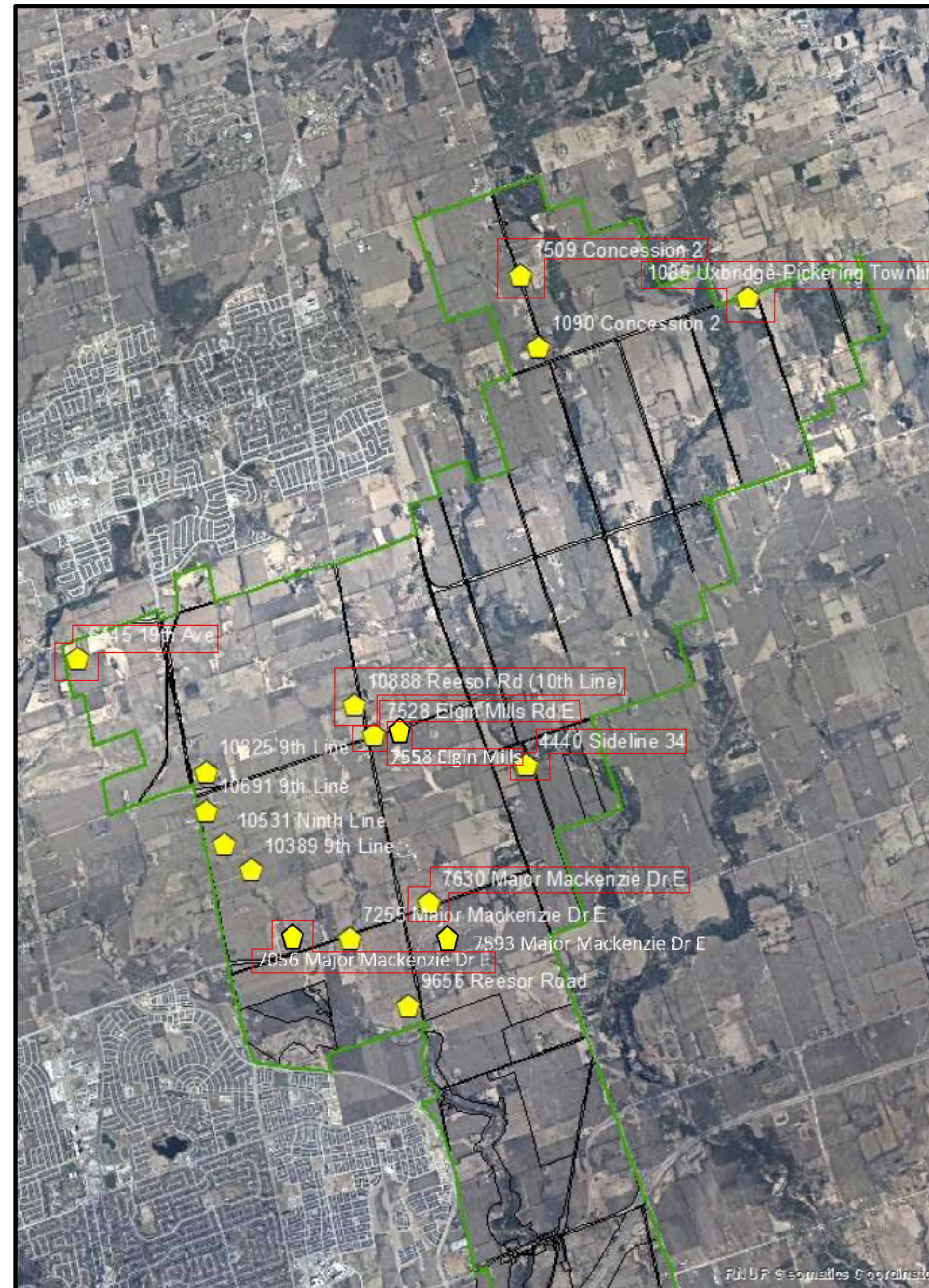


# ROUGE NATIONAL URBAN PARK SEPTIC SYSTEM REPLACEMENTS



ISSUED FOR TENDER  
MAY 30, 2018



LEGEND			
DESCRIPTION	EXISTING	PROPOSED	REMOVALS
EDGE OF ASPHALT ROADWAY / DRIVEWAY			
ASPHALT ROADWAY - FULL DEPTH			
ASPHALT ROADWAY - PARTIAL DEPTH			
ASPHALT MILLING - PARTIAL DEPTH			
EDGE OF GRAVEL ROADWAY / DRIVEWAY			
CONCRETE BARRIER CURB AND DEPRESSED CURB			
CONCRETE CURB AND GUTTER			
ROADWAY CENTERLINE			
REFERENCE H.O.T. POINT ON CENTERLINE			
P.I. (POINT OF INTERSECTION)			
FENCE GATE			
CHAINLINK FENCE			
PAGE WIRE FENCE			
STEEL BEAM GUIDE RAIL			
SILT FENCE			
TREES			
HEDGE			
TREELINE / MIXED BUSH AREA			
AREA TO BE CLEARED AND GRUBBED			
EDGE OF WATER / CREEK			
CONCRETE JERSEY BARRIERS			
WOOD POST			
BOLLARDS			
UNKNOWN SIGN TYPE ON SIGN POST			
SIGN POST AND SIGN TYPE			
TOP OF SLOPE			
BOTTOM OF SLOPE			
SPOT ELEVATION			
SOD			
RIP-RAP			
CLAY SEAL AT CULVERT			
BOREHOLE AND IDENTIFICATION NUMBER			
SWALE			
DITCH			
ROCK FLOW CHECK DAM			
LEFT DITCH IN PROFILE			
RIGHT DITCH IN PROFILE			
CULVERT AND SIZE			
PIPE END INVERT ELEVATION			
CATCHBASIN			
STORM SEWER MAINTENANCE HOLE			
WATERMAIN UNDERGROUND PIPE AND SIZE			
WATERMAIN PIPE IN PROFILE			
WATERMAIN ACCESS, AIR AND DRAIN VALVE CHAMBER			
WATERMAIN LATERAL, FIRE HYDRANT AND VALVE BOX			
HYDRO POLE WITH ANCHOR			
OVERHEAD HYDRO - PRIMARY LINE			
OVERHEAD HYDRO - SECONDARY LINE			
COMMUNICATION UNDERGROUND LINE			
COMMUNICATION MARKER			
GASMAIN MARKER			
GASMAIN UNDERGROUND PIPE			

DRAWING INDEX	
DRAWING No.	DESCRIPTION
G-01	COVER SHEET
G-02	LEGEND AND DRAWING INDEX
SP-01	1085 UXBRIDGE PICKERING TOWNLINE, CLAREMOUNT
SP-02	1509 CONC. 2, PICKERING
SP-03	4440 SIDELINE 34, PICKERING
SP-04	6445 19th AVENUE, MARKHAM
SP-05	7056 MAJOR MACKENZIE DR. EAST, MARKHAM
SP-06	7528 ELGIN MILLS ROAD, MARKHAM
SP-07	7558 ELGIN MILLS ROAD, MARKHAM
SP-08	7630 MAJOR MACKENZIE DR. EAST, MARKHAM
SP-09	10888 RESSOR ROAD, MARKHAM
D-01	GRAVITY FED CONVENTIONAL SEPTIC BEDS
D-02	RAISED BED SYSTEM DETAILS
D-03	SHALLOW BED SYSTEM DETAILS
D-04	SEPTIC TANKS DETAILS I
D-05	SEPTIC TANKS DETAILS II
D-06	BIOFILTER TANK DETAILS
D-07	ANAEROBIC DIGESTER TANK DETAILS
D-08	ANAEROBIC DIGESTER TANK, PUMP CHAMBER, DISTIRBUTION BOX DETAILS
E-00	ELECTRICAL SPECIFICATIONS
E-01a	1085 UXBRIDGE PICKERING TOWNLINE, CLAREMOUNT - ELECTRICAL SITE PLANS AND DETAILS
E-01b	1085 UXBRIDGE PICKERING TOWNLINE, CLAREMOUNT - EXISTING/NEW PANEL SCHEDULE
E-02	1509 CONC. 2, PICKERING
E-03a	4440 SIDELINE 34, PICKERING - ELECTRICAL SITE PLANS AND DETAILS
E-03b	4440 SIDELINE 34, PICKERING - EXISTING/NEW PANEL SCHEDULE
E-04	6445 19th AVENUE, MARKHAM
E-06a	7528 ELGIN MILLS ROAD, MARKHAM - ELECTRICAL SITE PLANS AND DETAILS
E-06b	7528 ELGIN MILLS ROAD, MARKHAM - EXISTING/NEW PANEL SCHEDULE
E-07a	7558 ELGIN MILLS ROAD, MARKHAM - ELECTRICAL SITE PLANS AND DETAILS
E-08	7630 MAJOR MACKENZIE DR. EAST, MARKHAM
E-09	10888 RESSOR ROAD, MARKHAM

GENERAL NOTES:

- OBTAIN LOCATES BEFORE START OF CONSTRUCTION.
- RESTORE ALL DISTURBED AREAS, FENCES, LANDSCAPING FEATURES TO ORIGINAL CONDITIONS UNLESS SPECIFIED OTHERWISE.
- COORDINATE SITE ACTIVITIES WITH PARKS CANADA AND THE TENANTS.
- AT ALL TYPES OF ABSORPTION TRENCHES, HEADER AND PIPING TO HAVE 14 GAUGE TW SOLID COPPER LIGHT COLOURED PLASTIC COATED TRACE WIRE.

