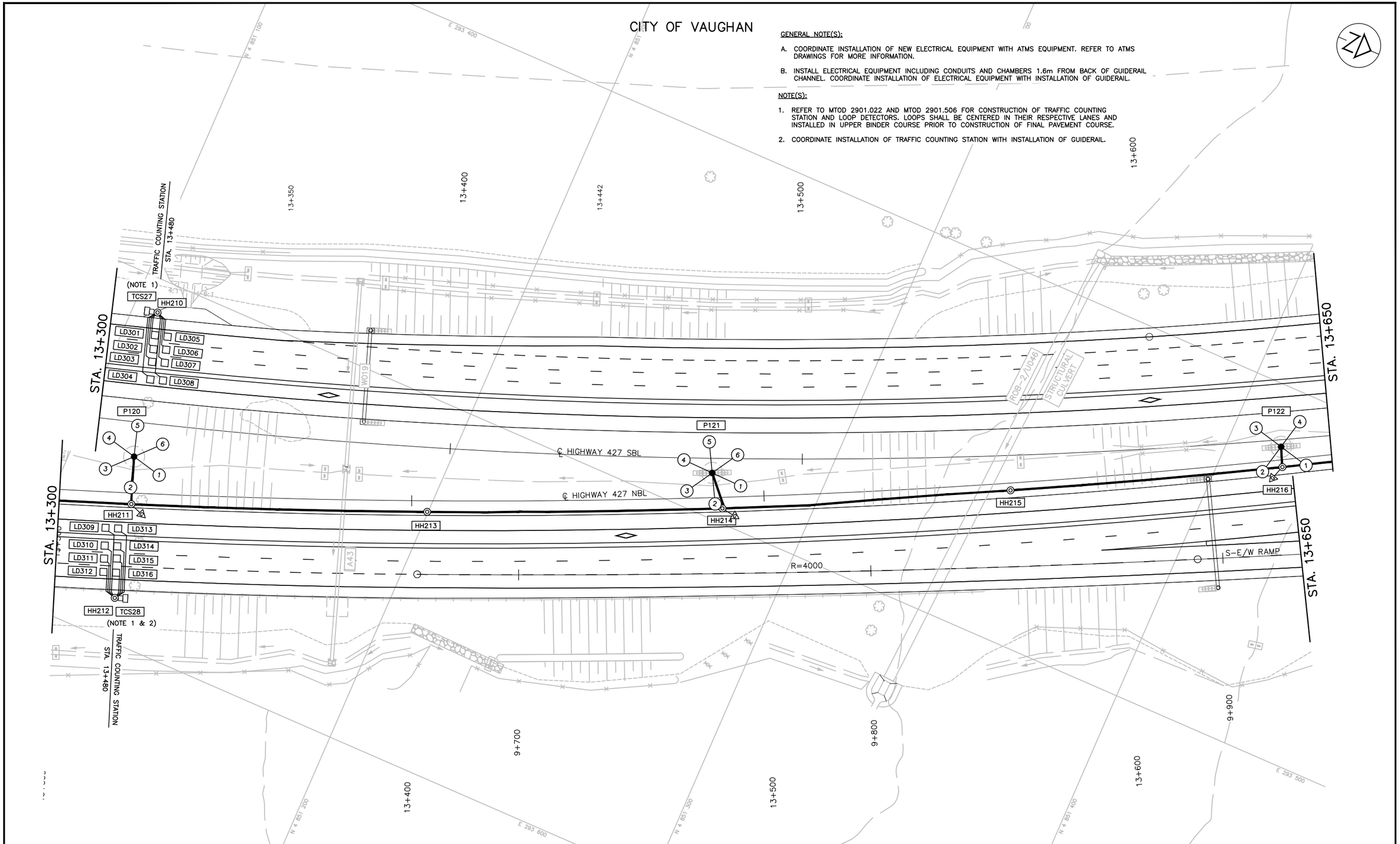
A. COORDINATE INSTALLATION OF NEW ELECTRICAL EQUIPMENT WITH ATMS EQUIPMENT. REFER TO ATMS DRAWINGS FOR MORE INFORMATION.

B. INSTALL ELECTRICAL EQUIPMENT INCLUDING CONDUITS AND CHAMBERS 1.6m FROM BACK OF GUIDERAIL CHANNEL. COORDINATE INSTALLATION OF ELECTRICAL EQUIPMENT WITH INSTALLATION OF GUIDERAIL.

NOTE(S):

1. REFER TO MTOD 2901.022 AND MTOD 2901.506 FOR CONSTRUCTION OF TRAFFIC COUNTING STATION AND LOOP DETECTORS. LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES AND INSTALLED IN UPPER BINDER COURSE PRIOR TO CONSTRUCTION OF FINAL PAVEMENT COURSE.

2. COORDINATE INSTALLATION OF TRAFFIC COUNTING STATION WITH INSTALLATION OF GUIDERAIL.



NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	18/04/25	50% SUBMISSION TO CA				

SCALE :

5m 0 10m
Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

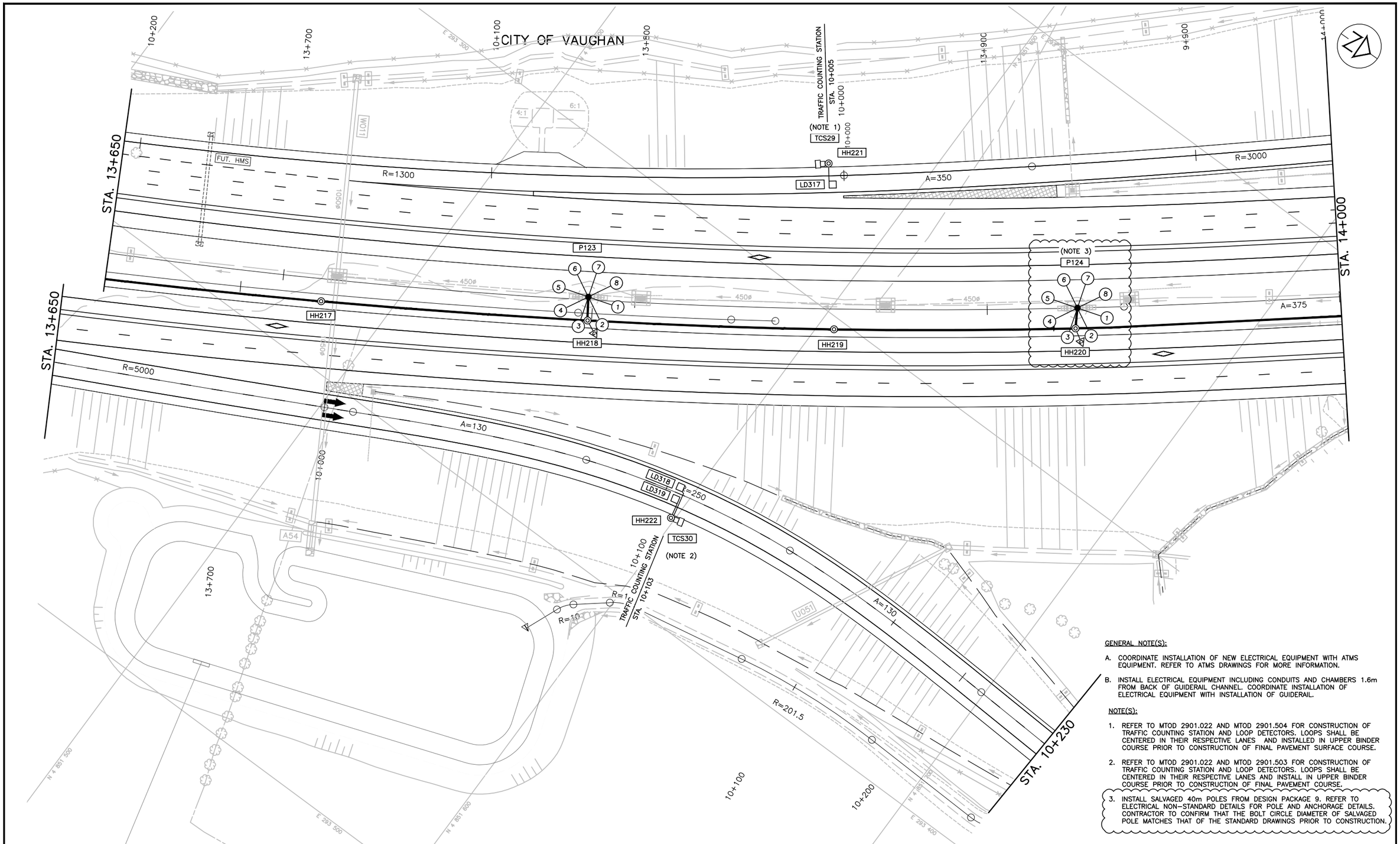
link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

ELECTRICAL LAYOUT - 2
STA. 13+300 TO STA. 13+650

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	F	7	ELE	000	DWG	1009	A



GENERAL NOTE(S):

A. COORDINATE INSTALLATION OF NEW ELECTRICAL EQUIPMENT WITH ATMS EQUIPMENT. REFER TO ATMS DRAWINGS FOR MORE INFORMATION.

B. INSTALL ELECTRICAL EQUIPMENT INCLUDING CONDUITS AND CHAMBERS 1.6m FROM BACK OF GUIDERAIL CHANNEL. COORDINATE INSTALLATION OF ELECTRICAL EQUIPMENT WITH INSTALLATION OF GUIDERAIL.

NOTE(S):

1. REFER TO MTOD 2901.022 AND MTOD 2901.504 FOR CONSTRUCTION OF TRAFFIC COUNTING STATION AND LOOP DETECTORS. LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES AND INSTALLED IN UPPER BINDER COURSE PRIOR TO CONSTRUCTION OF FINAL PAVEMENT SURFACE COURSE.

2. REFER TO MTOD 2901.022 AND MTOD 2901.503 FOR CONSTRUCTION OF TRAFFIC COUNTING STATION AND LOOP DETECTORS. LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES AND INSTALL IN UPPER BINDER COURSE PRIOR TO CONSTRUCTION OF FINAL PAVEMENT COURSE.

3. INSTALL SALVAGED 40m POLES FROM DESIGN PACKAGE 9. REFER TO ELECTRICAL NON–STANDARD DETAILS FOR POLE AND ANCHORAGE DETAILS. CONTRACTOR TO CONFIRM THAT THE BOLT CIRCLE DIAMETER OF SALVAGED POLE MATCHES THAT OF THE STANDARD DRAWINGS PRIOR TO CONSTRUCTION.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
B	19/01/25	50% SUBMISSION TO CA				
A	18/04/25	50% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

link427

LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

ELECTRICAL LAYOUT - 3
STA. 13+650 TO STA. 14+000

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	F	7	ELE	000	DWG	1010	B

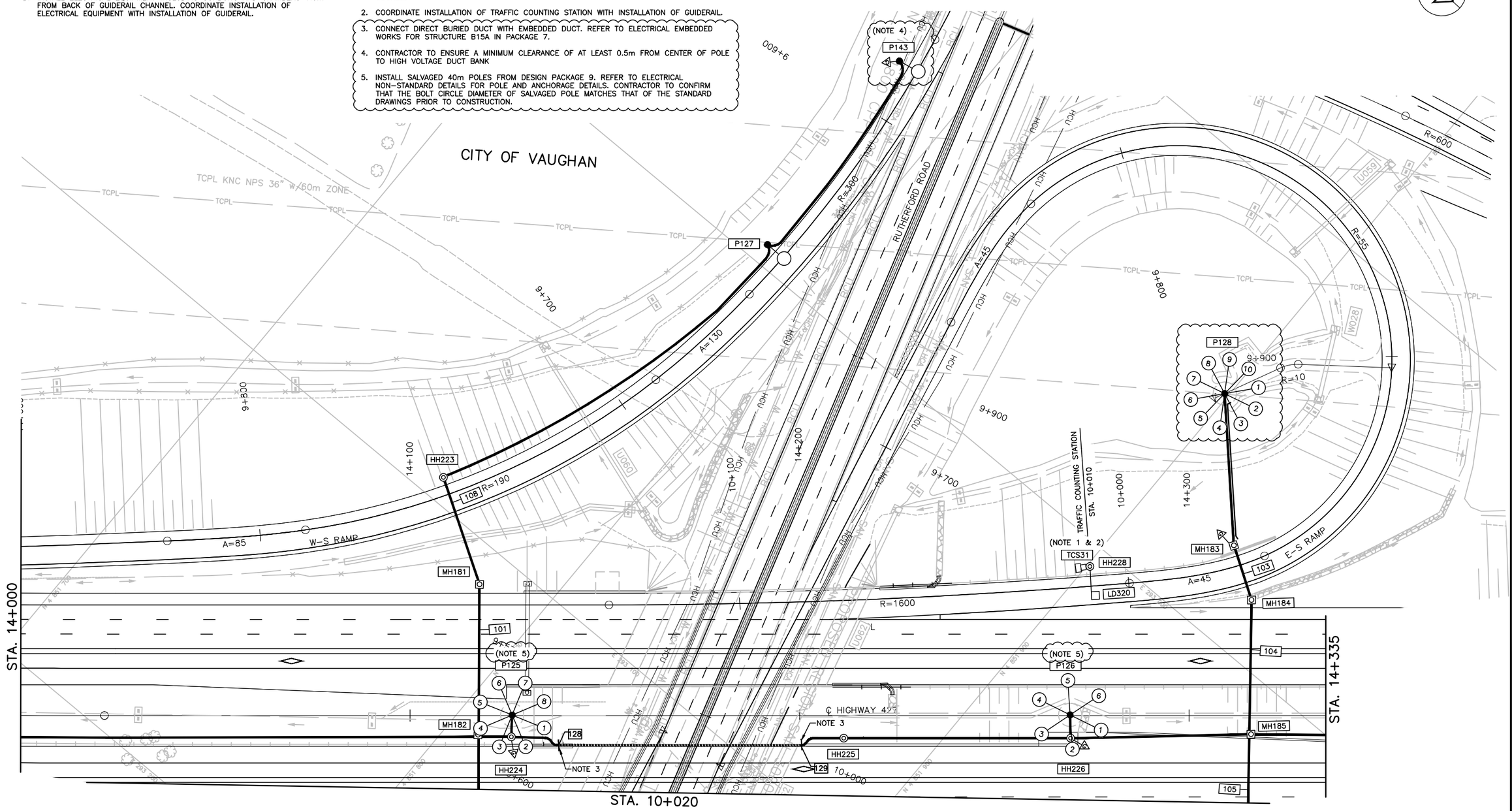
GENERAL NOTE(S):

A. COORDINATE INSTALLATION OF NEW ELECTRICAL EQUIPMENT WITH ATMS EQUIPMENT. REFER TO ATMS DRAWINGS FOR MORE INFORMATION.

B. INSTALL ELECTRICAL EQUIPMENT INCLUDING CONDUITS AND CHAMBERS 1.6m FROM BACK OF GUIDERAIL CHANNEL. COORDINATE INSTALLATION OF ELECTRICAL EQUIPMENT WITH INSTALLATION OF GUIDERAIL.

NOTE(S):

1. REFER TO MTOD 2901.022 AND MTOD 2901.504 FOR CONSTRUCTION OF TRAFFIC COUNTING STATION AND LOOP DETECTORS. LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES AND INSTALL IN UPPER BINDER COURSE PRIOR TO CONSTRUCTION OF FINAL PAVEMENT COURSE.
2. COORDINATE INSTALLATION OF TRAFFIC COUNTING STATION WITH INSTALLATION OF GUIDERAIL.
3. CONNECT DIRECT BURIED DUCT WITH EMBEDDED DUCT. REFER TO ELECTRICAL EMBEDDED WORKS FOR STRUCTURE B15A IN PACKAGE 7.
4. CONTRACTOR TO ENSURE A MINIMUM CLEARANCE OF AT LEAST 0.5m FROM CENTER OF POLE TO HIGH VOLTAGE DUCT BANK
5. INSTALL SALVAGED 40m POLES FROM DESIGN PACKAGE 9. REFER TO ELECTRICAL NON-STANDARD DETAILS FOR POLE AND ANCHORAGE DETAILS. CONTRACTOR TO CONFIRM THAT THE BOLT CIRCLE DIAMETER OF SALVAGED POLE MATCHES THAT OF THE STANDARD DRAWINGS PRIOR TO CONSTRUCTION.



NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
B	19/01/25	50% SUBMISSION TO CA				
A	18/04/25	50% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

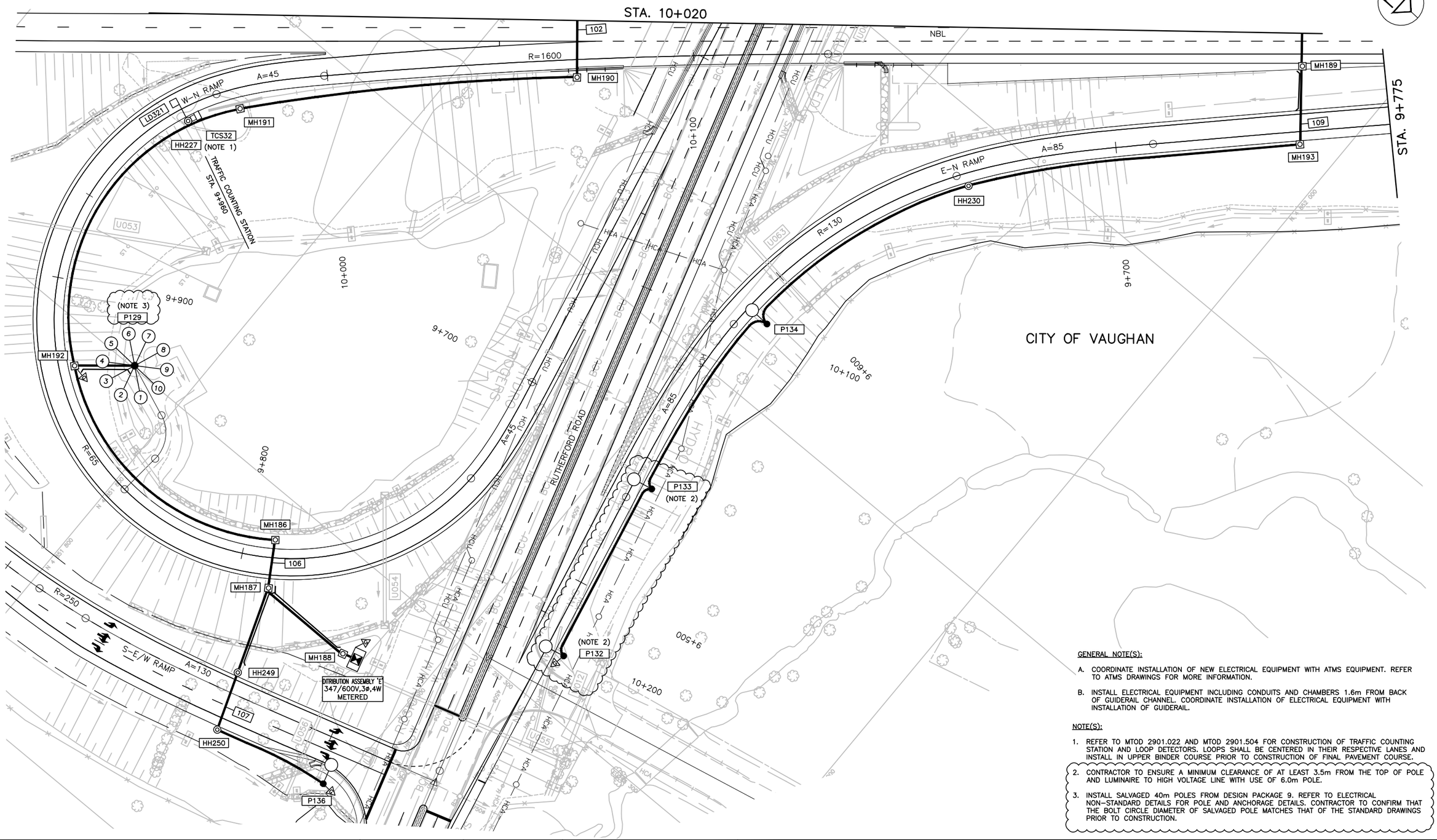
link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

ELECTRICAL LAYOUT - 4
STA. 14+000 TO STA. 14+335

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	F	7	ELE	000	DWG	1011	B



GENERAL NOTE(S):

A. COORDINATE INSTALLATION OF NEW ELECTRICAL EQUIPMENT WITH ATMS EQUIPMENT. REFER TO ATMS DRAWINGS FOR MORE INFORMATION.

B. INSTALL ELECTRICAL EQUIPMENT INCLUDING CONDUITS AND CHAMBERS 1.6m FROM BACK OF GUIDERAIL CHANNEL. COORDINATE INSTALLATION OF ELECTRICAL EQUIPMENT WITH INSTALLATION OF GUIDERAIL.

NOTE(S):

1. REFER TO MTOD 2901.022 AND MTOD 2901.504 FOR CONSTRUCTION OF TRAFFIC COUNTING STATION AND LOOP DETECTORS. LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES AND INSTALL IN UPPER BINDER COURSE PRIOR TO CONSTRUCTION OF FINAL PAVEMENT COURSE.
2. CONTRACTOR TO ENSURE A MINIMUM CLEARANCE OF AT LEAST 3.5m FROM THE TOP OF POLE AND LUMINAIRE TO HIGH VOLTAGE LINE WITH USE OF 6.0m POLE.
3. INSTALL SALVAGED 40m POLES FROM DESIGN PACKAGE 9. REFER TO ELECTRICAL NON-STANDARD DETAILS FOR POLE AND ANCHORAGE DETAILS. CONTRACTOR TO CONFIRM THAT THE BOLT CIRCLE DIAMETER OF SALVAGED POLE MATCHES THAT OF THE STANDARD DRAWINGS PRIOR TO CONSTRUCTION.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
B	19/01/25	50% SUBMISSION TO CA				
A	18/04/25	50% SUBMISSION TO CA				

SCALE :

5m 0 10m
Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

ELECTRICAL LAYOUT - 5
STA. 14+000 TO STA. 14+335

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	F	7	ELE	000	DWG	1012	B

GENERAL NOTE(S):

A. COORDINATE INSTALLATION OF NEW ELECTRICAL EQUIPMENT WITH ATMS EQUIPMENT. REFER TO ATMS DRAWINGS FOR MORE INFORMATION.

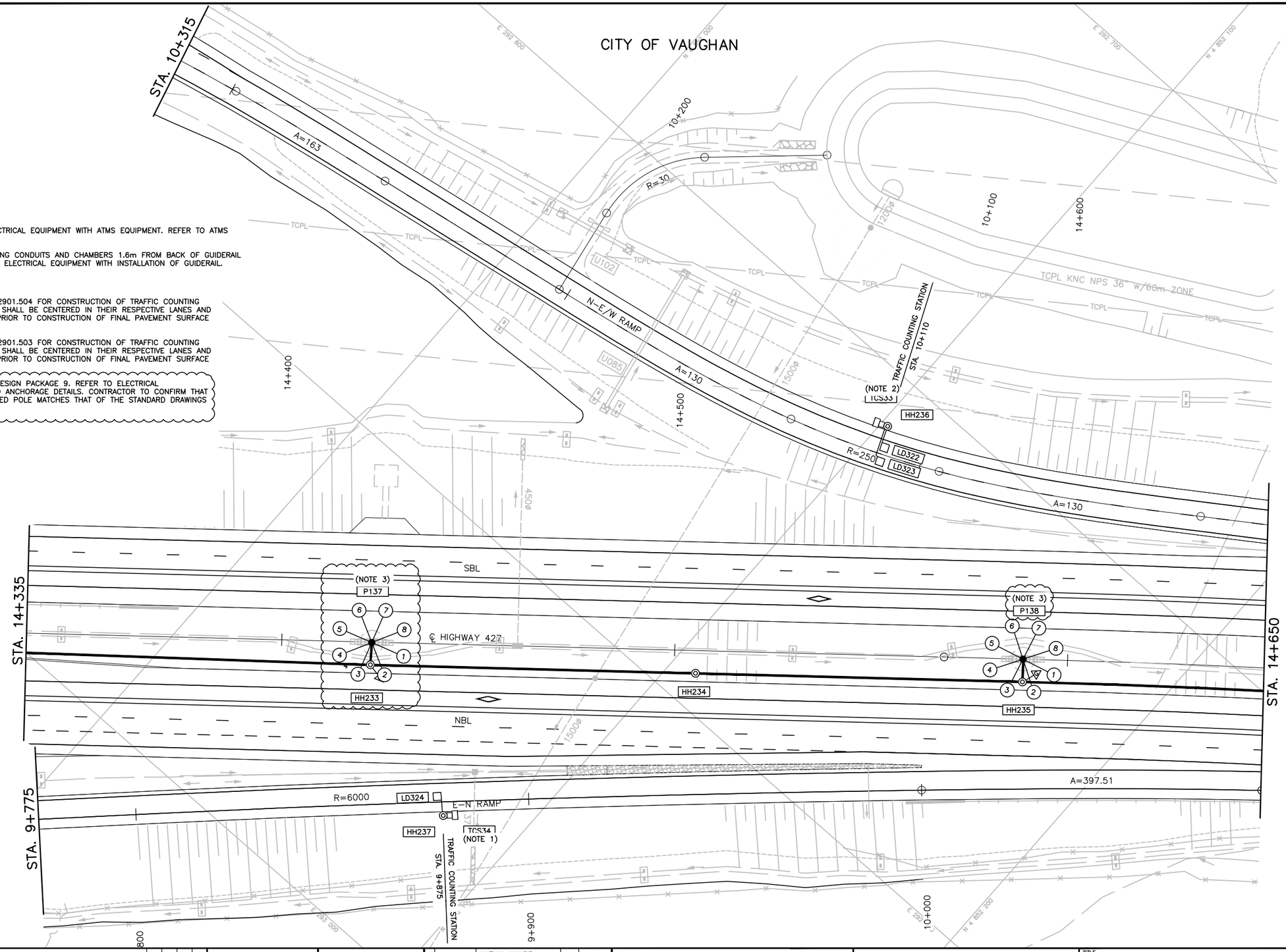
B. INSTALL ELECTRICAL EQUIPMENT INCLUDING CONDUITS AND CHAMBERS 1.6m FROM BACK OF GUIDERAIL CHANNEL. COORDINATE INSTALLATION OF ELECTRICAL EQUIPMENT WITH INSTALLATION OF GUIDERAIL.

NOTE(S):

1. REFER TO MTOD 2901.022 AND MTOD 2901.504 FOR CONSTRUCTION OF TRAFFIC COUNTING STATION AND LOOP DETECTORS. LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES AND INSTALLED IN UPPER BINDER COURSE PRIOR TO CONSTRUCTION OF FINAL PAVEMENT SURFACE COURSE.

2. REFER TO MTOD 2901.022 AND MTOD 2901.503 FOR CONSTRUCTION OF TRAFFIC COUNTING STATION AND LOOP DETECTORS. LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES AND INSTALLED IN UPPER BINDER COURSE PRIOR TO CONSTRUCTION OF FINAL PAVEMENT SURFACE COURSE.

3. INSTALL SALVAGED 40m POLES FROM DESIGN PACKAGE 9. REFER TO ELECTRICAL NON-STANDARD DETAILS FOR POLE AND ANCHORAGE DETAILS. CONTRACTOR TO CONFIRM THAT THE BOLT CIRCLE DIAMETER OF SALVAGED POLE MATCHES THAT OF THE STANDARD DRAWINGS PRIOR TO CONSTRUCTION.



NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
B	19/01/25	50% SUBMISSION TO CA				
A	18/04/25	50% SUBMISSION TO CA				

SCALE :

5m 0 10m
Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

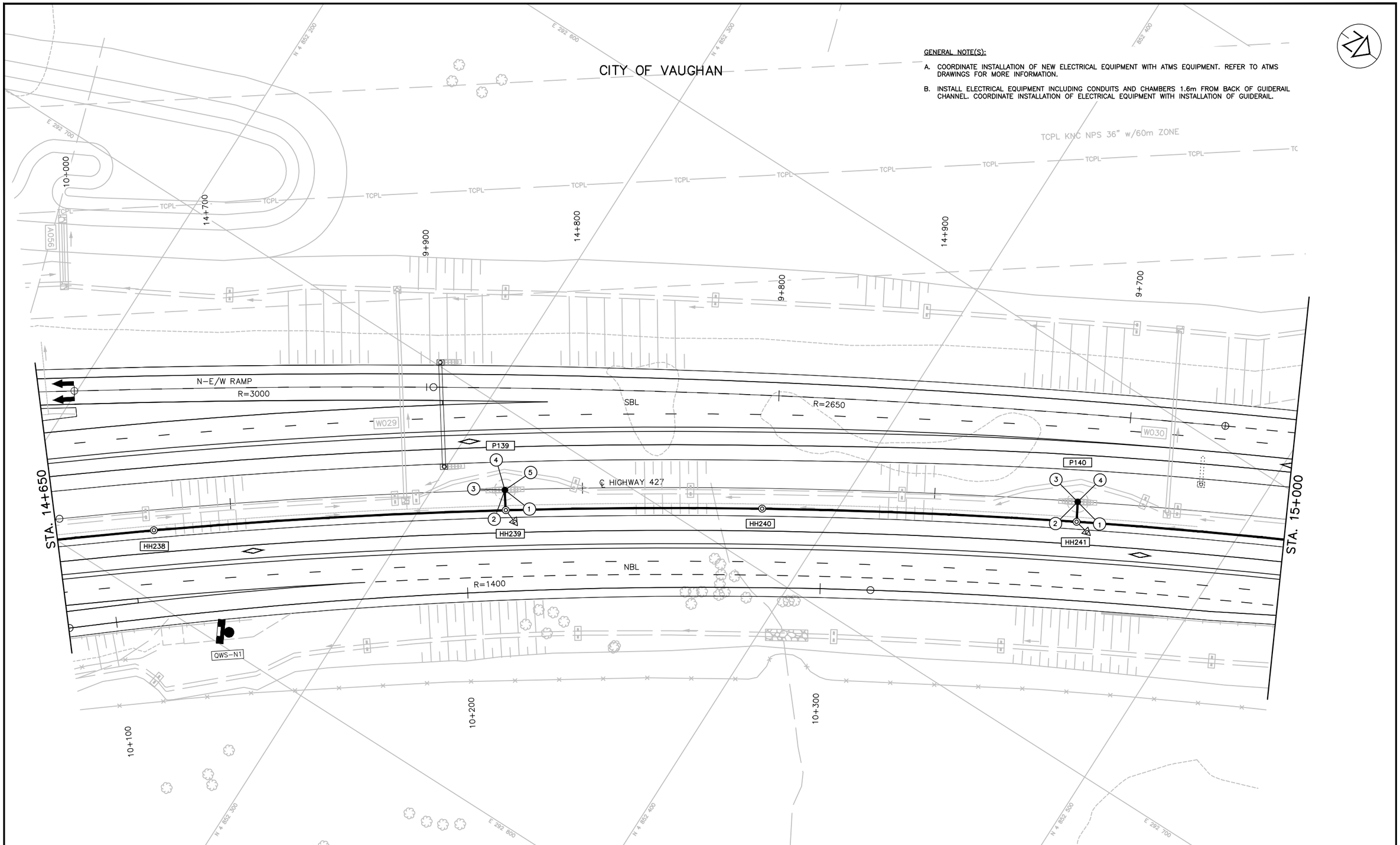
ELECTRICAL LAYOUT - 7
STA. 14+335 TO STA. 14+650

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	F	7	ELE	000	DWG	1013	B

GENERAL NOTE(S):

A. COORDINATE INSTALLATION OF NEW ELECTRICAL EQUIPMENT WITH ATMS EQUIPMENT. REFER TO ATMS DRAWINGS FOR MORE INFORMATION.

B. INSTALL ELECTRICAL EQUIPMENT INCLUDING CONDUITS AND CHAMBERS 1.6m FROM BACK OF GUIDERAIL CHANNEL. COORDINATE INSTALLATION OF ELECTRICAL EQUIPMENT WITH INSTALLATION OF GUIDERAIL.



NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	18/04/25	50% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres HORIZONTAL

CONSULTANT

DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			
	NAME (PRINT)	INIT.	DATE

Ontario

link427

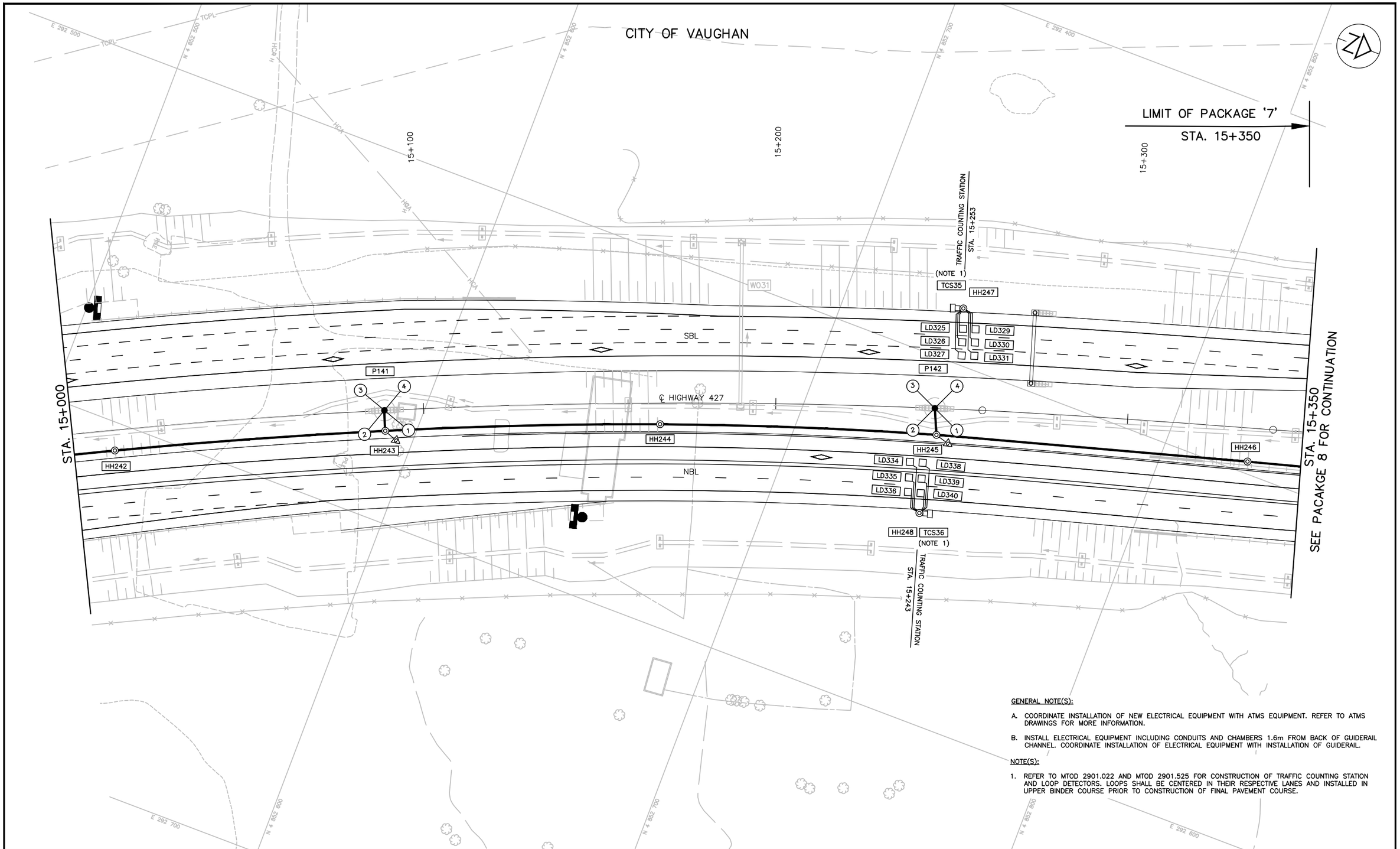
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

ELECTRICAL LAYOUT - 8
STA. 14+650 TO STA. 15+000

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	F	7	ELE	000	DWG	1014	A



GENERAL NOTE(S):

A. COORDINATE INSTALLATION OF NEW ELECTRICAL EQUIPMENT WITH ATMS EQUIPMENT. REFER TO ATMS DRAWINGS FOR MORE INFORMATION.

B. INSTALL ELECTRICAL EQUIPMENT INCLUDING CONDUITS AND CHAMBERS 1.6m FROM BACK OF GUIDERAIL CHANNEL. COORDINATE INSTALLATION OF ELECTRICAL EQUIPMENT WITH INSTALLATION OF GUIDERAIL.

NOTE(S):

1. REFER TO MTOD 2901.022 AND MTOD 2901.525 FOR CONSTRUCTION OF TRAFFIC COUNTING STATION AND LOOP DETECTORS. LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES AND INSTALLED IN UPPER BINDER COURSE PRIOR TO CONSTRUCTION OF FINAL PAVEMENT COURSE.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	18/04/25	50% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

link427

LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

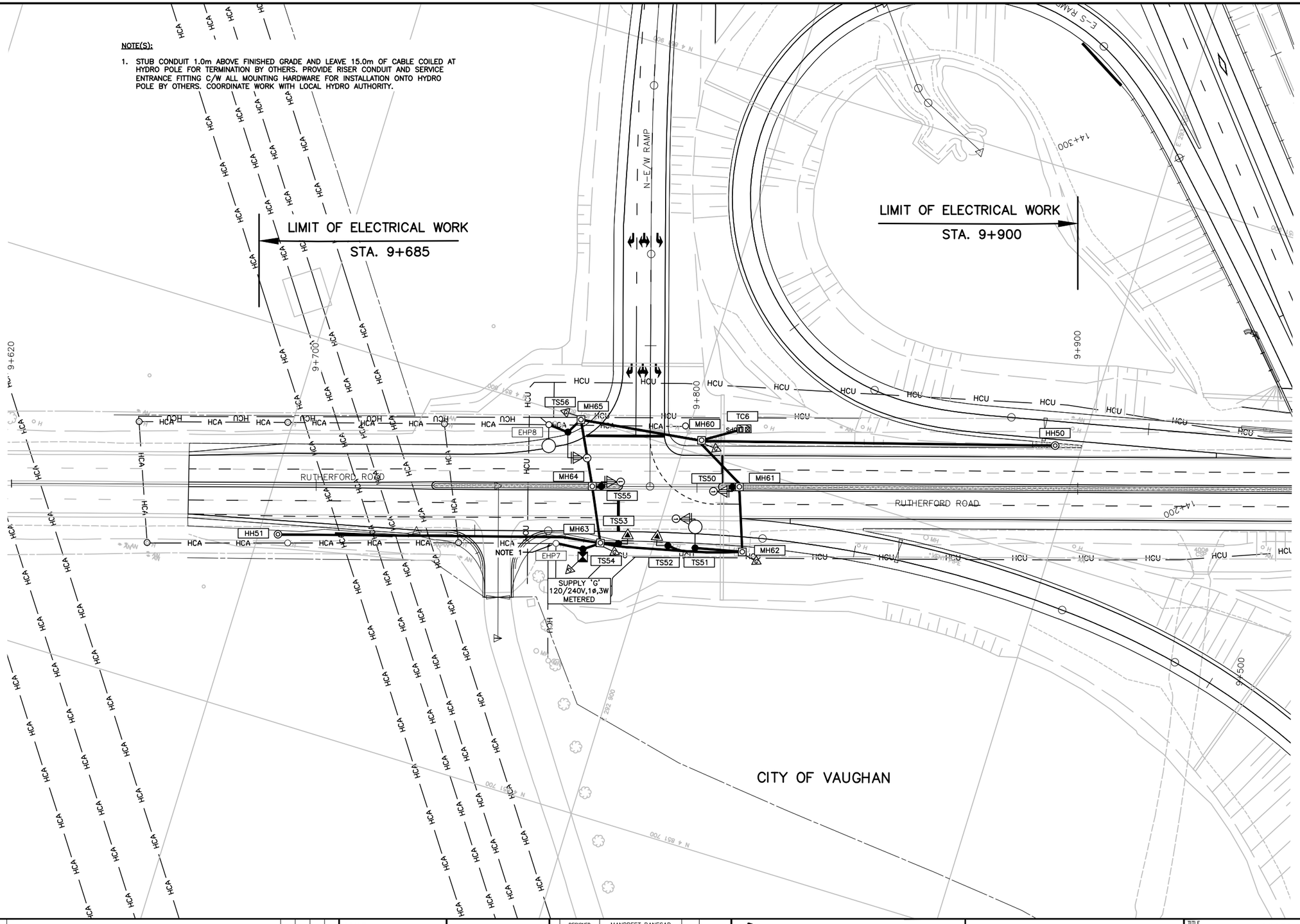
HWY 427 EXPANSION

ELECTRICAL LAYOUT - 9
STA. 15+000 TO STA. 15+350

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	F	7	ELE	000	DWG	1015	A

NOTE(S):

1. STUB CONDUIT 1.0m ABOVE FINISHED GRADE AND LEAVE 15.0m OF CABLE COILED AT HYDRO POLE FOR TERMINATION BY OTHERS. PROVIDE RISER CONDUIT AND SERVICE ENTRANCE FITTING C/W ALL MOUNTING HARDWARE FOR INSTALLATION ONTO HYDRO POLE BY OTHERS. COORDINATE WORK WITH LOCAL HYDRO AUTHORITY.



NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	18/04/25	50% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	MANPREET PANESAR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

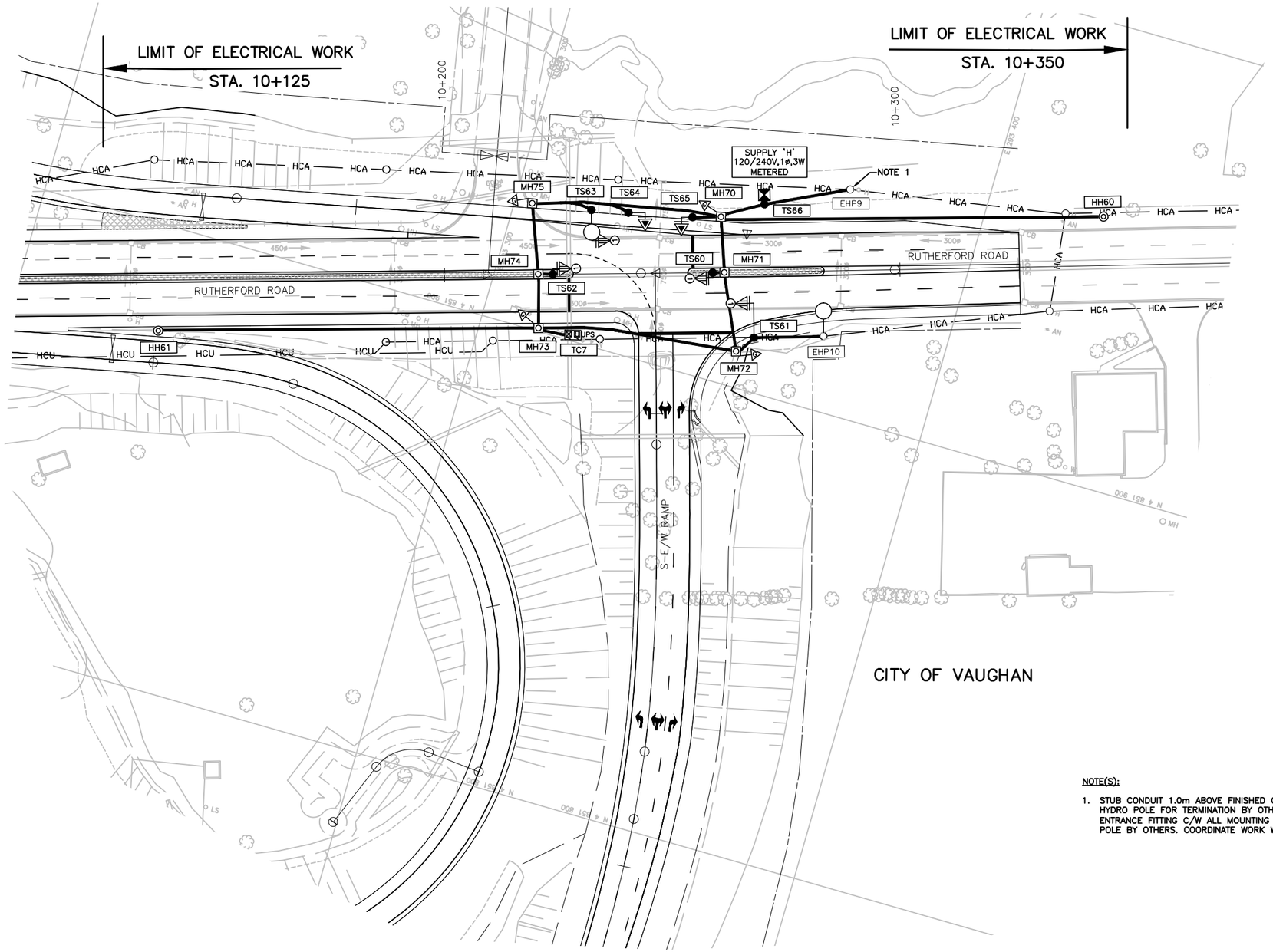
link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

TRAFFIC SIGNAL LAYOUT - 1
RUTHERFORD RD & N-E/W RAMP

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	F	7	ELE	000	DWG	1016	A



NOTE(S):

1. STUB CONDUIT 1.0m ABOVE FINISHED GRADE AND LEAVE 15.0m OF CABLE COILED AT HYDRO POLE FOR TERMINATION BY OTHERS. PROVIDE RISER CONDUIT AND SERVICE ENTRANCE FITTING C/W ALL MOUNTING HARDWARE FOR INSTALLATION ONTO HYDRO POLE BY OTHERS. COORDINATE WORK WITH LOCAL HYDRO AUTHORITY.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	18/04/25	50% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT	NAME (PRINT)	INIT.	DATE
DESIGNED	MANPREET PANESAR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

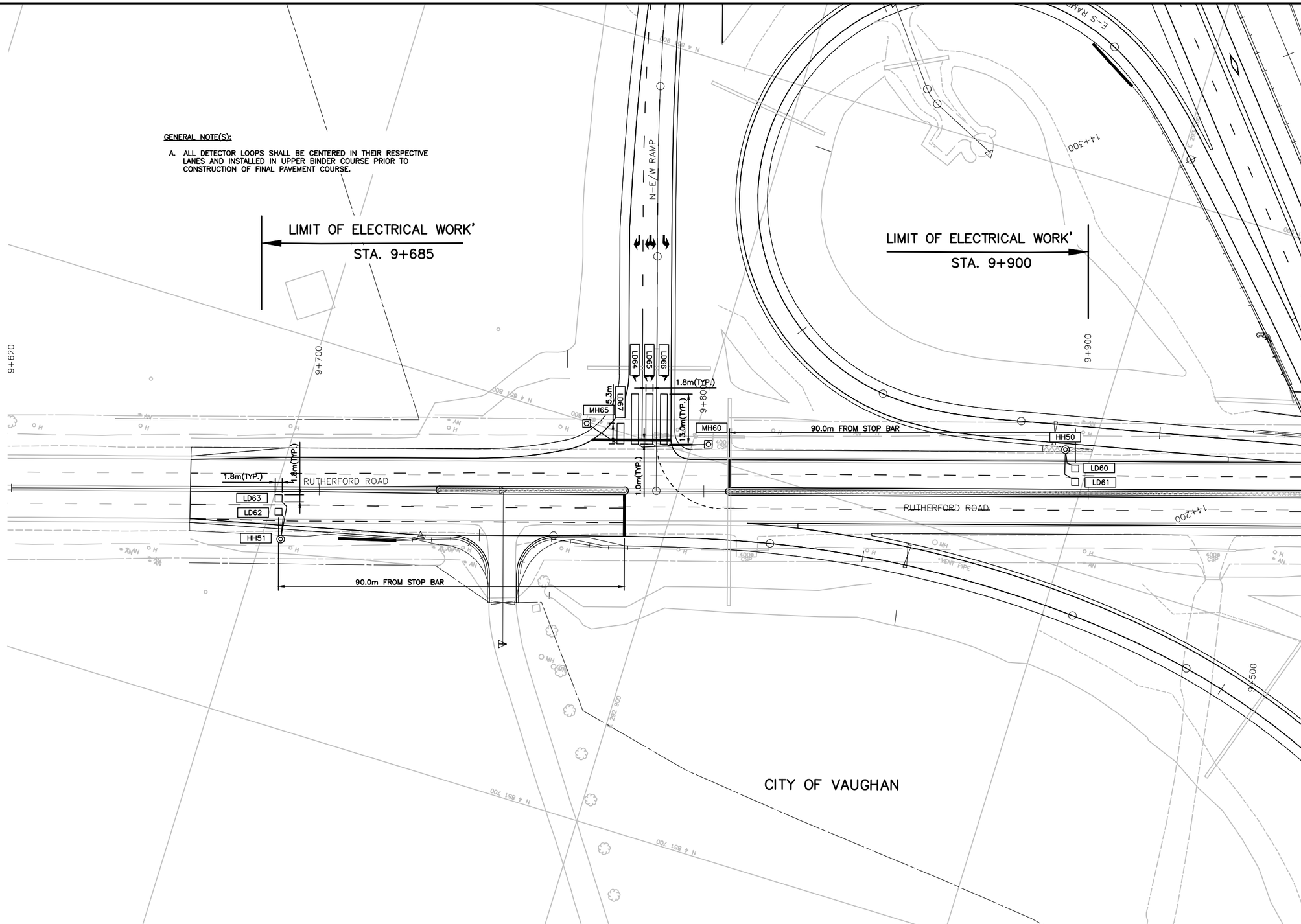
HWY 427 EXPANSION

TRAFFIC SIGNAL LAYOUT - 2
RUTHERFORD RD & S-E/W RAMP

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	F	7	ELE	000	DWG	1017	A

GENERAL NOTE(S):

A. ALL DETECTOR LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES AND INSTALLED IN UPPER BINDER COURSE PRIOR TO CONSTRUCTION OF FINAL PAVEMENT COURSE.



NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	18/04/25	50% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	MANPREET PANESAR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

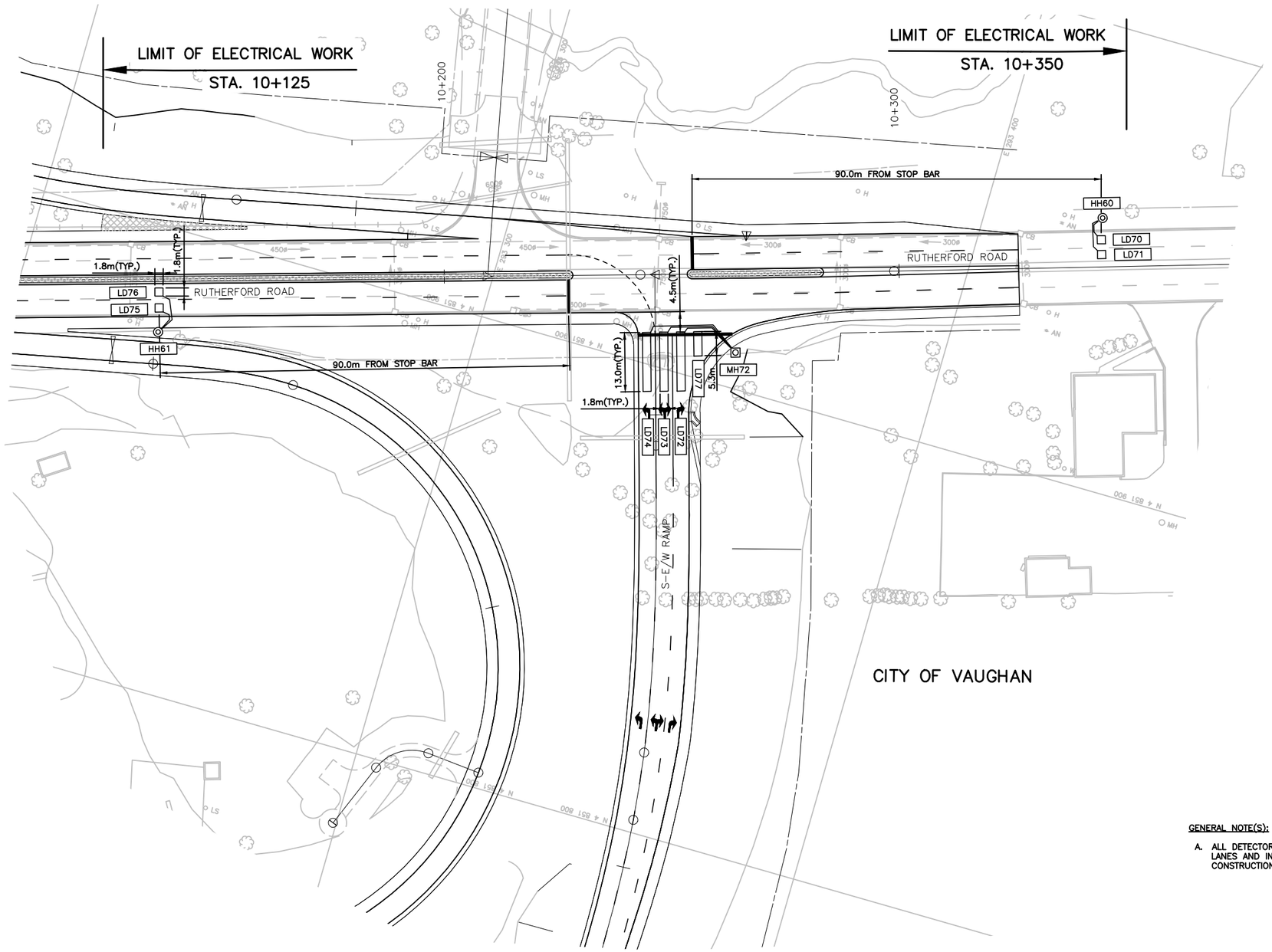
link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

LOOP DETECTOR LAYOUT - 1
RUTHERFORD RD & N-E/W RAMP

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	F	7	ELE	000	DWG	1018	A



GENERAL NOTE(S):

A. ALL DETECTOR LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES AND INSTALLED IN UPPER BINDER COURSE PRIOR TO CONSTRUCTION OF FINAL PAVEMENT COURSE.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	18/04/25	50% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	MANPREET PANESAR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

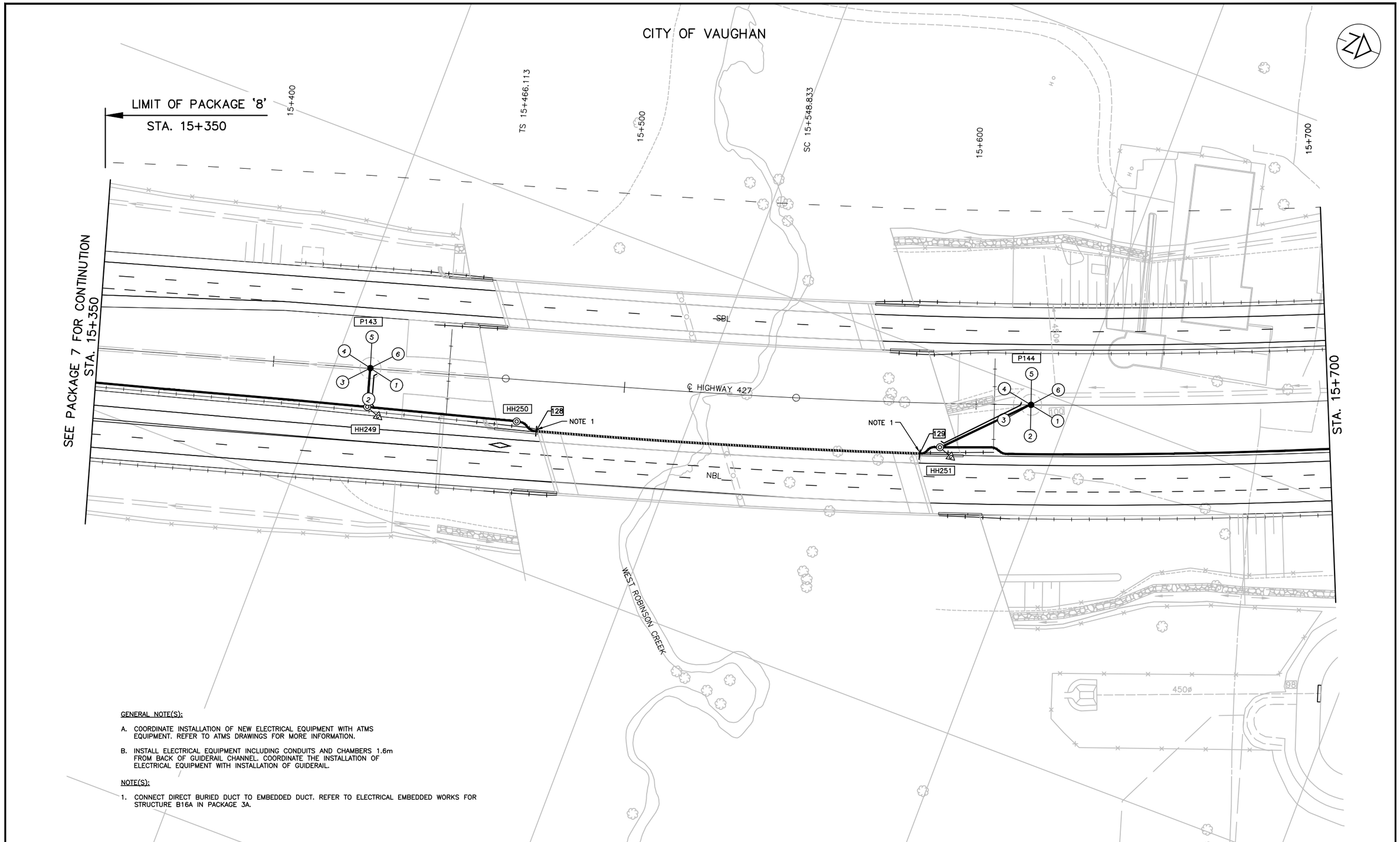
link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

LOOP DETECTOR LAYOUT - 2
RUTHERFORD RD & S-E/W RAMP

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	F	7	ELE	000	DWG	1019	A



GENERAL NOTE(S):

A. COORDINATE INSTALLATION OF NEW ELECTRICAL EQUIPMENT WITH ATMS EQUIPMENT. REFER TO ATMS DRAWINGS FOR MORE INFORMATION.

B. INSTALL ELECTRICAL EQUIPMENT INCLUDING CONDUITS AND CHAMBERS 1.6m FROM BACK OF GUIDERAIL CHANNEL. COORDINATE THE INSTALLATION OF ELECTRICAL EQUIPMENT WITH INSTALLATION OF GUIDERAIL.

NOTE(S):

1. CONNECT DIRECT BURIED DUCT TO EMBEDDED DUCT. REFER TO ELECTRICAL EMBEDDED WORKS FOR STRUCTURE B16A IN PACKAGE 3A.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m
Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

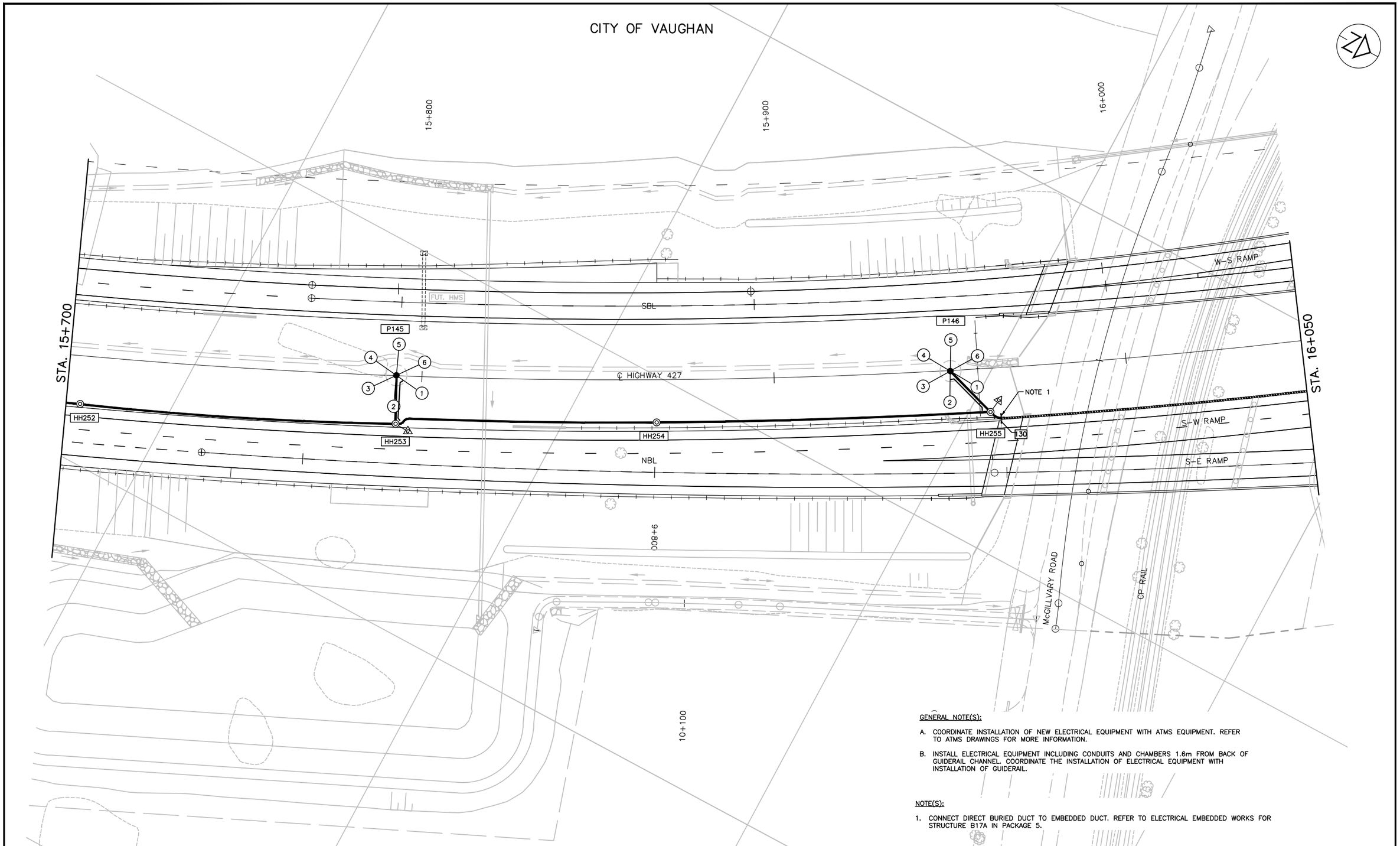
TITLE

HWY 427 EXPANSION

ELECTRICAL LAYOUT (MTO) - 1
STA. 15+350 TO STA. 15+700

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	8	ELE	000	DWG	1011	A

CITY OF VAUGHAN



GENERAL NOTE(S):

A. COORDINATE INSTALLATION OF NEW ELECTRICAL EQUIPMENT WITH ATMS EQUIPMENT. REFER TO ATMS DRAWINGS FOR MORE INFORMATION.

B. INSTALL ELECTRICAL EQUIPMENT INCLUDING CONDUITS AND CHAMBERS 1.6m FROM BACK OF GUIDERAIL CHANNEL. COORDINATE THE INSTALLATION OF ELECTRICAL EQUIPMENT WITH INSTALLATION OF GUIDERAIL.