Canada

Parks Canada

Rouge National Urban Park

Parcs Canada

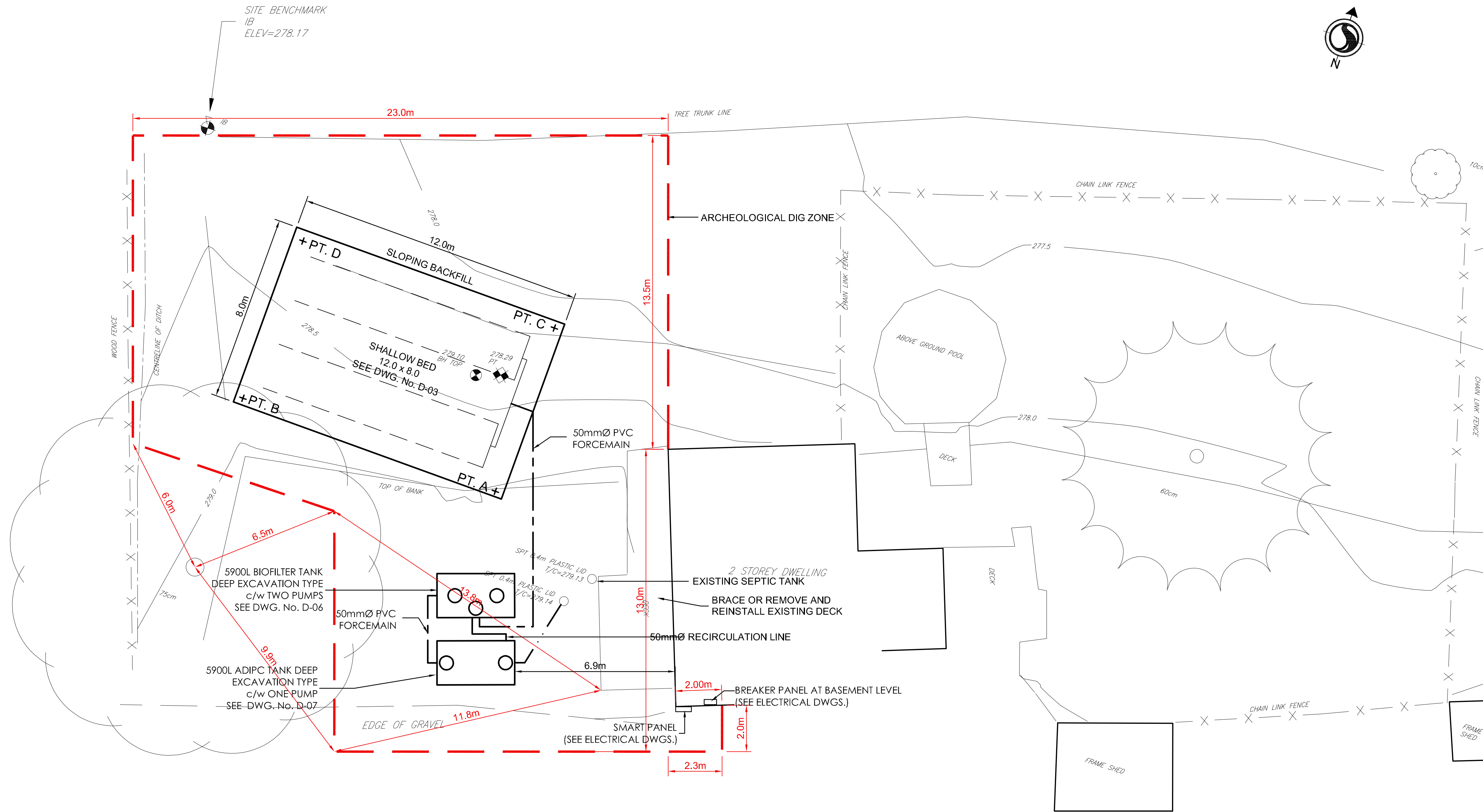
Parc Urbain National de la Rouge

	05.30.18	ISSUED FOR TENDER	E.C.	J.H.		
	04.25.18	ISSUED FOR 90% REVIEW	E.C.	J.H.		
No.	Date	Description	Drawn by Dessiné par	Approved Approuvé		
Revision / Revision						
<div><div>A</div><div>B</div></div>		Detail number Sheet number	A Numéro de detail B Numéro de la feuille			
		Linear dimensions in millimetres	Dimensions linéaires en millimètres			
Consultant's Name Nom de l'expert-conseil			Eng. Stamp Sceau de l'ingénieur			
<div></div> <div>Stantec Consulting Ltd. 1331-400, Clyde Avenue Ottawa (Ontario) K2C 3G4 Telephone : 613.722.4420 Fax : 613.722.2799</div>						
Project title/Titre du projet						
ROUGE NATIONAL URBAN PARK SEPTIC SYSTEM REPLACEMENTS						
Drawing title/Titre du dessin						
LEGEND AND DRAWING INDEX						
Designed by/Concept par J. HEBERT			Date			
Drawn by/Dessiné par E.CALBERRY			Date			
Checked by/Vérifié par J. HEBERT			Date			
Project No./Nº du projet 163401449		Scale/Echelle AS INDICATED	Sheet No./ Nº de la feuille G-02			
Drawing Set No./Nº de série du dessin						





ROAD SIDE



SITE PLAN



Canada



Parks Canada

Rouge National  
Urban Park

Parcs Canada

Parc Urbain National  
de la Rouge

LEGEND

	BH	BOREHOLE
	SHB	SHRUB
	SPT	SEPTIC TANK LID
	PT	PERCOLATION TEST
	D.B.H.	DIAMETER AT BREAST HEIGHT
		TREE CONIFEROUS (D.B.H. SHOWN)
		TREE DECIDUOUS (D.B.H. SHOWN)
		TREE LINE
		FENCE LINE
		ARCHEOLOGICAL DIG ZONE

NOTE:

- CONTRACTOR TO SUPPLY, PLACE, MAINTAIN AND REMOVE EROSION CONTROL MEASURES.

RAISED SHALLOW BED ELEVATIONS

+PT. A	TOP OF FIELD = 279.10 TOP OF IMPORTED FILL = 278.60
+PT. B	TOP OF FIELD = 279.10 TOP OF IMPORTED FILL = 278.50
+PT. C	TOP OF FIELD = 279.04 TOP OF IMPORTED FILL = 278.46
+PT. D	TOP OF FIELD = 278.94 TOP OF IMPORTED FILL = 278.36

RAISED SHALLOW BED DETAILS

4 ROWS - 10.0m LONG 32mmØ PERFORATED PVC PIPE  
SEE DWG. No. D-03 FOR DETAILS  
FORCEMAIN MANIFOLD c/w 4 OUTLETS  
SEE DWG. No. D-03 FOR DETAILS

DESIGN FLOW = 2000 L/D  
PERCOLATION RATE = 22.0 MIN/CM  
MINIMUM CONVENTIONAL LEACHING BED AREA = 250m²  
PROPOSED LEACHING BED AREA = 80m² (SHALLOW BED)

No.	Date	Description	Drawn by Dessiné par	Approved Approuvé
05.30.18		ISSUED FOR TENDER	E.C.	J.H.
04.25.18		ISSUED FOR 90% REVIEW	E.C.	J.H.

Revision / Revision

A	Detail number	A Numéro de détail
B	Sheet number	B Numéro de la feuille

Linear dimensions in millimetres  
Dimensions linéaires en millimètres

Consultant's Name  
Nom de l'expert-conseil



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Ottawa, Ontario K2C 3K4  
Telephone : 613-722-4420  
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Eng. Stamp  
Sceau de l'ingénieur