NOTE(S):

1. CONNECT DIRECT BURIED DUCT TO EMBEDDED DUCT. REFER TO ELECTRICAL EMBEDDED WORKS FOR STRUCTURE B17A IN PACKAGE 5.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

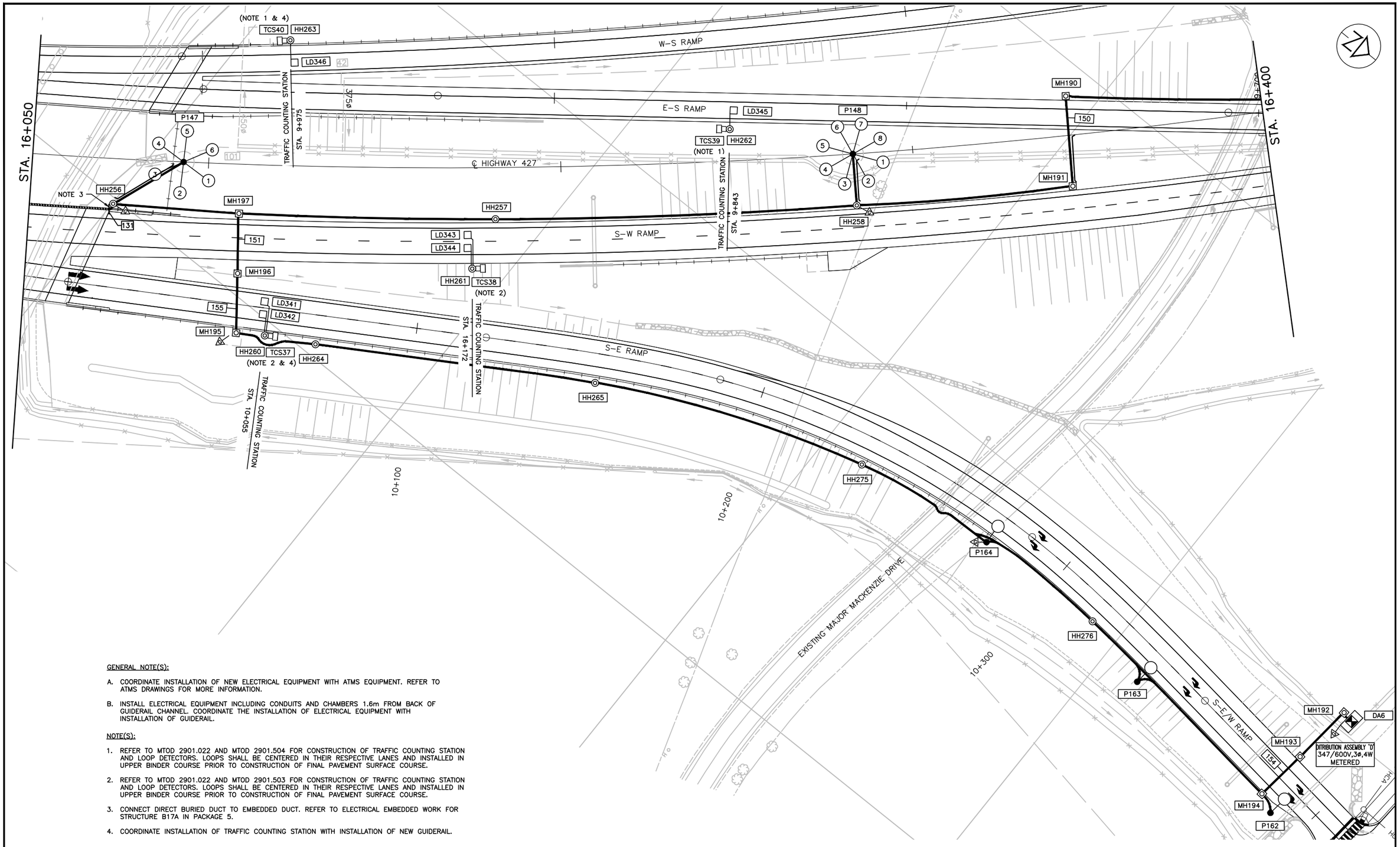
link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

ELECTRICAL LAYOUT (MTO) - 2
STA. 15+700 TO STA. 16+050

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	8	ELE	000	DWG	1012	A



GENERAL NOTE(S):

A. COORDINATE INSTALLATION OF NEW ELECTRICAL EQUIPMENT WITH ATMS EQUIPMENT. REFER TO ATMS DRAWINGS FOR MORE INFORMATION.

B. INSTALL ELECTRICAL EQUIPMENT INCLUDING CONDUITS AND CHAMBERS 1.6m FROM BACK OF GUIDERAIL CHANNEL. COORDINATE THE INSTALLATION OF ELECTRICAL EQUIPMENT WITH INSTALLATION OF GUIDERAIL.

NOTE(S):

1. REFER TO MTOD 2901.022 AND MTOD 2901.504 FOR CONSTRUCTION OF TRAFFIC COUNTING STATION AND LOOP DETECTORS. LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES AND INSTALLED IN UPPER BINDER COURSE PRIOR TO CONSTRUCTION OF FINAL PAVEMENT SURFACE COURSE.

2. REFER TO MTOD 2901.022 AND MTOD 2901.503 FOR CONSTRUCTION OF TRAFFIC COUNTING STATION AND LOOP DETECTORS. LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES AND INSTALLED IN UPPER BINDER COURSE PRIOR TO CONSTRUCTION OF FINAL PAVEMENT SURFACE COURSE.

3. CONNECT DIRECT BURIED DUCT TO EMBEDDED DUCT. REFER TO ELECTRICAL EMBEDDED WORK FOR STRUCTURE B17A IN PACKAGE 5.

4. COORDINATE INSTALLATION OF TRAFFIC COUNTING STATION WITH INSTALLATION OF NEW GUIDERAIL.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

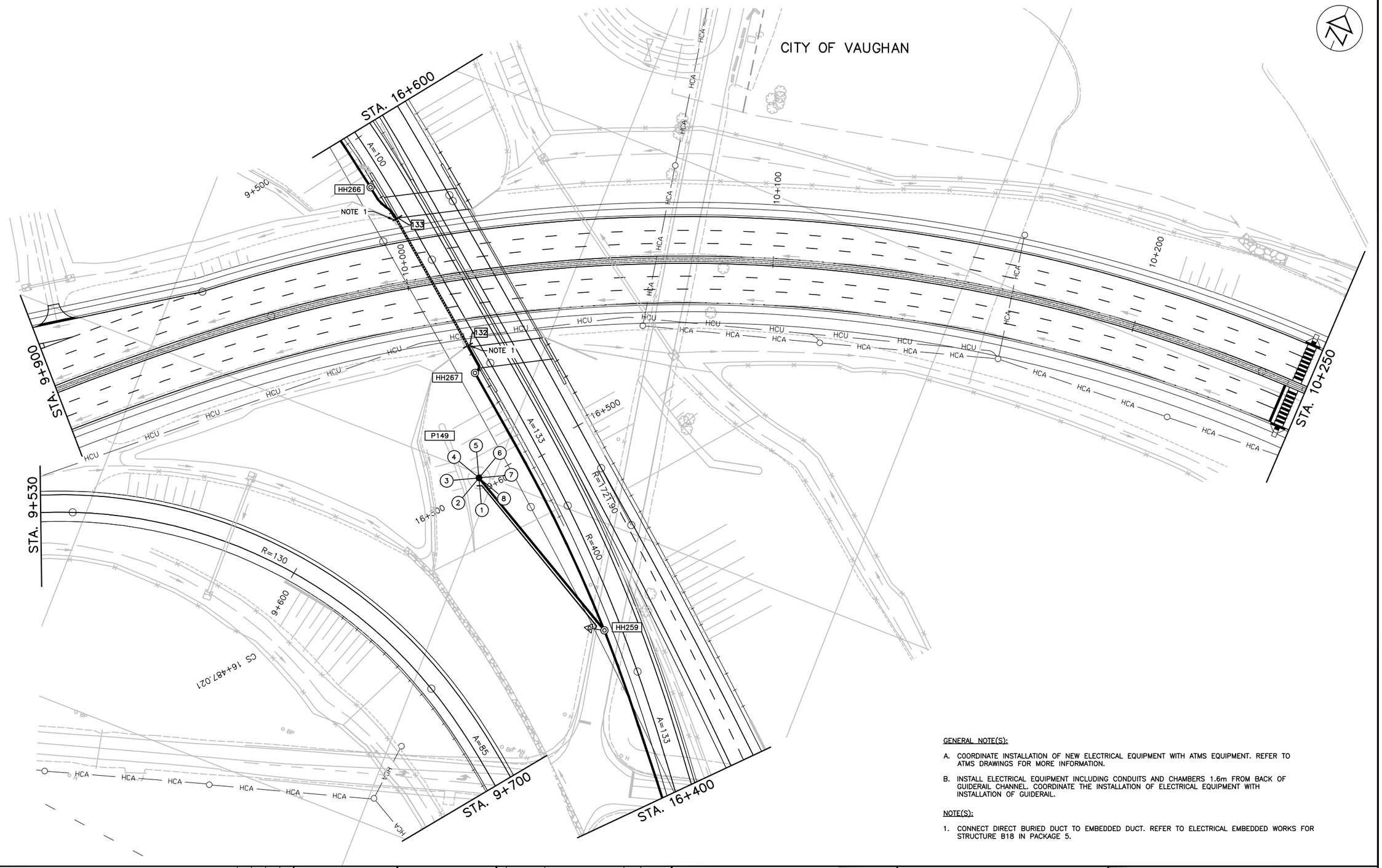
link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

ELECTRICAL LAYOUT (MTO) - 3
STA. 16+050 TO STA. 16+400

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	8	ELE	000	DWG	1013	A



GENERAL NOTE(S):

A. COORDINATE INSTALLATION OF NEW ELECTRICAL EQUIPMENT WITH ATMS EQUIPMENT. REFER TO ATMS DRAWINGS FOR MORE INFORMATION.

B. INSTALL ELECTRICAL EQUIPMENT INCLUDING CONDUITS AND CHAMBERS 1.6m FROM BACK OF GUIDERAIL CHANNEL. COORDINATE THE INSTALLATION OF ELECTRICAL EQUIPMENT WITH INSTALLATION OF GUIDERAIL.

NOTE(S):

1. CONNECT DIRECT BURIED DUCT TO EMBEDDED DUCT. REFER TO ELECTRICAL EMBEDDED WORKS FOR STRUCTURE B18 IN PACKAGE 5.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

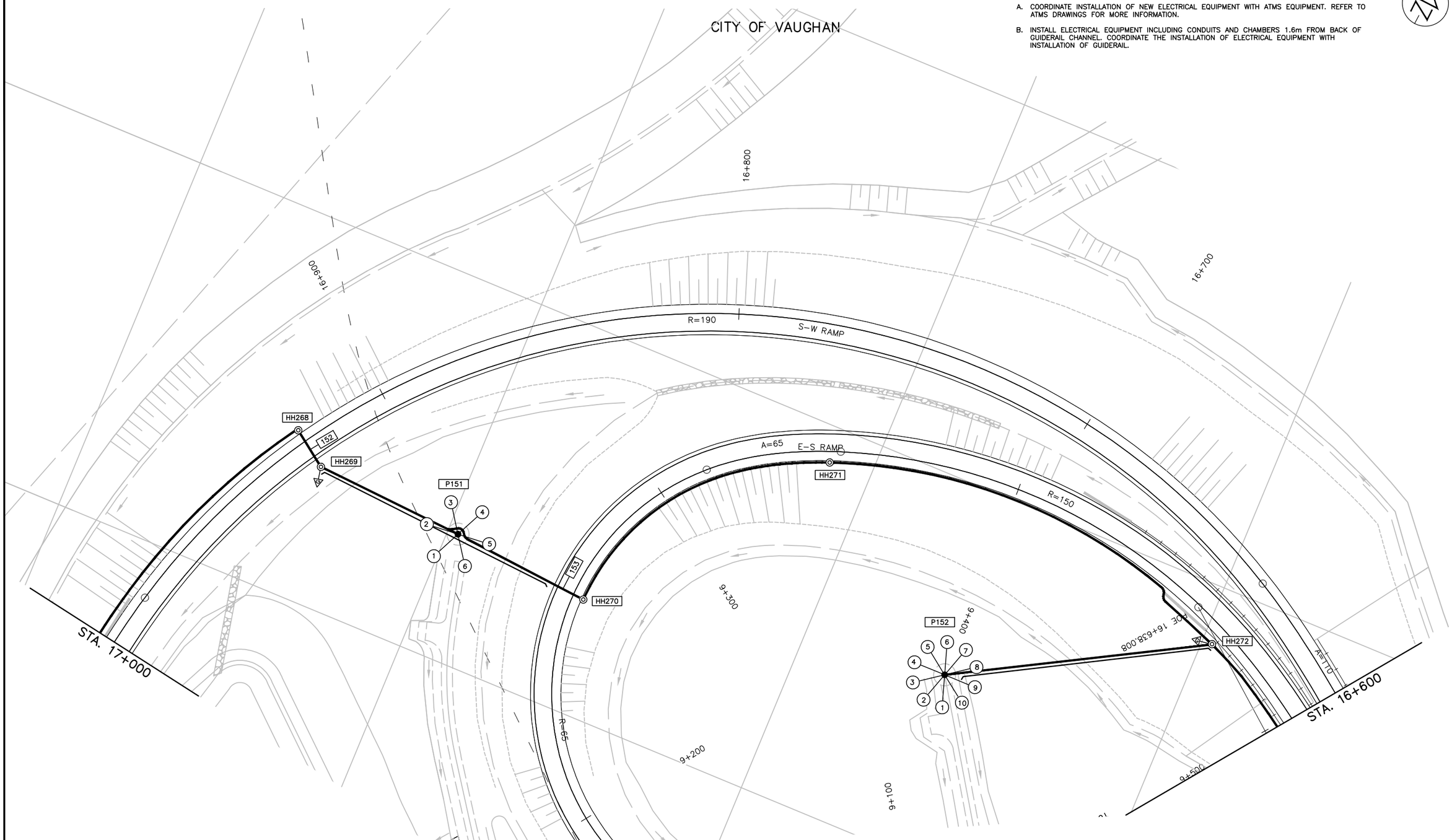
ELECTRICAL LAYOUT (MTO) - 4
STA. 16+400 TO STA. 16+600

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	8	ELE	000	DWG	1014	A

GENERAL NOTE(S):

A. COORDINATE INSTALLATION OF NEW ELECTRICAL EQUIPMENT WITH ATMS EQUIPMENT. REFER TO ATMS DRAWINGS FOR MORE INFORMATION.

B. INSTALL ELECTRICAL EQUIPMENT INCLUDING CONDUITS AND CHAMBERS 1.6m FROM BACK OF GUIDERAIL CHANNEL. COORDINATE THE INSTALLATION OF ELECTRICAL EQUIPMENT WITH INSTALLATION OF GUIDERAIL.



NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

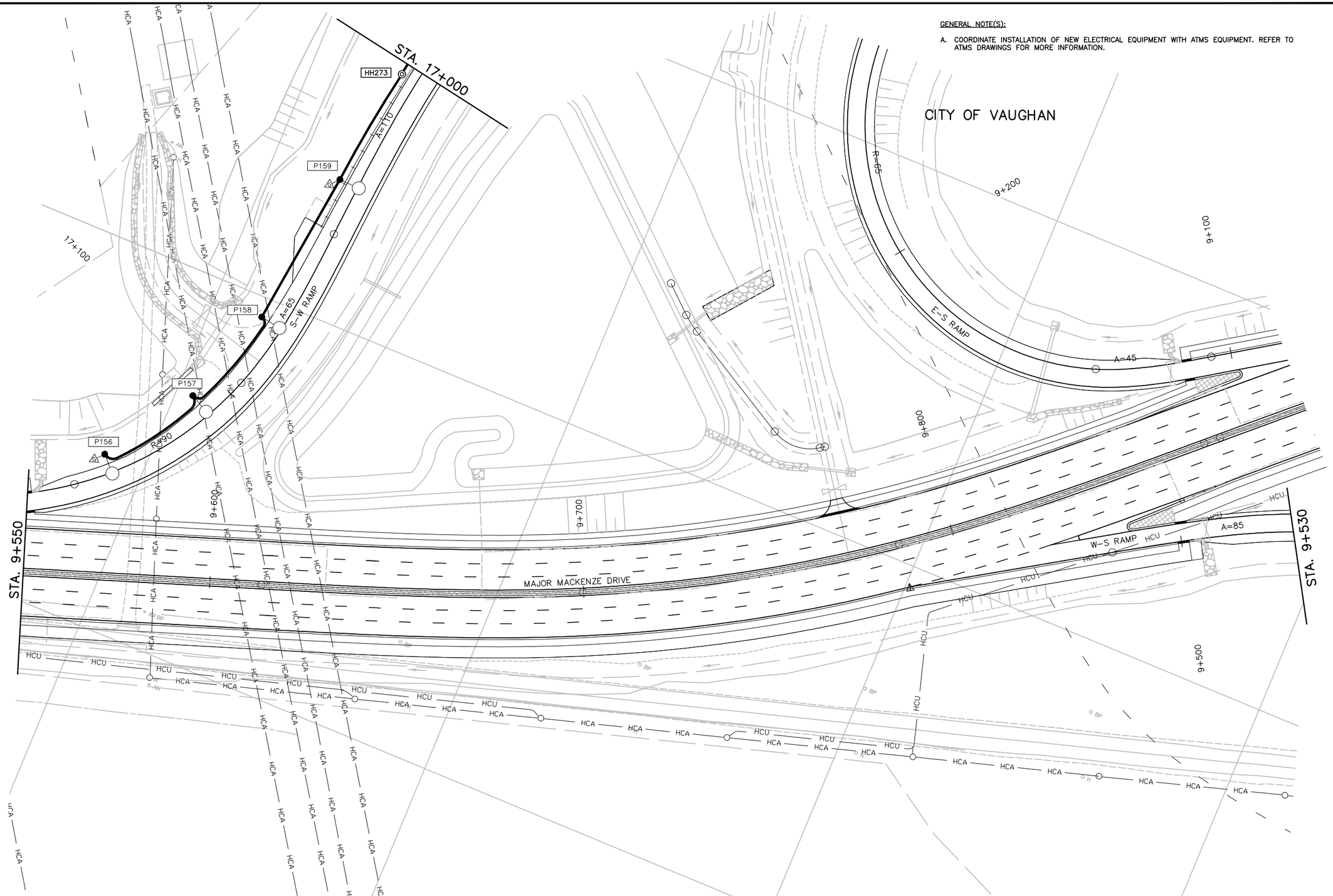
HWY 427 EXPANSION

ELECTRICAL LAYOUT (MTO) - 5
STA. 16+600 TO STA. 17+000

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	8	ELE	000	DWG	1015	A

GENERAL NOTE(S):

A. COORDINATE INSTALLATION OF NEW ELECTRICAL EQUIPMENT WITH ATMS EQUIPMENT. REFER TO ATMS DRAWINGS FOR MORE INFORMATION.



NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

link427

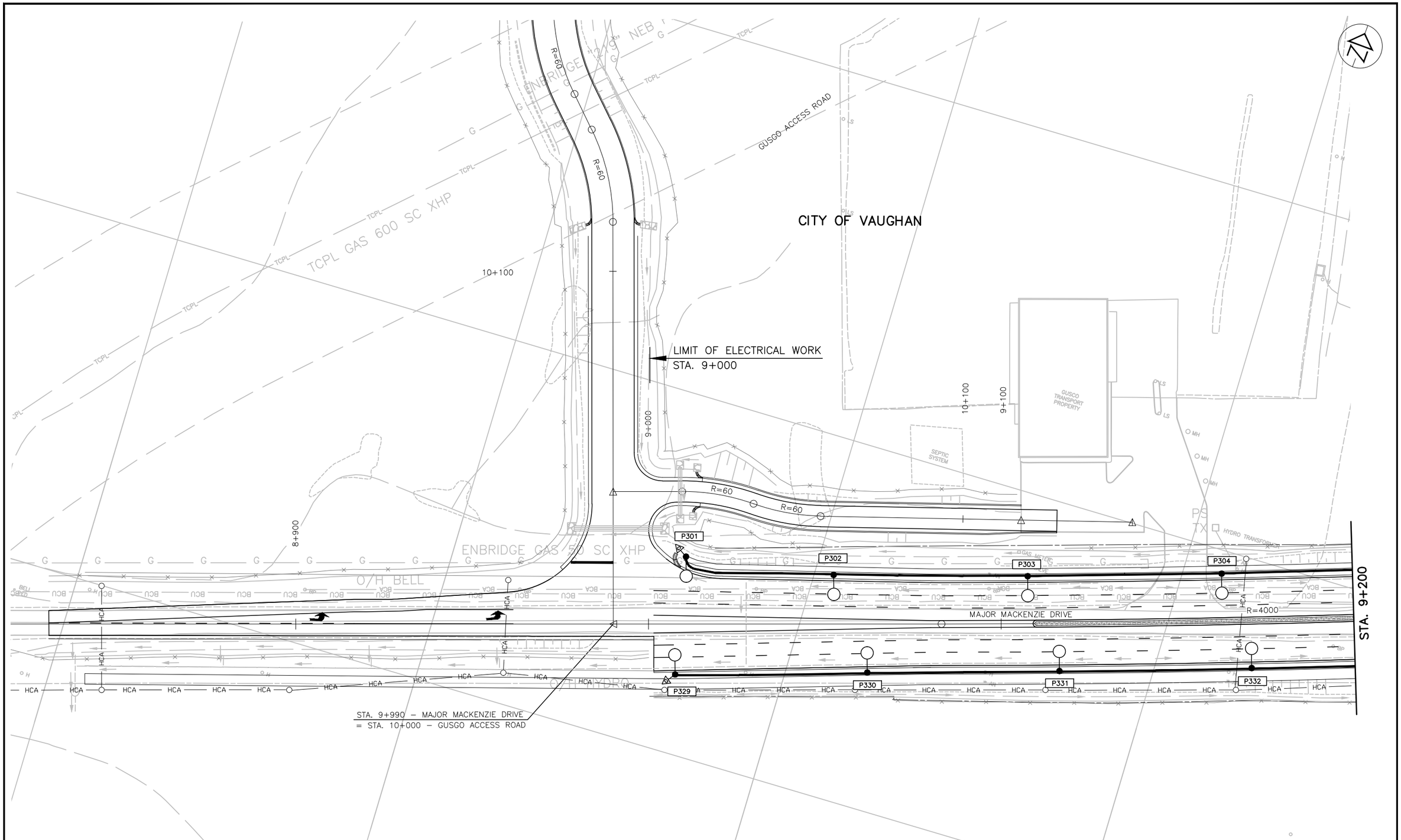
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

ELECTRICAL LAYOUT (MTO) - 7
STA. 9+950 TO STA. 9+900

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	8	ELE	000	DWG	1017	A



NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

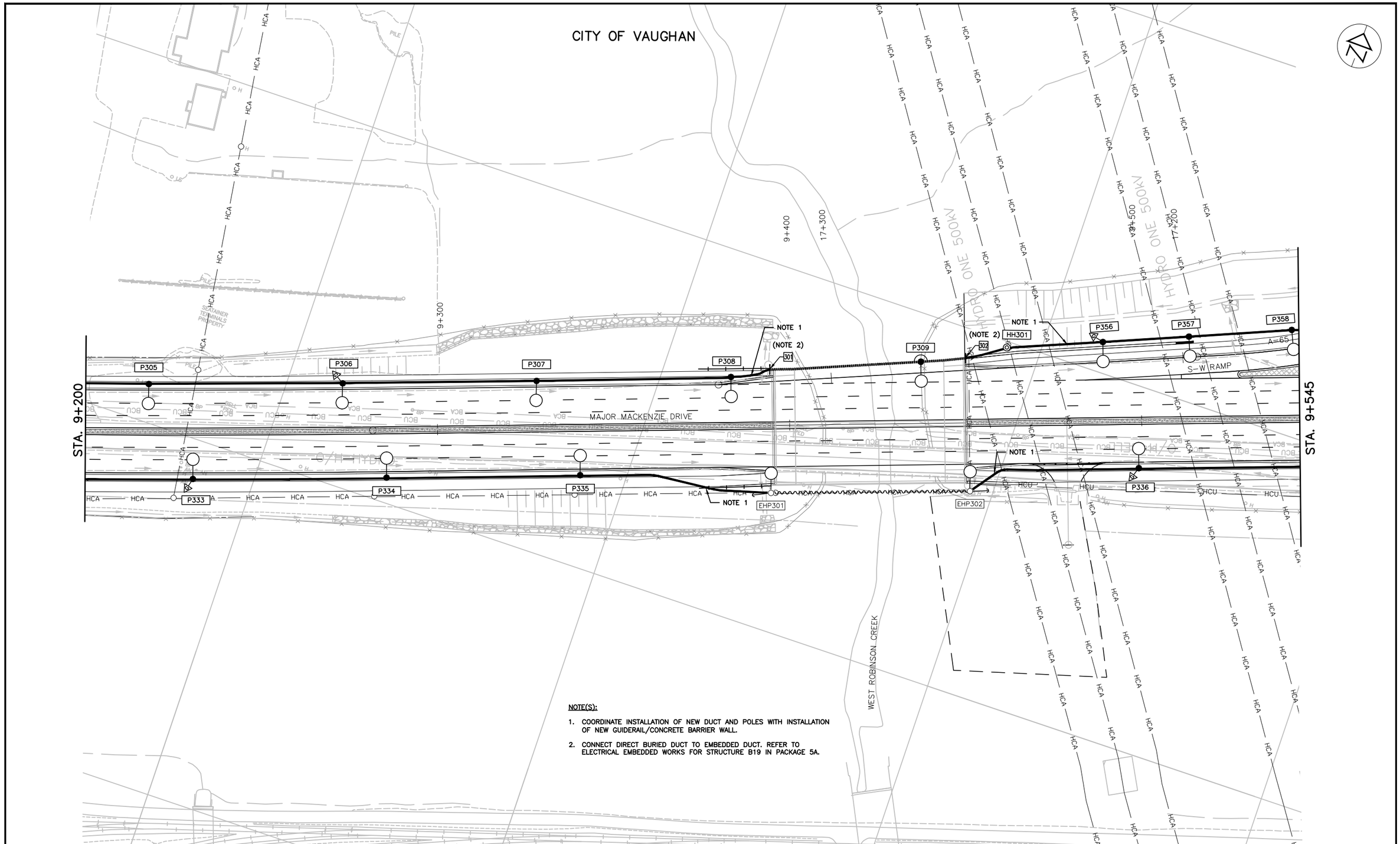
Ontario

link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION
MAJOR MACKENZE DRIVE
ELECTICAL LAYOUT (MUN) - 8
STA. 8+840 TO STA. 9+200

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	8	ELE	000	DWG	1018	A



NOTE(S):

1. COORDINATE INSTALLATION OF NEW DUCT AND POLES WITH INSTALLATION OF NEW GUIDERAIL/CONCRETE BARRIER WALL.
2. CONNECT DIRECT BURIED DUCT TO EMBEDDED DUCT. REFER TO ELECTRICAL EMBEDDED WORKS FOR STRUCTURE B19 IN PACKAGE 5A.

NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

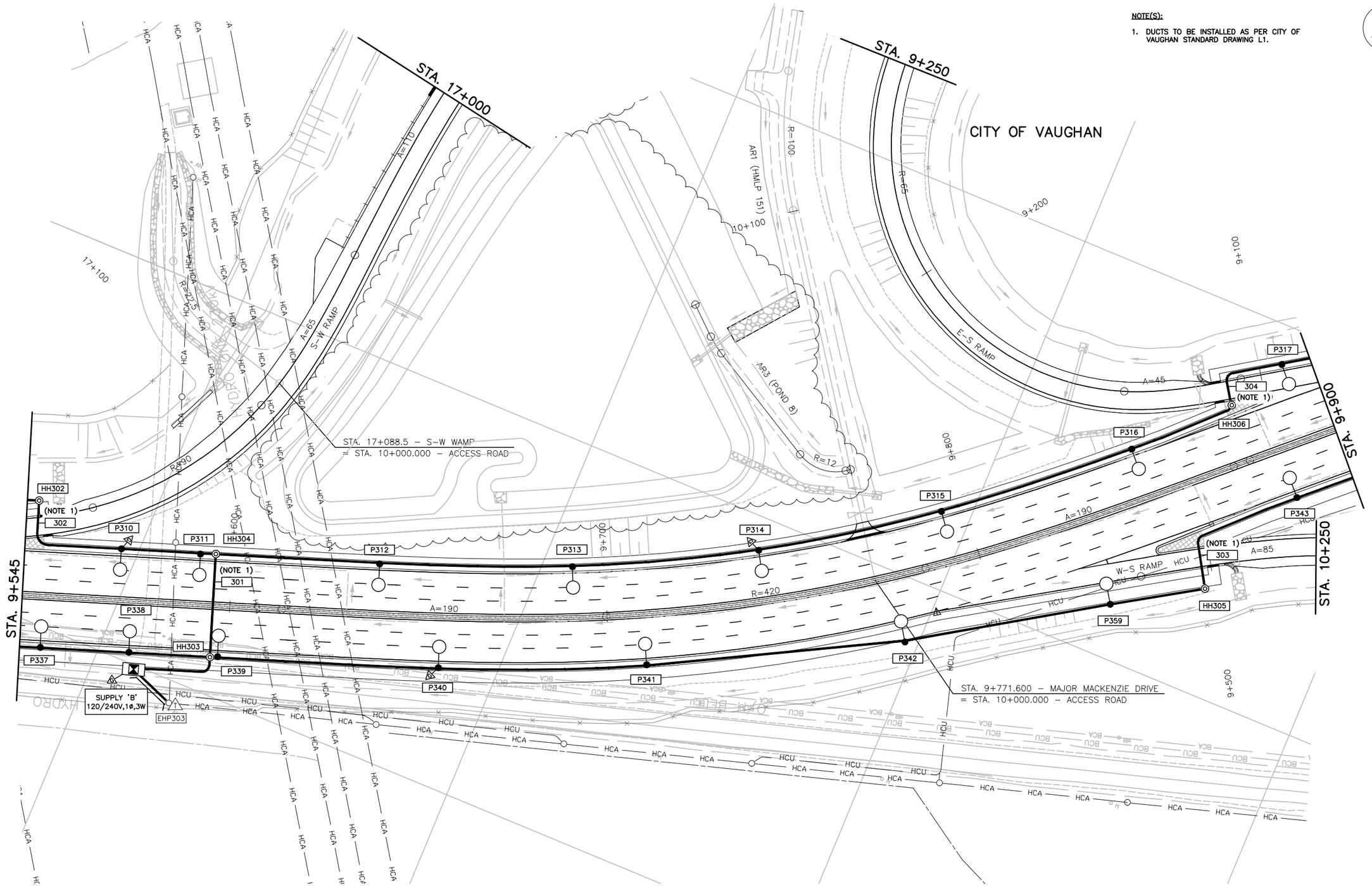
TITLE

HWY 427 EXPANSION
MAJOR MACKENZE DRIVE
ELECTRICAL LAYOUT (MUN) - 9
STA. 9+200 TO STA. 9+545

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	8	ELE	000	DWG	1019	A

NOTE(S):