Project title/Titre du projet

ROUGE NATIONAL URBAN PARK  
SEPTIC SYSTEM REPLACEMENTS

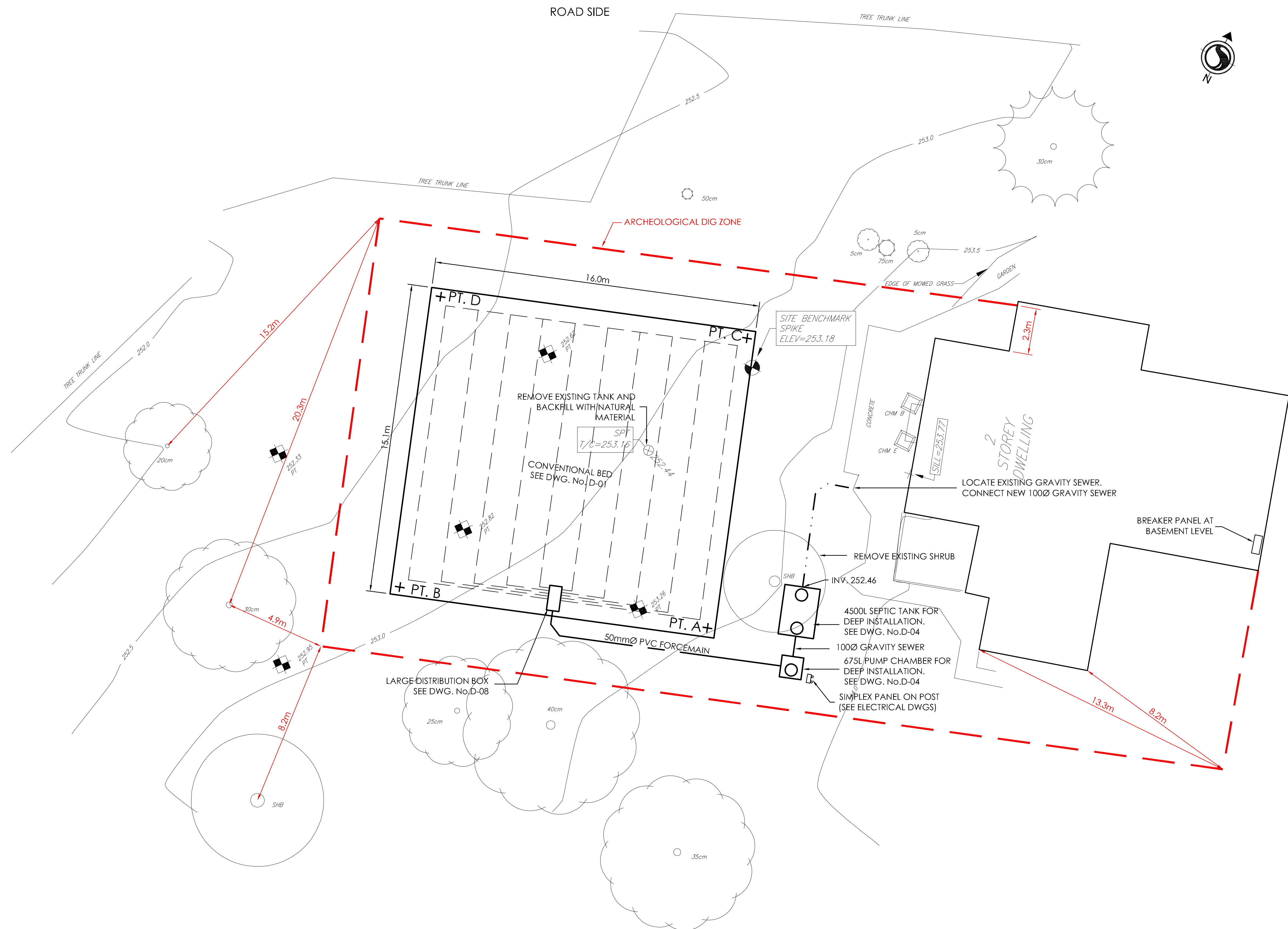
Drawing title/Titre du dessin

1509 CONCESSION 2  
PICKERING  
SITE PLAN AND DETAILS

Designed by/Concept par J. HEBERT	Date
Drawn by/Dessiné par E.CALBERRY	Date
Checked by/Vérifié par J. HEBERT	Date
Project No./Nº du projet 163401449	Scale/Echelle AS INDICATED
Drawing Set No./Nº de série du dessin	Sheet No./ Nº de la feuille SP-02







LEGEND

	BH	BOREHOLE
	SHB	SHRUB
	SPT	SEPTIC TANK LID
	PT	PERCOLATION TEST
	D.B.H.	DIAMETER AT BREAST HEIGHT
		TREE CONIFEROUS (D.B.H. SHOWN)
		TREE DECIDUOUS (D.B.H. SHOWN)
		TREE LINE
		FENCE LINE
		ARCHEOLOGICAL DIG ZONE

NOTE:

- CONTRACTOR TO SUPPLY, PLACE, MAINTAIN AND REMOVE EROSION CONTROL MEASURES.

CONVENTIONAL FIELD ELEVATIONS

+ PT. A	TOP OF GROUND = 253.30 PERFORATED PIPE INVERT = 252.70
+ PT. B	TOP OF GROUND = 252.70 PERFORATED PIPE INVERT = 252.10
+ PT. C	TOP OF GROUND = 253.05 PERFORATED PIPE INVERT = 252.65
+ PT. D	TOP OF GROUND = 252.45 PERFORATED PIPE INVERT = 252.05

CONVENTIONAL FIELD DETAILS

10 ROWS - 13.0m LONG 75mmØ PERFORATED PVC PIPE  
AT 0.3% SLOPE  
SEE DWG. No. D-01 FOR DETAILS

DESIGN FLOW = 2000 L/D  
PERCOLATION RATE = 13.0 MIN/CM  
MINIMUM CONVENTIONAL LEACHING BED AREA = 200m²  
PROPOSED LEACHING BED AREA = 208m² (CONVENTIONAL BED)

No.	Date	Description	Drawn by Dessiné par	Approved Approuvé
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Revision / Revision
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Linear dimensions in millimetres	Dimensions linéaires en millimètres
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Consultant's Name Nom de l'expert-conseil	Eng. Stamp Sceau de l'ingénieur
 Stantec Consulting Ltd. 1331-400, Clyde Avenue Ottawa (Ontario) K2C 3G4 Telephone : 613.722.4420 Fax : 613.722.2799	

Project title/Titre du projet

ROUGE NATIONAL URBAN PARK  
SEPTIC SYSTEM REPLACEMENTS

Drawing title/Titre du dessin

6445 19th AVENUE  
MARKHAM  
SITE PLAN AND DETAILS

Designed by/Concept par J. HEBERT	Date
Drawn by/Dessiné par E.CALBERRY	Date
Checked by/Vérifié par J. HEBERT	Date
Project No./Nº du projet 163401449	Scale/Echelle AS INDICATED
Drawing Set No./Nº de série du dessin	Sheet No./ Nº de la feuille SP-04

NOTE:

- CONTRACTOR IS RESPONSIBLE FOR ALL LANDSCAPING REINSTATEMENT INCLUDING EXISTING AROUND THE HOUSE.
- CONTRACTOR IS TO VALIDATE PRESENCE OF WATER PRIOR TO REMOVAL OF EXISTING SEPTIC TANK.