1. DUCTS TO BE INSTALLED AS PER CITY OF VAUGHAN STANDARD DRAWING L1.



NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

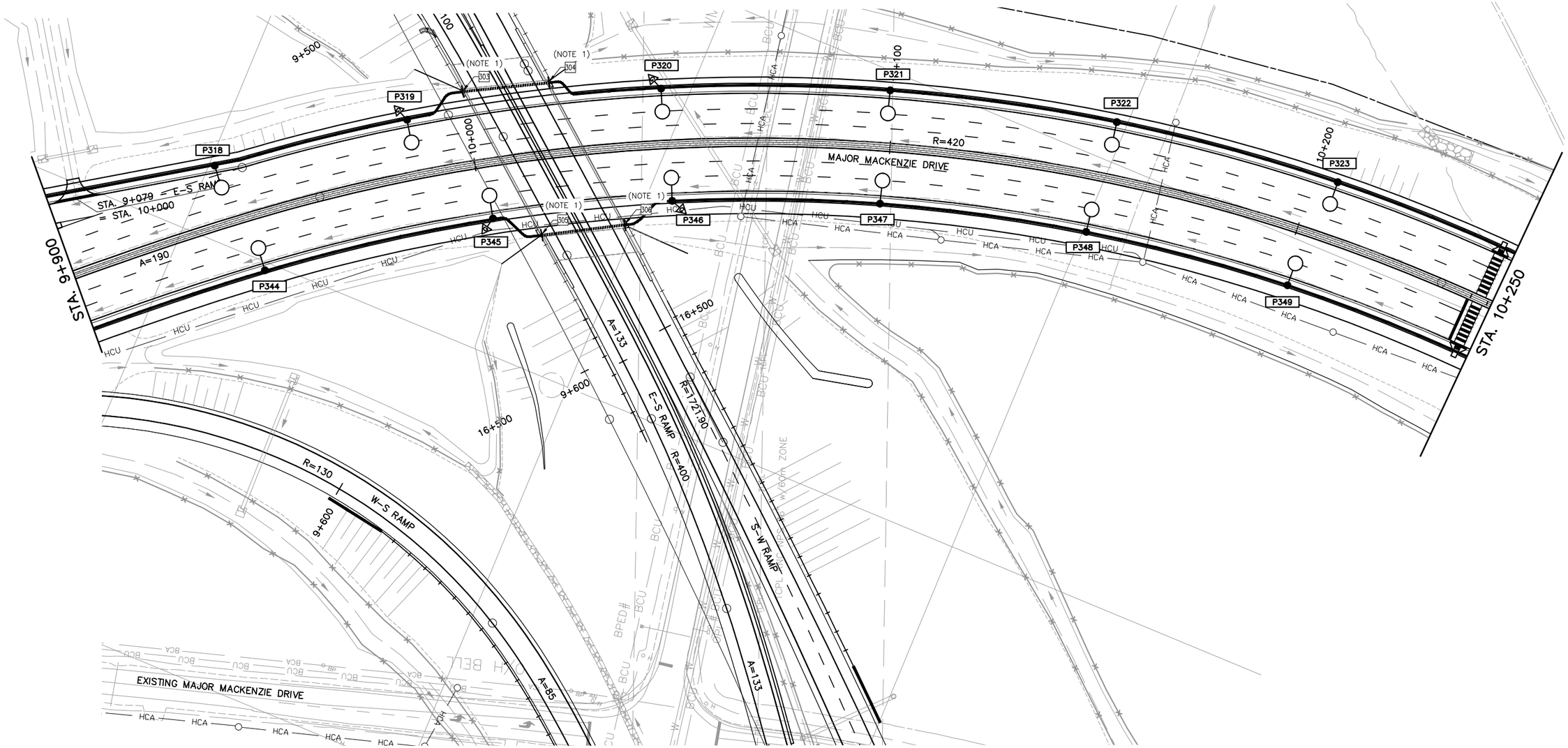
HWY 427 EXPANSION
MAJOR MACKENZE DRIVE
ELECTRICAL LAYOUT (MUN) - 10
STA. 9+545 TO STA. 9+900

PROJECT ID.	STAGE IDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	8	ELE	000	DWG	1020	A

NOTE(S):

1. CONNECT DIRECT BURIED DUCT TO EMBEDDED DUCT. REFER TO ELECTRICAL EMBEDDED WORKS FOR STRUCTURE B18 IN PACKAGE 5.

CITY OF VAUGHAN



NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m
Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

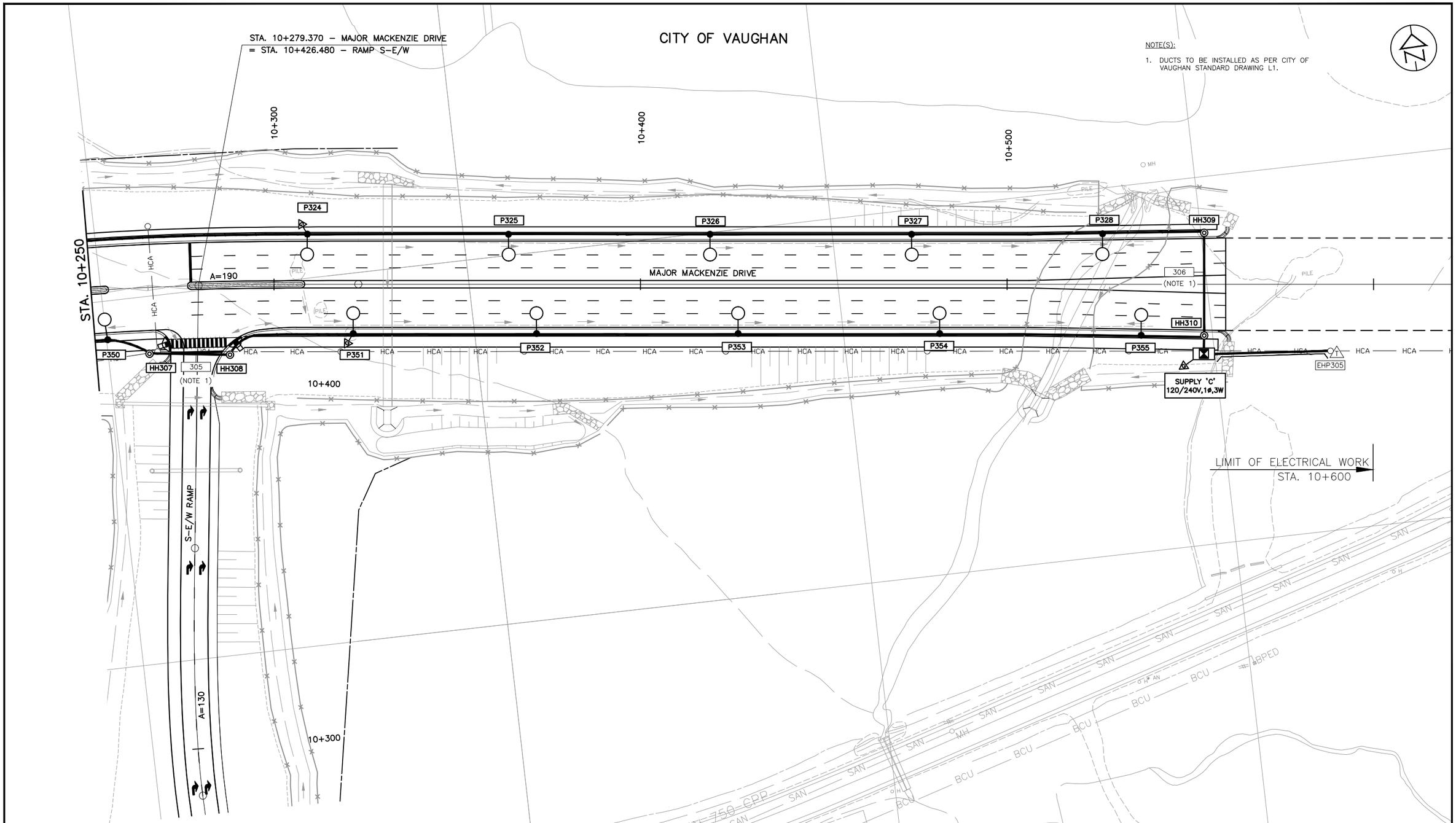
Ontario

link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION
MAJOR MACKENZE DRIVE
ELECTRICAL LAYOUT (MUN) - 11
STA. 9+990 TO STA. 10+250

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	8	ELE	000	DWG	1021	A



NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m
Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

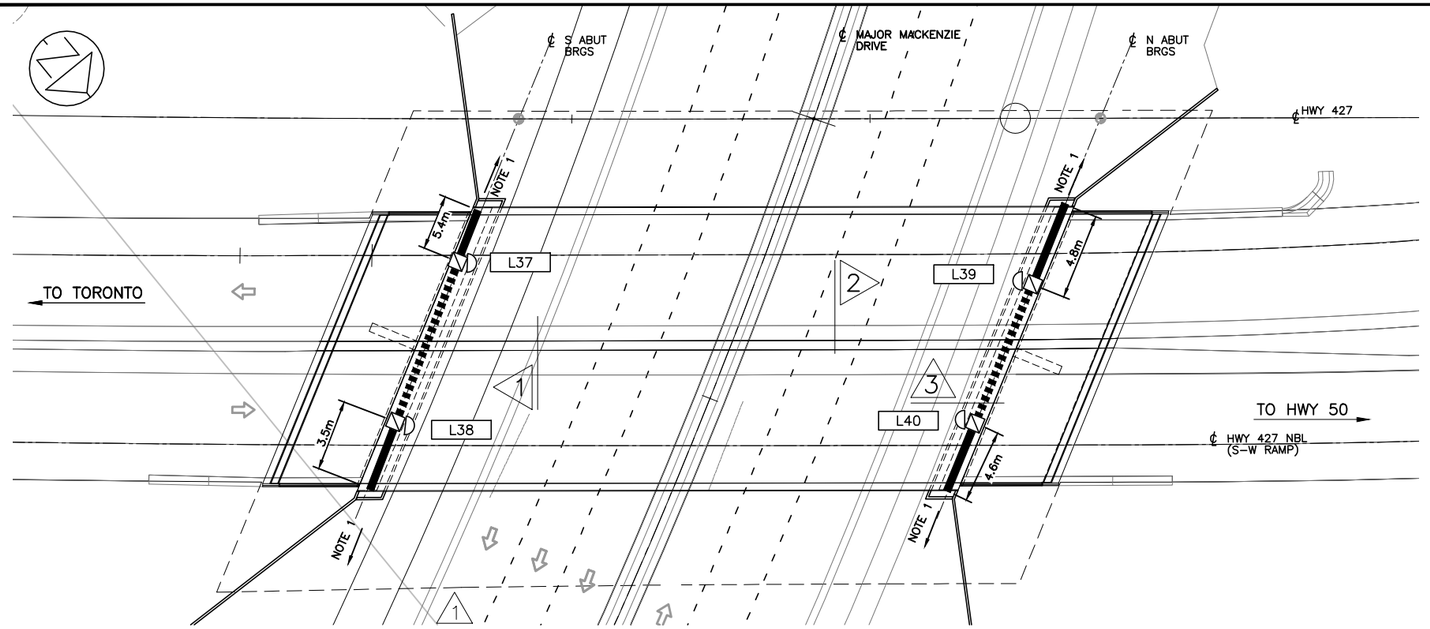
Ontario

link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

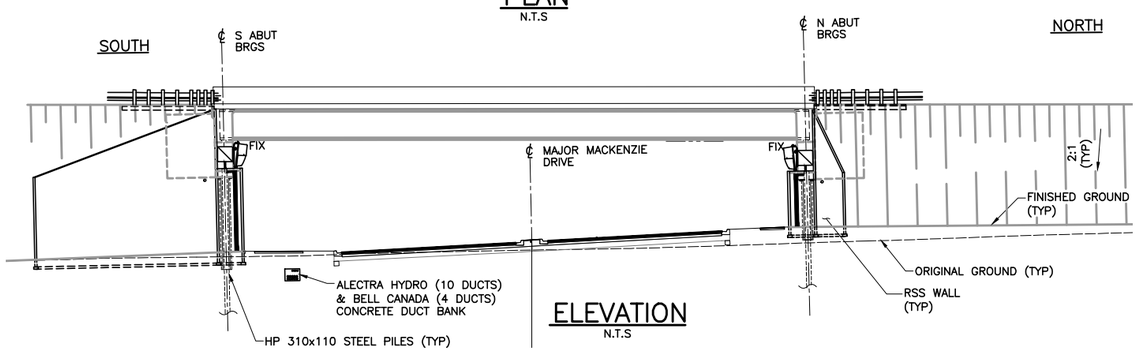
TITLE

HWY 427 EXPANSION
MAJOR MACKENZE DRIVE
ELECTRICAL LAYOUT (MUN) - 12
STA. 10+250 TO STA. 10+615

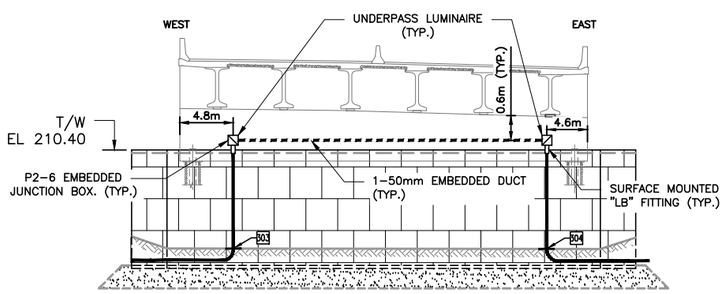
PROJECT ID.	STAGE IDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	8	ELE	000	DWG	1022	A



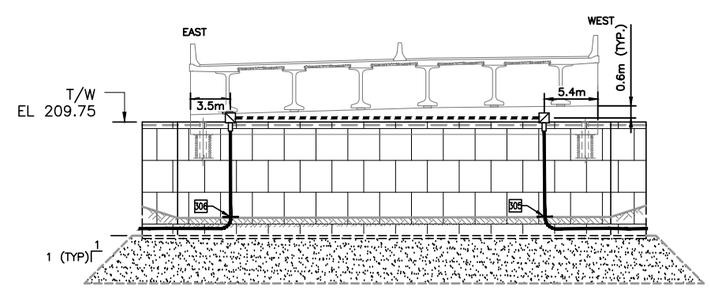
PLAN
N.T.S



ELEVATION
N.T.S



2 RW-2 FRONT ELEVATION
N.T.S



1 RW-5 FRONT ELEVATION
N.T.S

LEGEND:

- EMBEDDED RIGID PVC JUNCTION BOX TYPE P2-6 IN PIER CAP (REFER TO OPSD 2300.020)
- 58W LED UNDERPASS LUMINAIRE

NOTE(S):

1. REFER TO ELECTRICAL LAYOUT FOR MORE INFORMATION.

NO.	DATE	REVISIONS	BY	CHK	LEAD DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

AS NOTED

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	MANPREET PANESAR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENG.	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

TITLE

HWY 427 EXPANSION
MAJOR MACKENZIE DRIVE UNDERPASS
UNDERPASS LAYOUT - 1 (MUN)

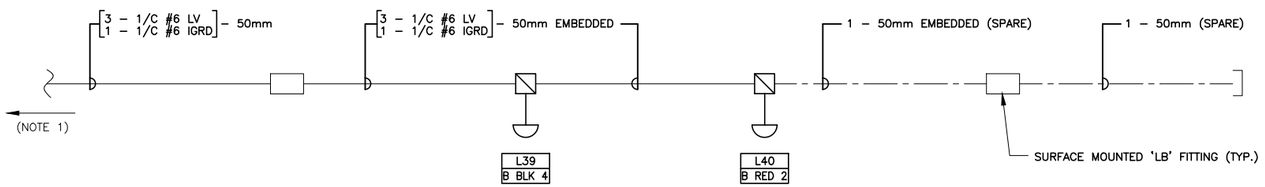
PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	8	ELE	000	DWG	1023	A

LEGEND:

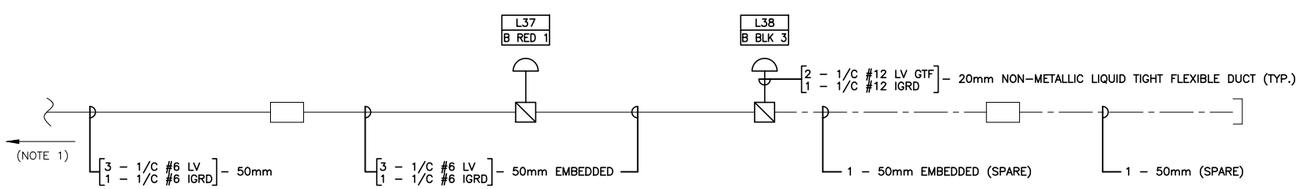
- EMBEDDED RIGID PVC JUNCTION BOX TYPE P2-6 IN PIER CAP (REFER TO OPSD 2300.020)
- 58W LED UNDERPASS LUMINAIRE