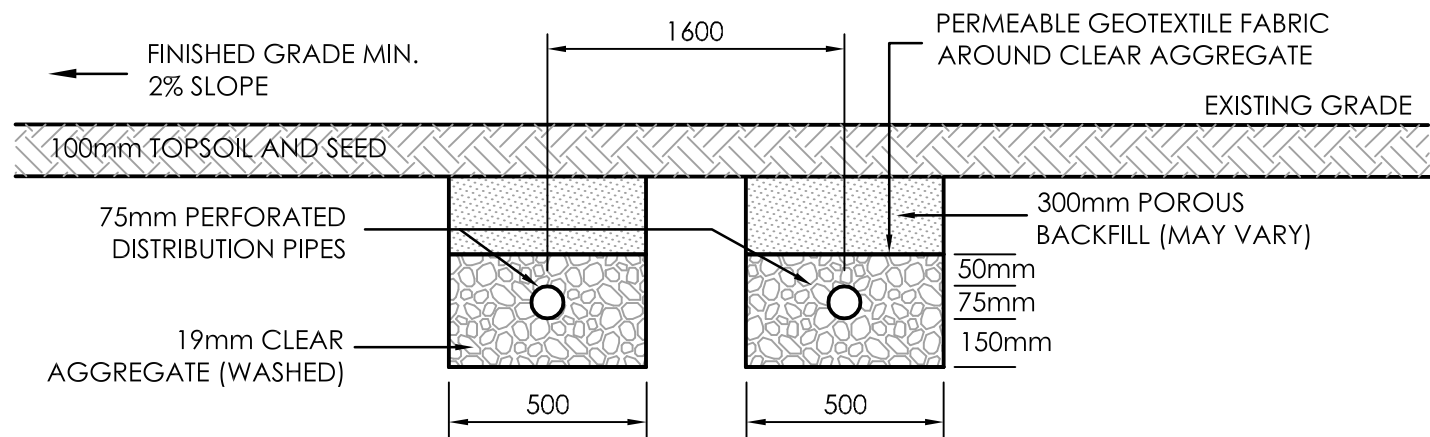




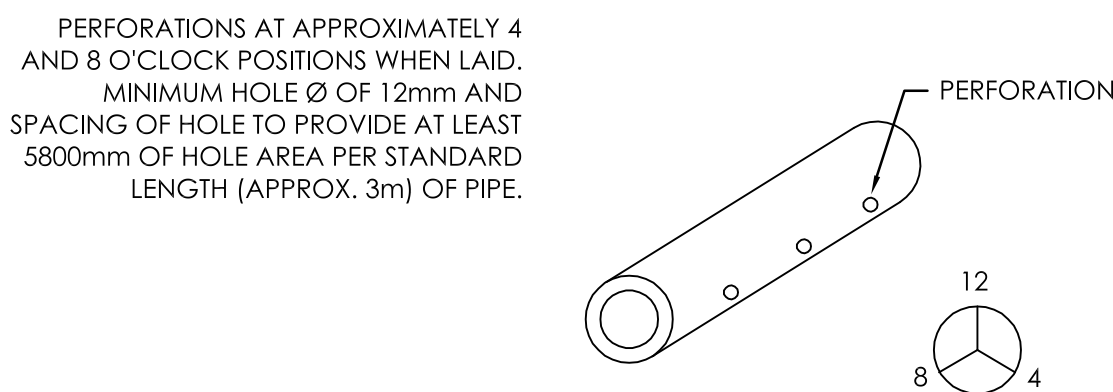




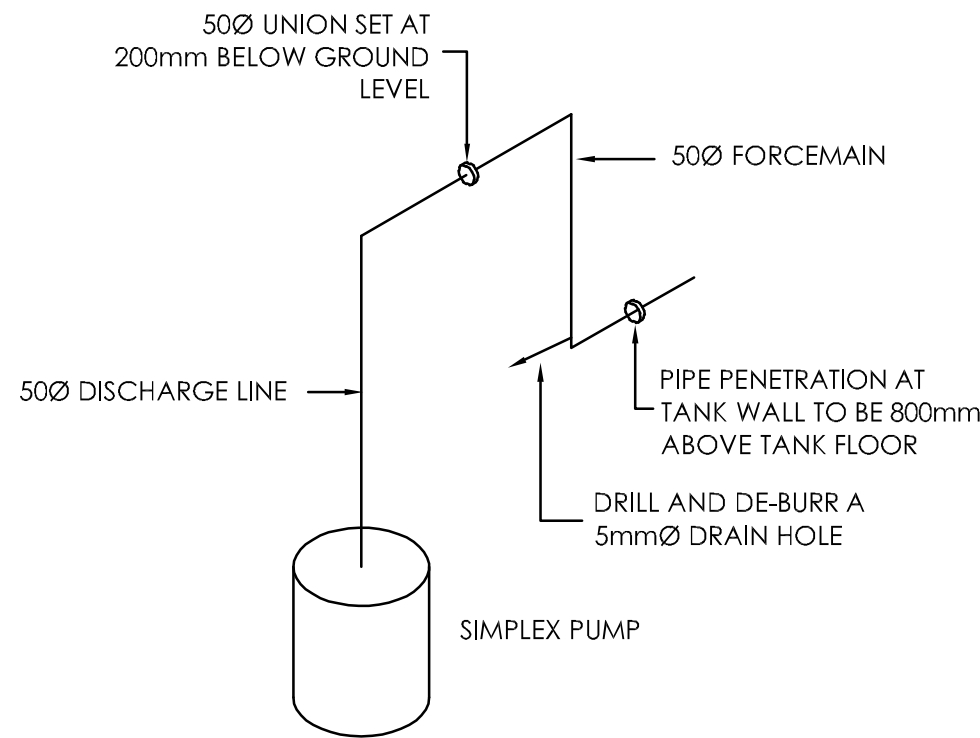




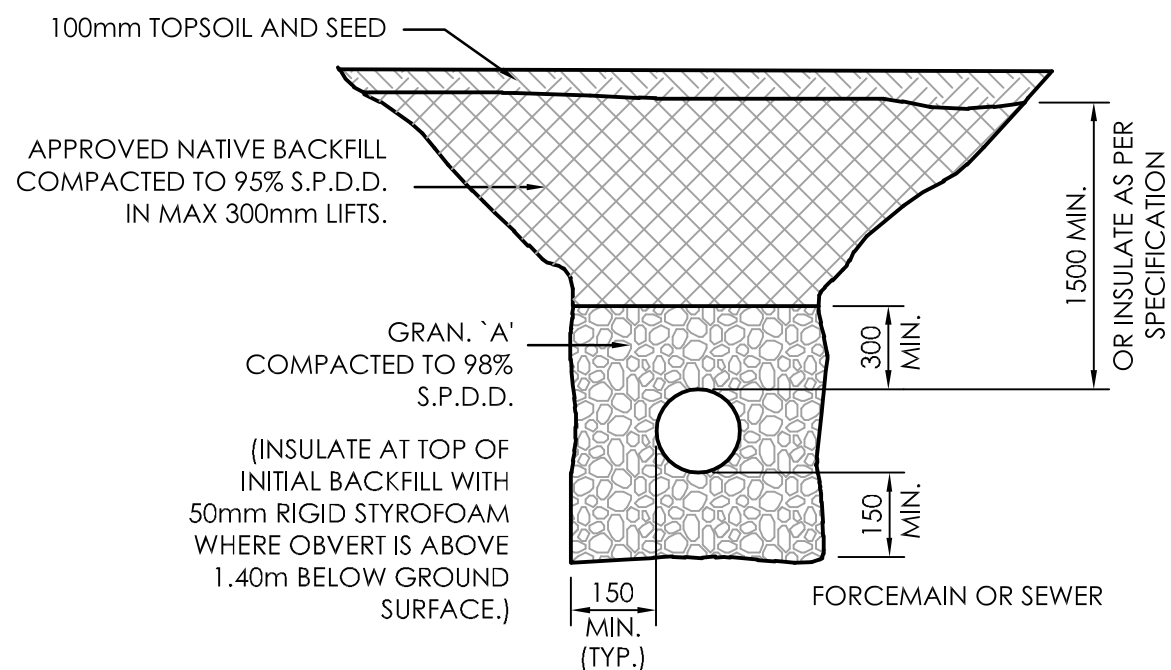
ABSORPTION TRENCHES  
NTS



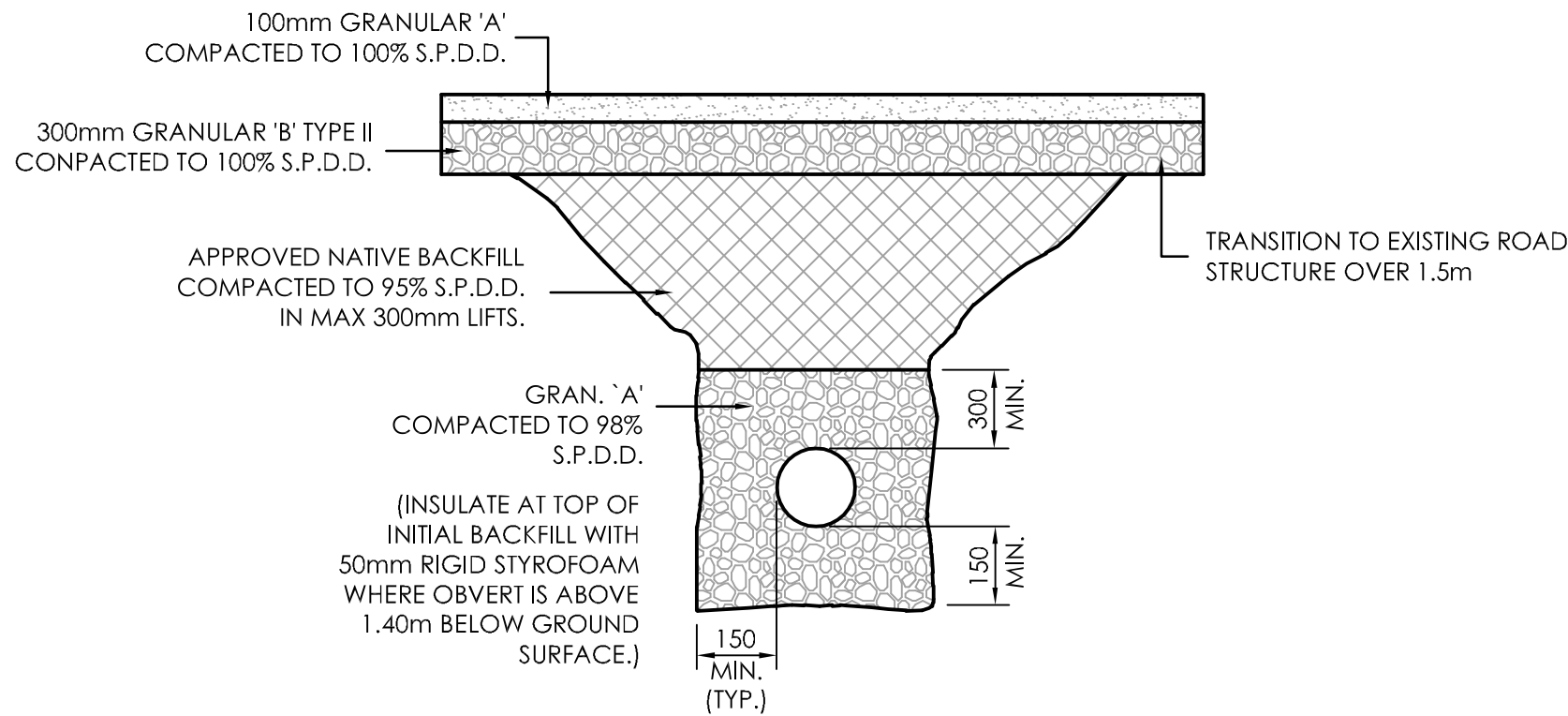
DISTRIBUTION PIPE DETAIL  
NTS



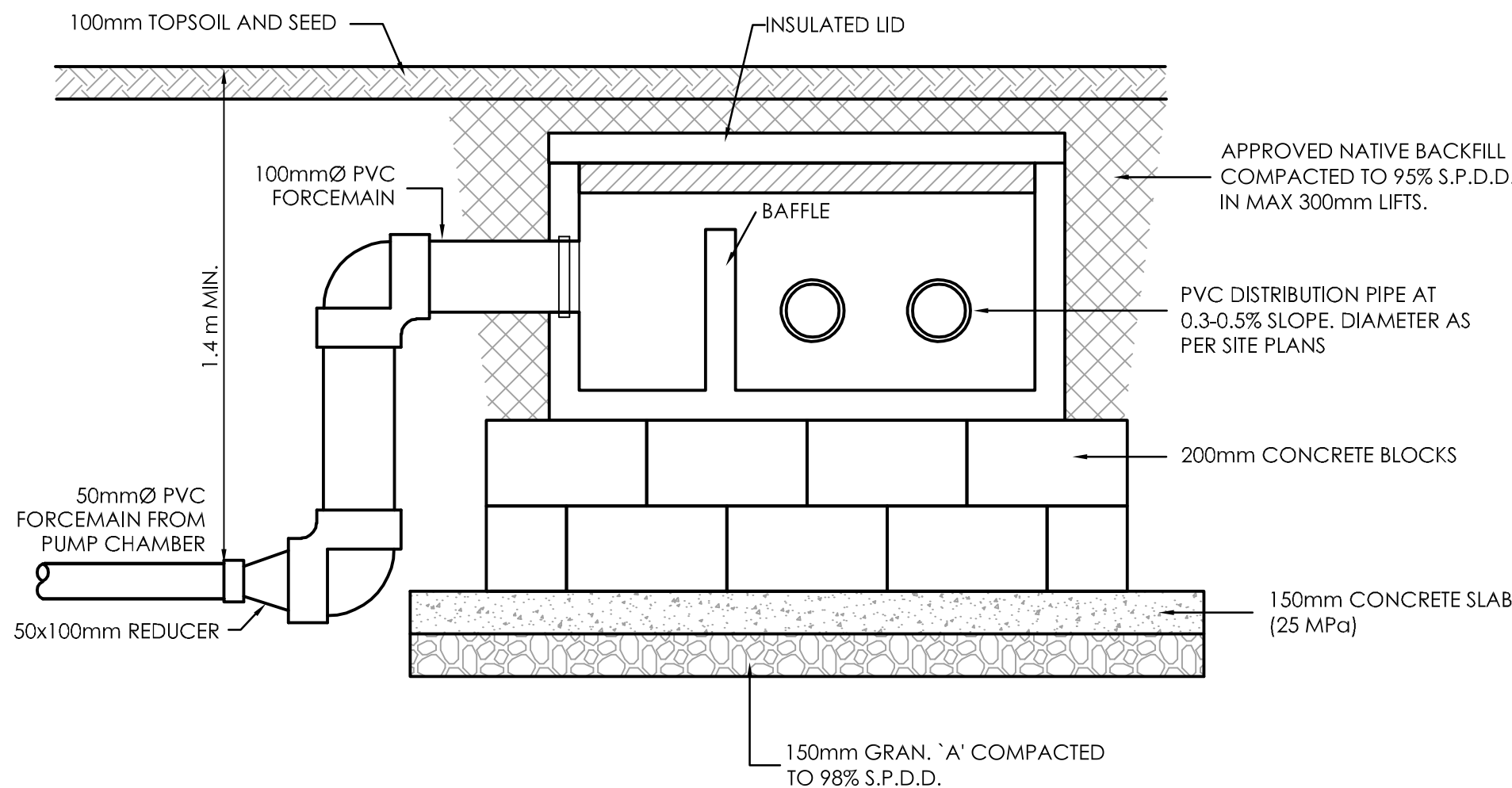
SIMPLEX PUMP CHAMBER PIPING SCHEMATIC  
N.T.S.



FORCEMAIN OR SEWER BEDDING DETAIL  
WITHIN GRASSED AREA  
NTS



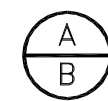
FORCEMAIN BEDDING DETAIL  
WITHIN GRAVEL DRIVEWAY  
NTS



DISTRIBUTION BOX DETAIL (PUMPED SYSTEM)  
NTS

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Detail number  
Sheet number  
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B Numéro de la feuille

Linear dimensions  
in millimetres  
Dimensions linéaires  
en millimètres

Consultant's Name  
Nom de l'expert-conseil



1331-400, Clyde Avenue  
Ottawa (Ontario) K2C 3G4  
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Fax : 613.722.2799

Eng. Stamp  
Sceau de l'ingénieur

Project title/Titre du projet

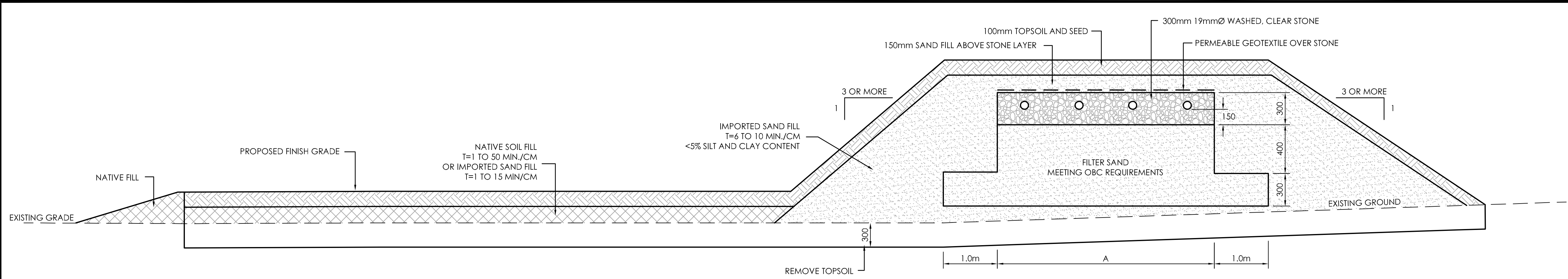
## ROUGE NATIONAL URBAN PARK SEPTIC SYSTEM REPLACEMENTS

Drawing title/Titre du dessin

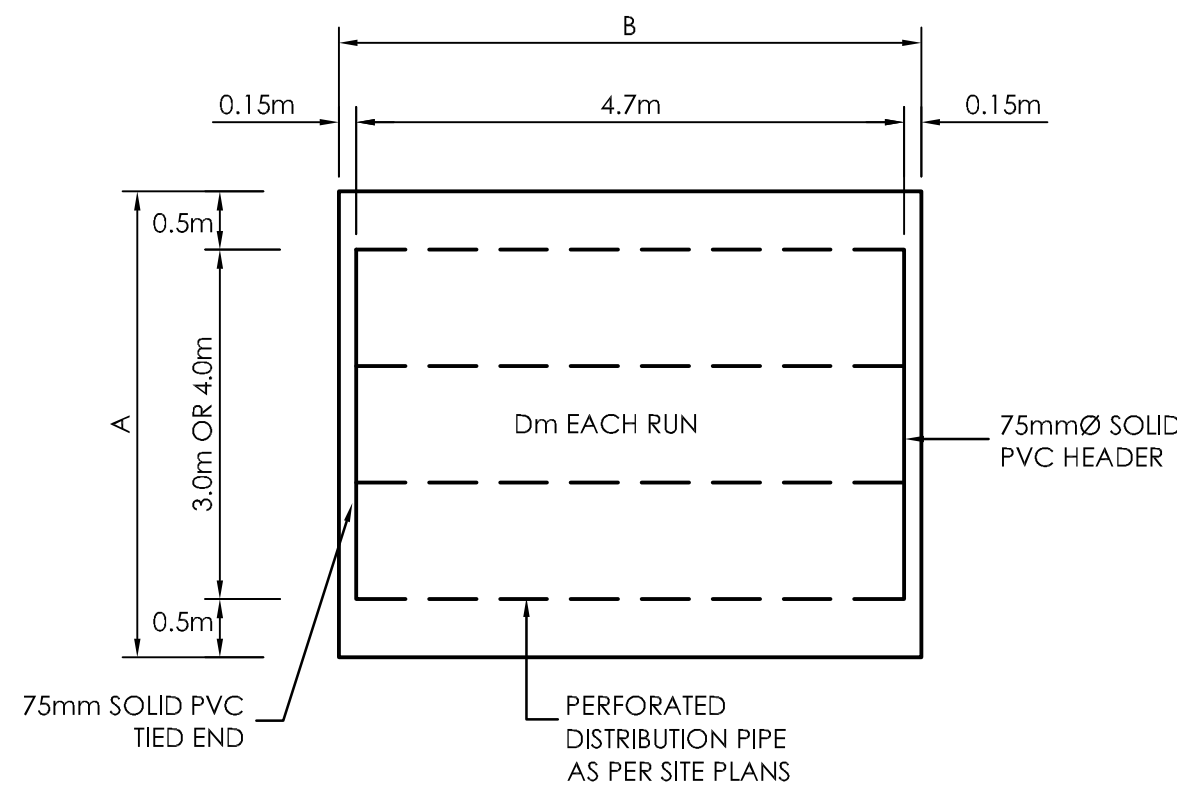
## GRAVITY FED CONVENTIONAL SEPTIC BEDS

Designed by/Concept par J. HEBERT	Date
Drawn by/Dessiné par E.CALBERRY	Date
Checked by/Vérifié par J. HEBERT	Date
Project No./Nº du projet 163401449	Scale/Echelle AS INDICATED
Drawing Set No./Nº de série du dessin	Sheet No./ Nº de la feuille D-01



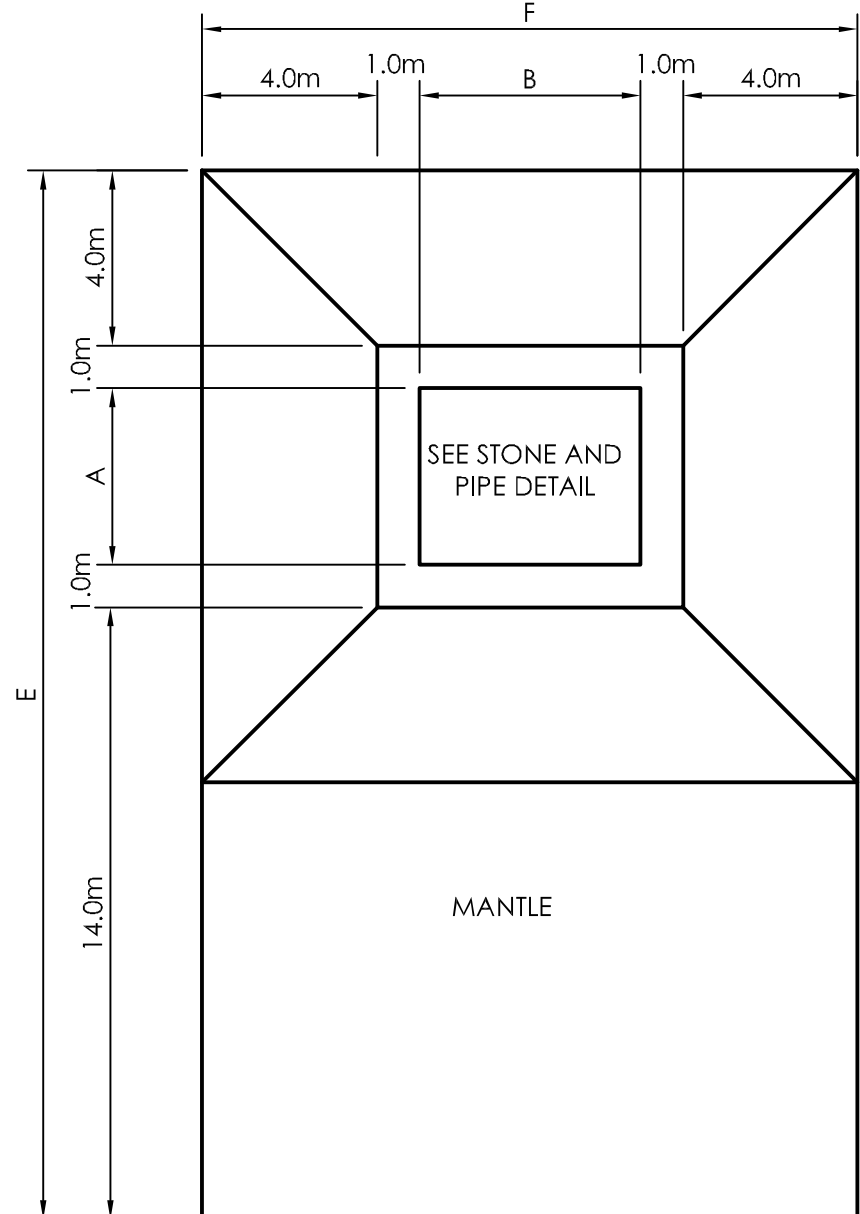


FILTER BED DIMENSIONS  
N.T.S.