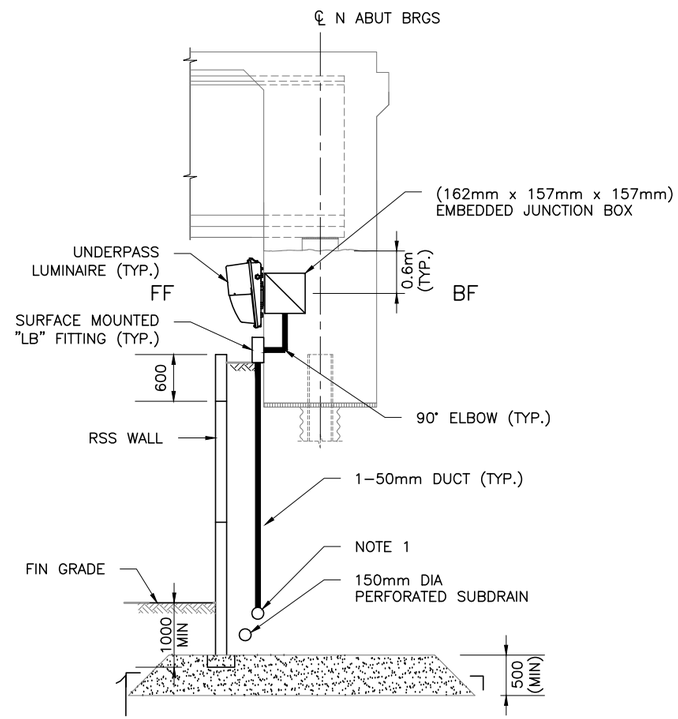
NOTE(S):

1. REFER TO ELECTRICAL LAYOUT FOR MORE INFORMATION.



℄ MAJOR MACKENZIE DRIVE





3 ABUTMENT
N.T.S

NO.	DATE	REVISIONS	BY	CHK	LEAD DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

AS NOTED

CONSULTANT

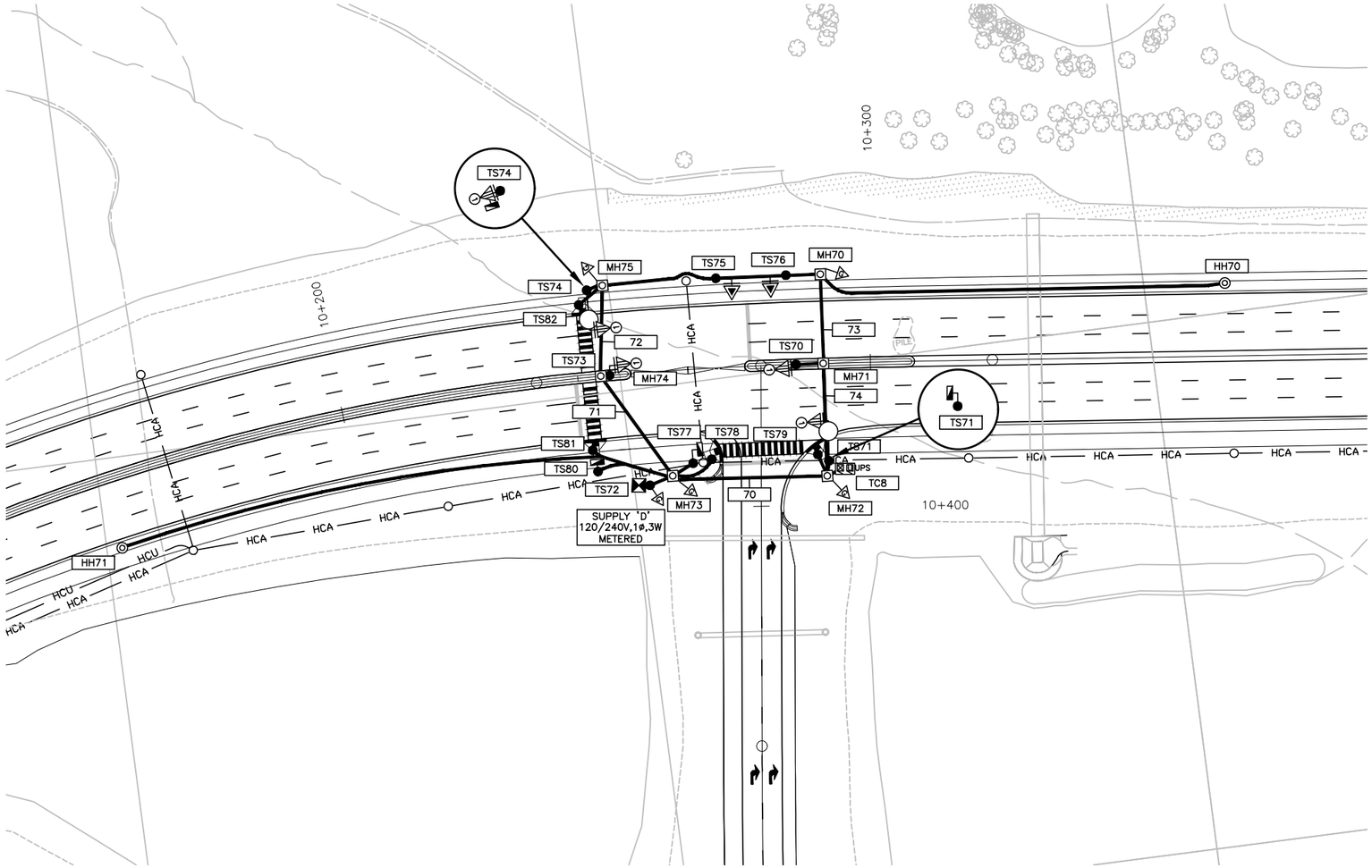
	NAME (PRINT)	INIT.	DATE
DESIGNED	MANPREET PANESAR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENG.	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

TITLE

HWY 427 EXPANSION
MAJOR MACKENZIE DRIVE UNDERPASS
UNDERPASS LAYOUT - 2 (MUN)

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	8	ELE	000	DWG	1023A	A



NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	MANPREET PANESAR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

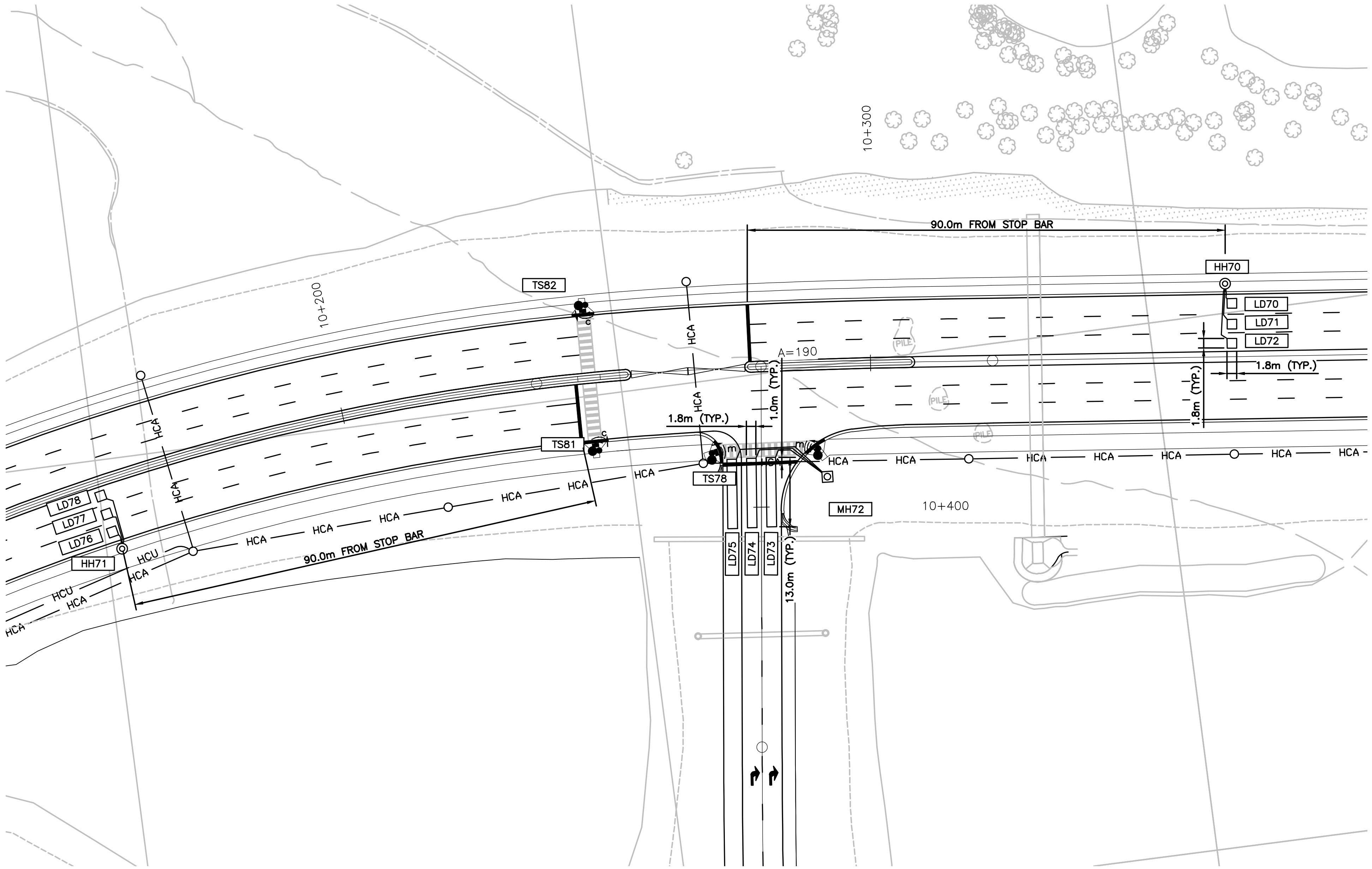
link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

TRAFFIC SIGNAL LAYOUT (MTO) - 1
HWY 427 S-E/W RAMP &
MAJOR MACKENZIE DRIVE

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427–D	N	8	ELE	000	DWG	1024	A



NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	19/01/25	90% SUBMISSION TO CA				

SCALE :

5m 0 10m
Metres HORIZONTAL

	NAME (PRINT)	INIT.	DATE
DESIGNED	MANPREET PANESAR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

CONSULTANT

Ontario

link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

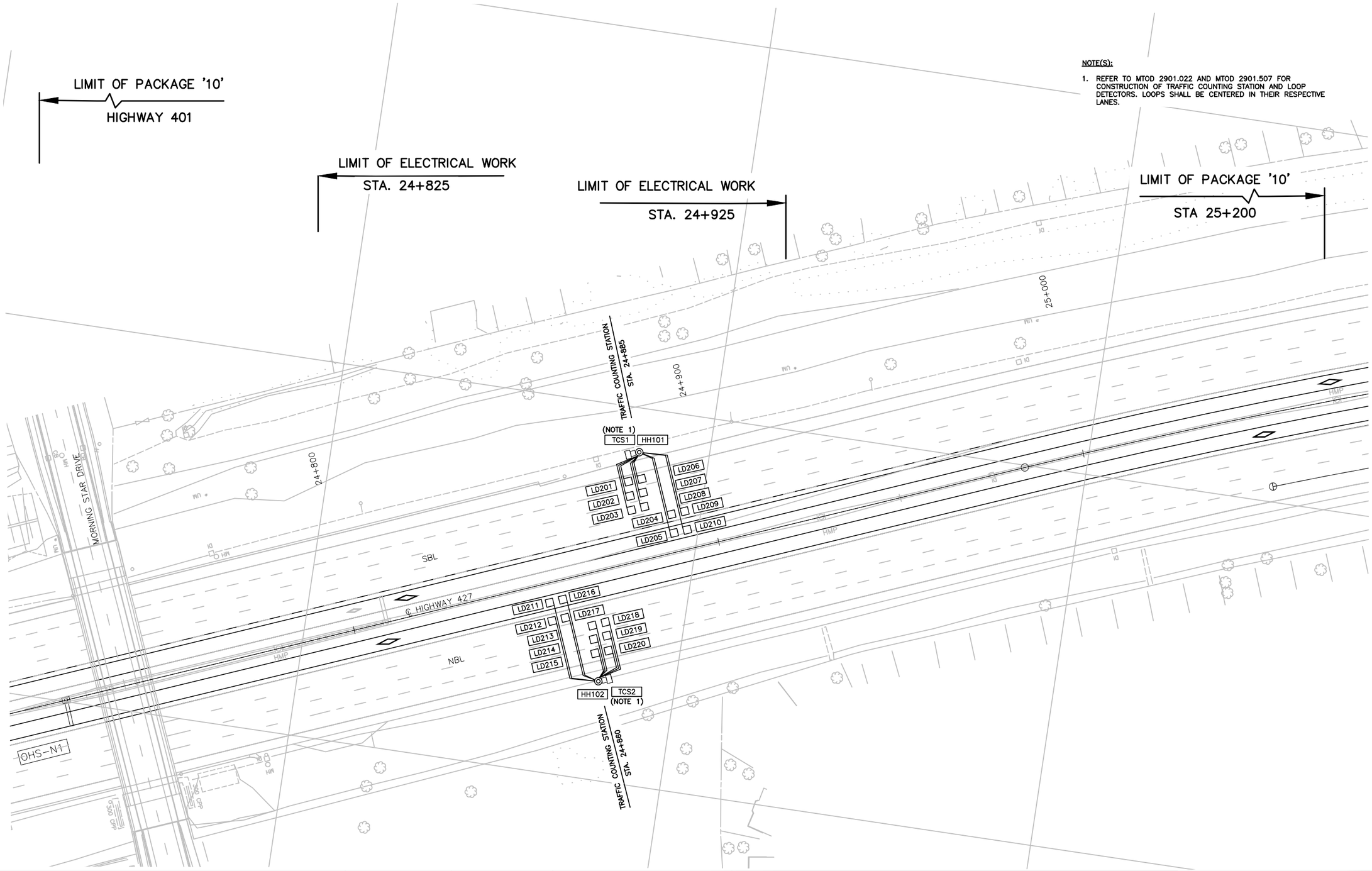
HWY 427 EXPANSION

ACTUATION DEVICE LAYOUT (MTO) - 1
HWY 427 S-E/W RAMP &
MAJOR MACKENZIE DRIVE

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	N	8	ELE	000	DWG	1025	A

NOTE(S):

1. REFER TO MTOD 2901.022 AND MTOD 2901.507 FOR CONSTRUCTION OF TRAFFIC COUNTING STATION AND LOOP DETECTORS. LOOPS SHALL BE CENTERED IN THEIR RESPECTIVE LANES.



NO.	DATE	REVISIONS	BY	CHK	LEAD. DISC.	PROJ. MAN.
A	18/06/18	50% SUBMISSION TO CA				

SCALE :

5m 0 10m

Metres
HORIZONTAL

CONSULTANT

	NAME (PRINT)	INIT.	DATE
DESIGNED	NATALIA MAHABIR		
DRAWN	KARMJIT GILL		
CHECKED	LENNOX LUE		
APPROVED LEAD ENGINEER	MARIO TEDESCO		
APPROVED PROJ. MANAGER			

Ontario

link427
LOCAL | INTEGRATED | NEIGHBOURLY | KNOWLEDGEABLE

TITLE

HWY 427 EXPANSION

ELECTRICAL LAYOUT - 1
STA. 24+750 TO STA. 25+050

PROJECT ID.	STAGE INDENTIFIER	DESIGN PACKAGE NUMBER	DISCIPLINE	STRUCTURE NUMBER	DOCUMENT TYPE	DRAWING NUMBER	REVISION NUMBER
H427-D	F	10	ELE	000	DWG	1002	A