NOTE:  
1. SUPPLY AND PLACE 14 GAUGE TRACING WIRE ABOVE ALL PIPES.

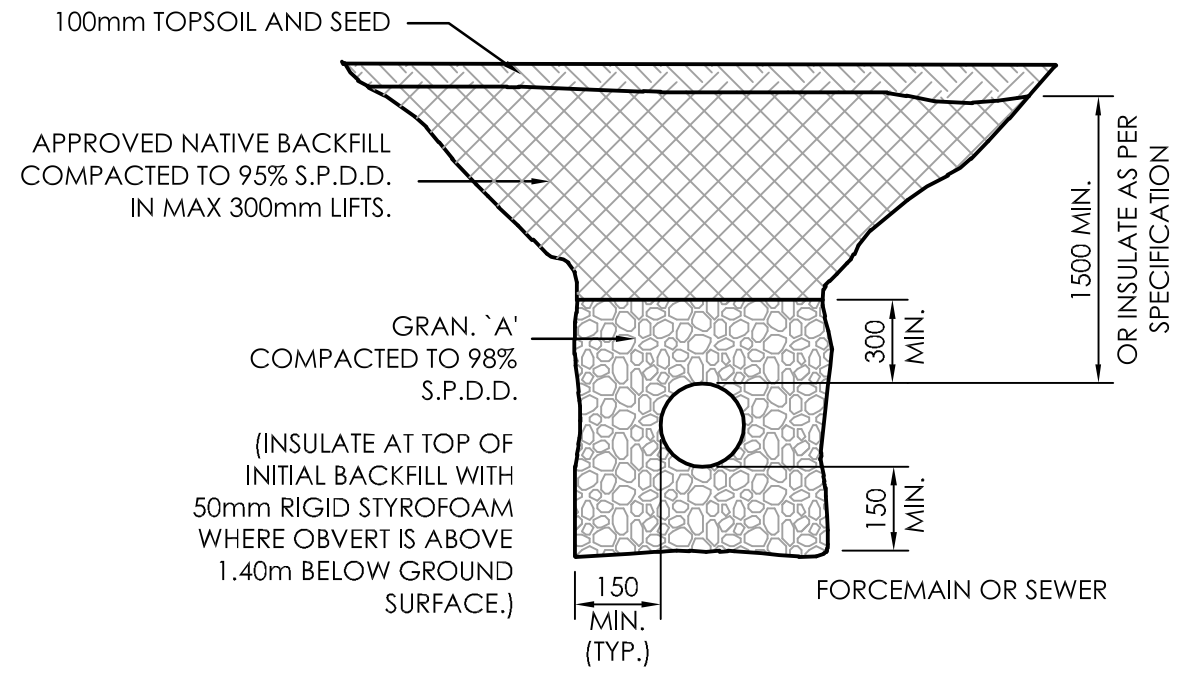
STONE AND PIPE LAYOUT  
N.T.S.



FILTER BED DIMENSIONS  
N.T.S.

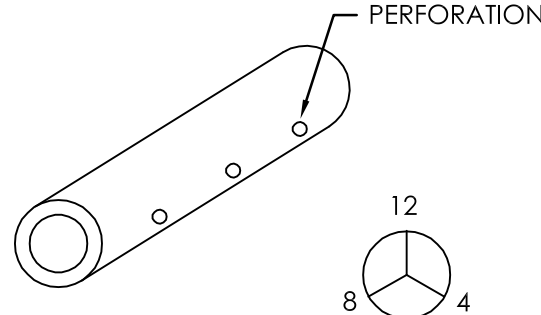
	7528 ELGIN MILLS	7558 ELGIN MILLS
STONE BED		
A	4.0	5.0
B	6.0	6.0
PERFORATED PIPE		
C (No. OF ROWS)	3	4
D (LENGTH IN METRES)	5.7	5.7
OVERALL DIMENSIONS		
E (m)	22.0	23.0
F (m)	12.0	12.0

NOTE: RAISED FIELD REQUIRED AT 10531 NINTH LINE ONLY IF WATER TABLE IS TO CLOSE TOO GROUND SURFACE.

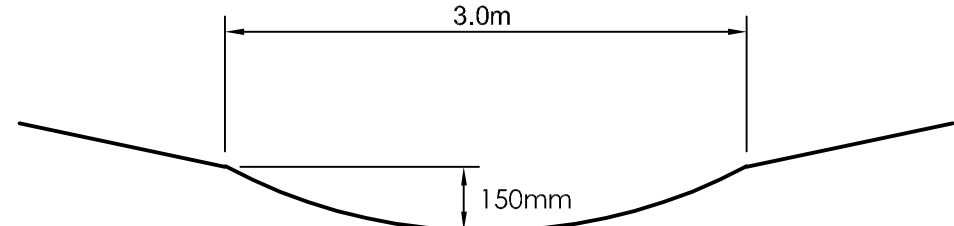


FORCEMAIN OR SEWER BEDDING DETAIL  
N.T.S.

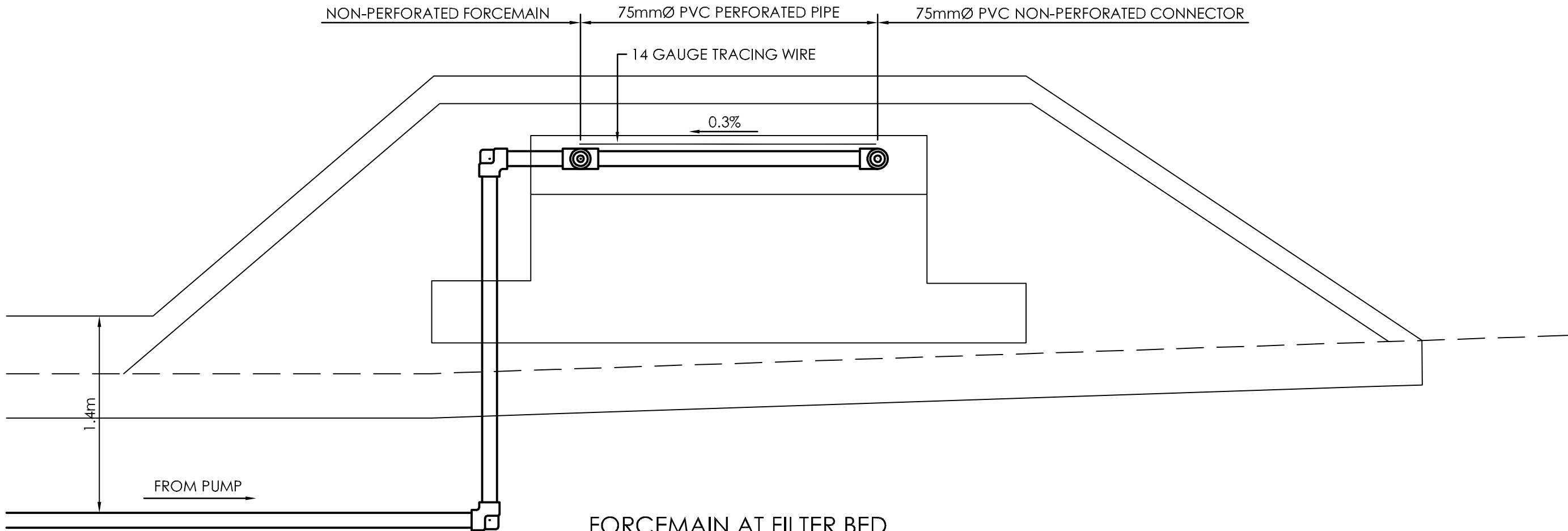
PERFORATIONS AT APPROXIMATELY 4 AND 8 O'CLOCK POSITIONS WHEN LAID. MINIMUM HOLE Ø OF 3mm AND SPACING OF HOLE TO PROVIDE AT LEAST 5800mm OF HOLE AREA PER STANDARD LENGTH (APPROX. 3m) OF PIPE.



DISTRIBUTION PIPE DETAIL  
N.T.S.



TYPICAL SWALE DETAIL  
N.T.S.



FORCEMAIN AT FILTER BED  
N.T.S.

Canada



Parks Canada

Rouge National Urban Park

Parcs Canada

Parc Urbain National de la Rouge

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Revision / Revision

A	Detail number	A Numéro de détail
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Consultant's Name Nom de l'expert-conseil	Eng. Stamp Sceau de l'ingénieur
 Stantec Consulting Ltd. 1331-400, Clyde Avenue Ottawa (Ontario) K2C 3G4 Telephone : 613.722.4420 Fax : 613.722.2799	

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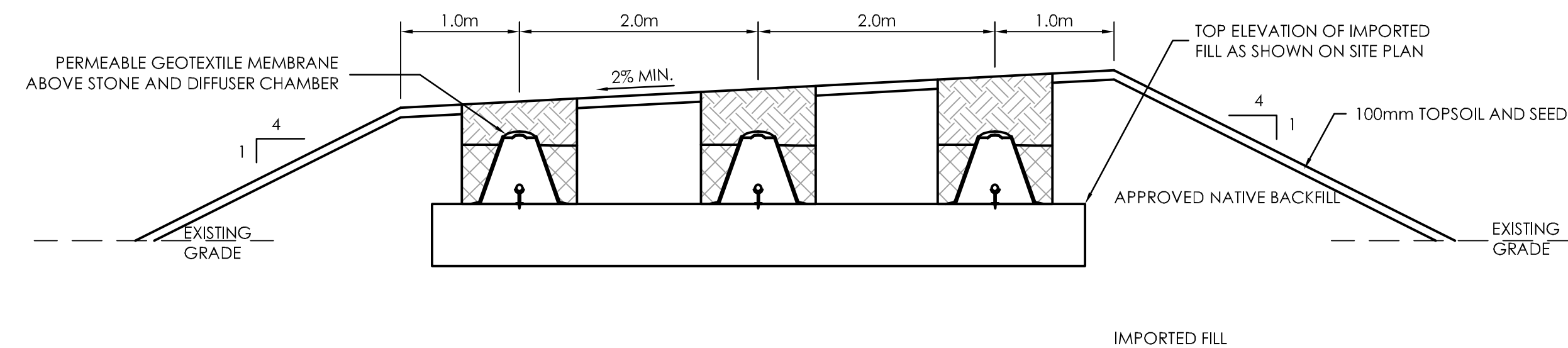
## ROUGE NATIONAL URBAN PARK SEPTIC SYSTEM REPLACEMENTS

Drawing title/Titre du dessin

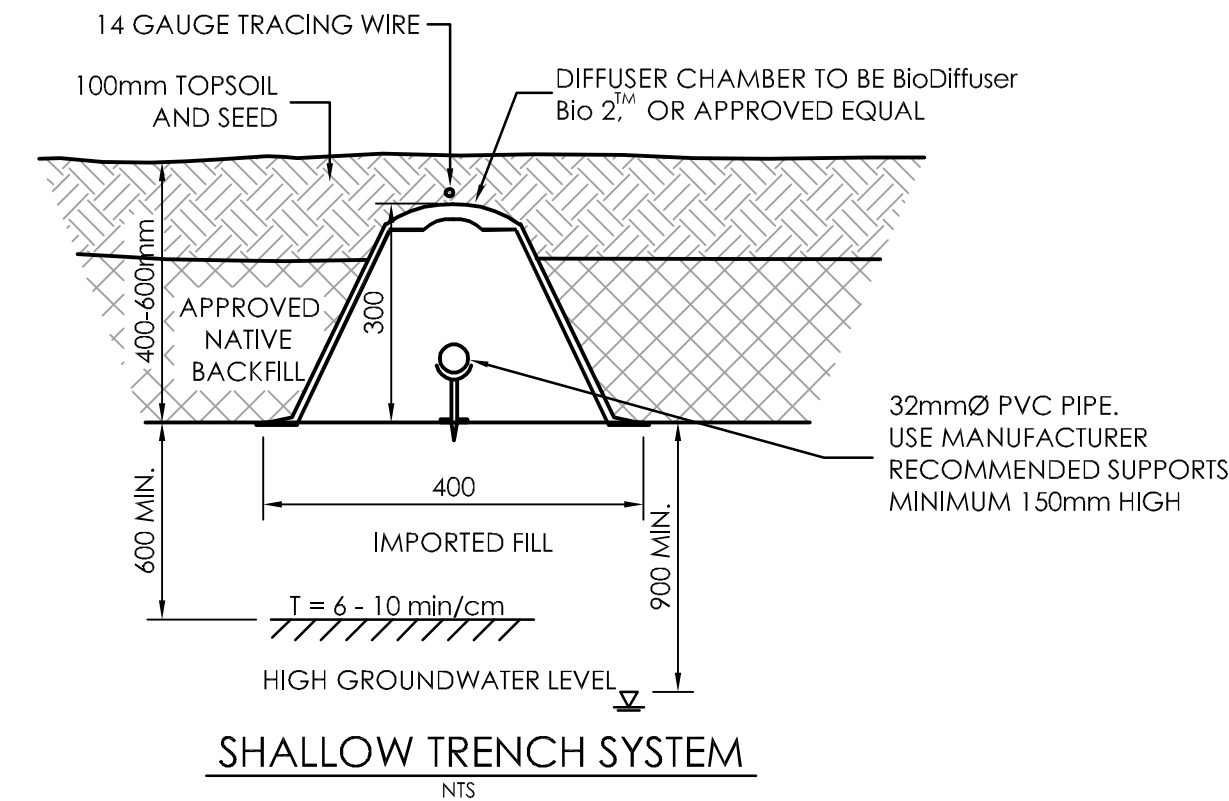
### RAISED BED SYSTEM DETAILS

Designed by/Concept par J. HEBERT	Date
Drawn by/Dessiné par E.CALBERRY	Date
Checked by/Vérifié par J. HEBERT	Date
Project No./Nº du projet 163401449	Scale/Echelle AS INDICATED
Drawing Set No./Nº de série du dessin	Sheet No./ Nº de la feuille D-02

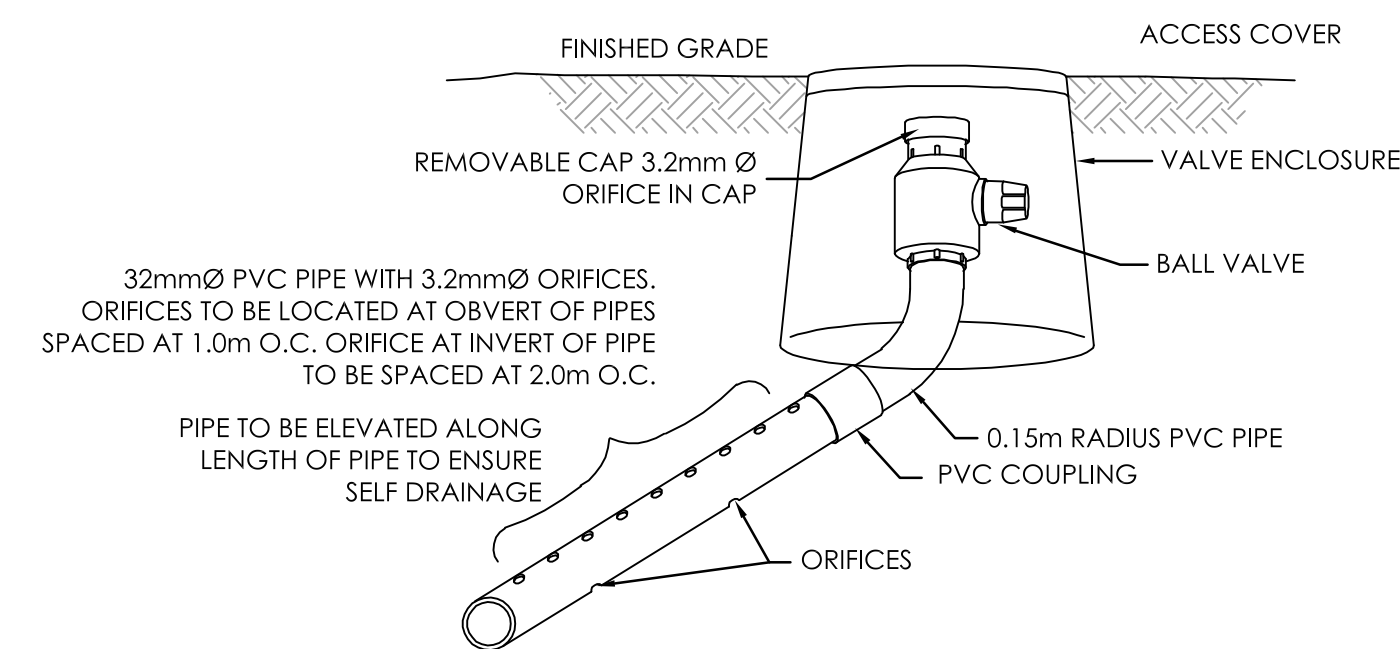




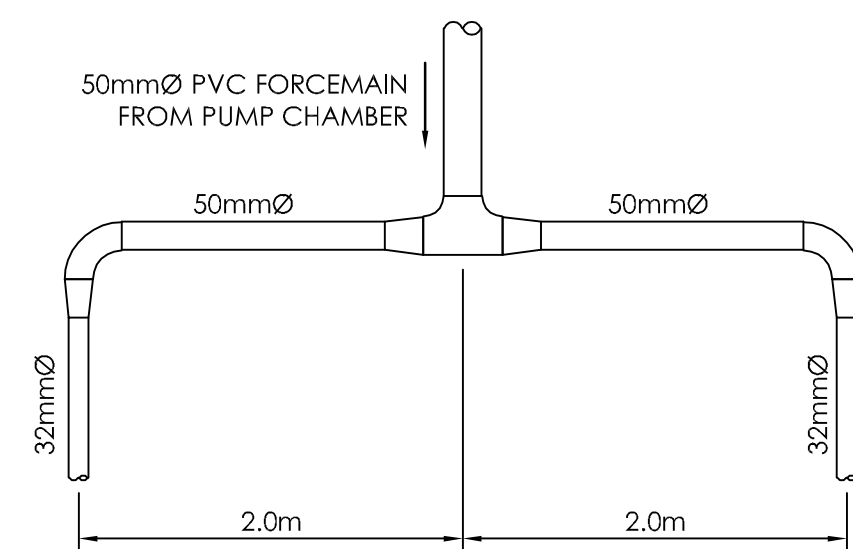
SHALLOW TRENCH CROSS SECTION  
NTS



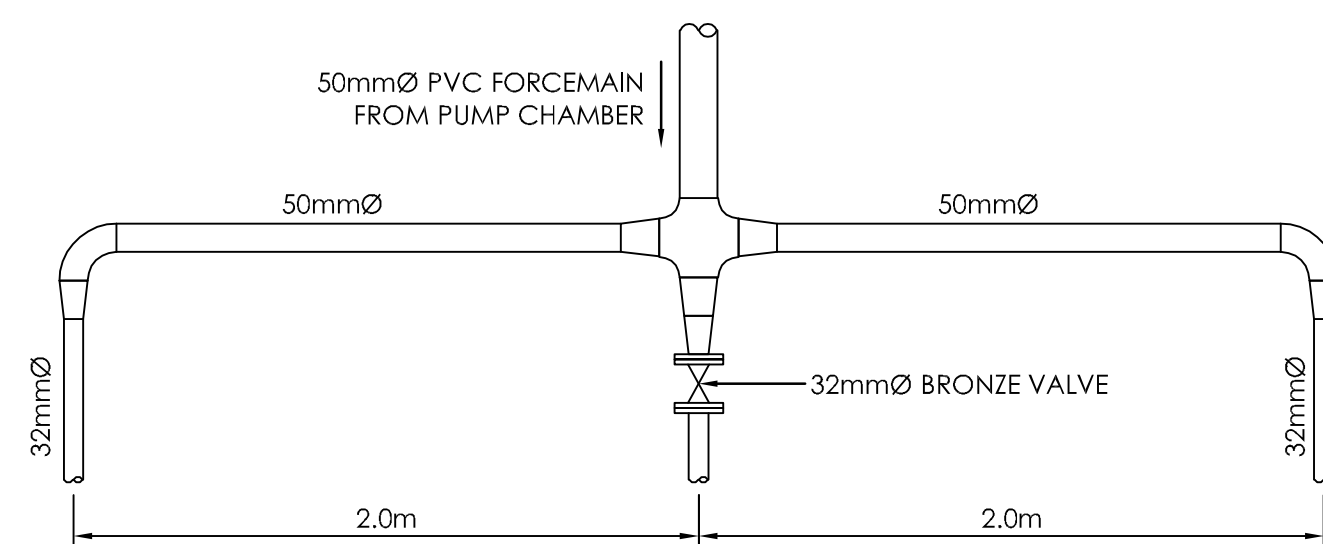
SHALLOW TRENCH SYSTEM  
NTS



DISTRIBUTION PIPE DETAIL  
NTS

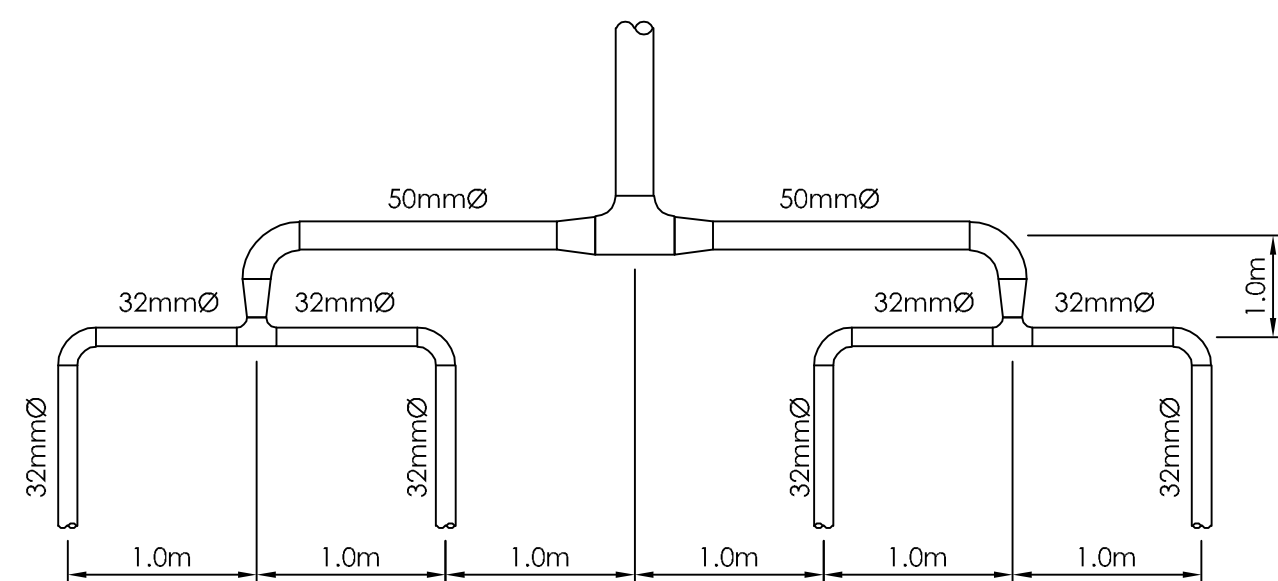


TWO ROW MANIFOLD



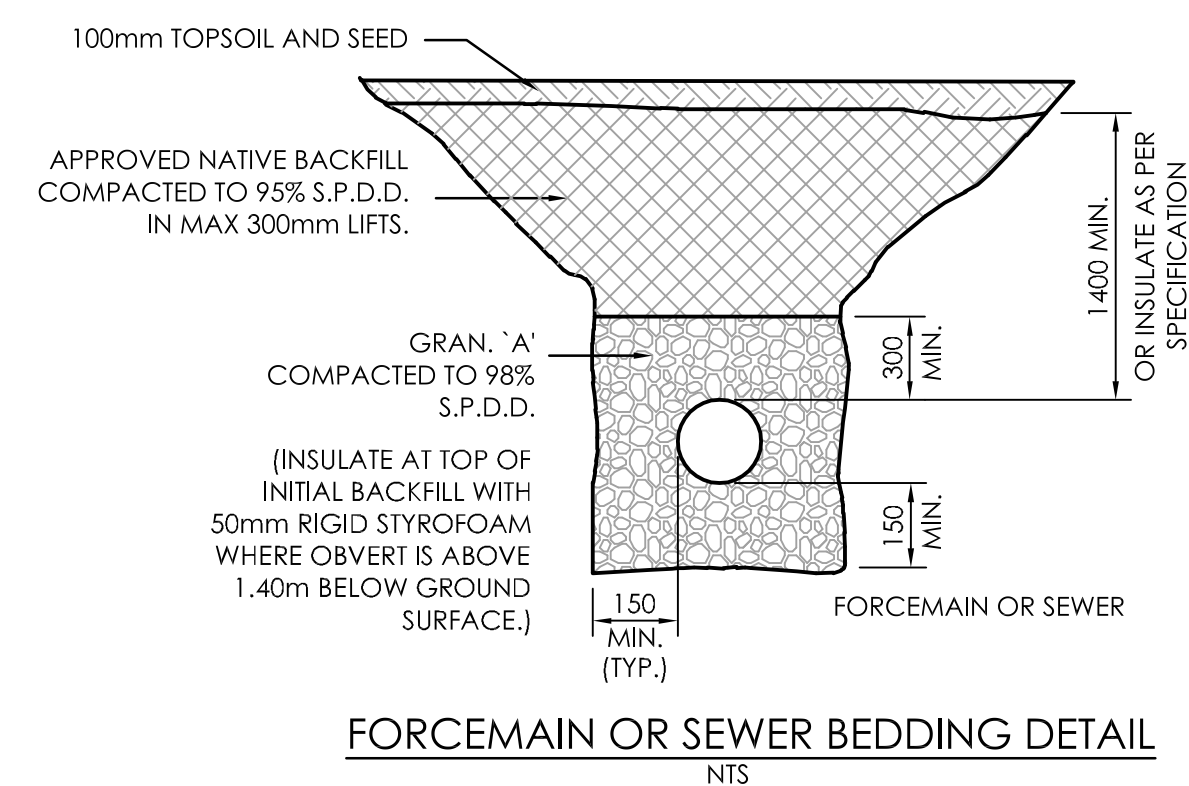
THREE ROW MANIFOLD

NOTE:  
CONTRACTOR TO PUMP CLEAN WATER THROUGH PERFORATED  
PIPING SYSTEM TO ADJUST BRONZE VALVE BEFORE INSTALLING  
DIFFUSER CHAMBER ABOVE PIPE.

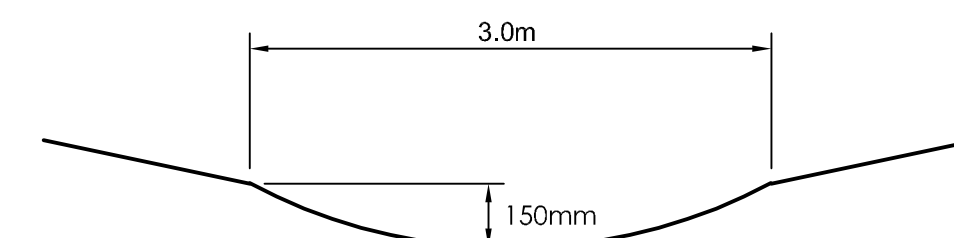


FOUR ROW MANIFOLD

FORCEMAIN MANIFOLDS  
N.T.S.



FORCEMAIN OR SEWER BEDDING DETAIL  
NTS



TYPICAL SWALE DETAIL  
NTS

Canada



Parks Canada

Parcs Canada

Rouge National Urban Park

Parc Urbain National de la Rouge

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Linear dimensions in millimetres	Dimensions linéaires en millimètres
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Consultant's Name Nom de l'expert-conseil	Eng. Stamp Sceau de l'ingénieur
 <b>Stantec</b> Stantec Consulting Ltd. 1331-400, Clyde Avenue Ottawa (Ontario) K2C 3G4 Telephone : 613.722.4420 Fax : 613.722.2799	

Project title/Titre du projet

ROUGE NATIONAL URBAN PARK  
SEPTIC SYSTEM  
REPLACEMENTS

Drawing title/Titre du dessin

SHALLOW BED SYSTEM  
DETAILS

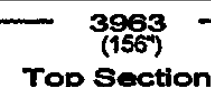
Designed by/Concept par J. HEBERT	Date
Drawn by/Dessiné par E.CALBERRY	Date
Checked by/Vérifié par J. HEBERT	Date
Project No./Nº du projet 163401449	Scale/Echelle AS INDICATED
Drawing Set No./Nº de série du dessin	Sheet No./ Nº de la feuille D-03







**Working Capacity 9272 Litres (2040 Gal)**

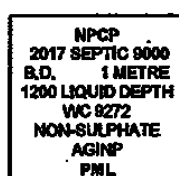


- |                        |                      |
|------------------------|----------------------|
| Bare Base Weight.....  | 6005 Kg (13,239 Lbs) |
| Lid Weight.....        | 2295 Kg (5059 Lbs)   |
| Total Tank Weight..... | 8300 Kg (18,298 Lbs) |

1. Two 100 x 130mm partition flow through
2. concrete inlet baffle is pre-fitted to accommodate three 100mm flexible rubber connections
3. Outlet contains one 100mm flexible rubber connection fitted with 100mm filter that meets Ontario Building Code
4. Cast in place 610mm ID plastic riser with plastic lid secured with stainless steel fasteners extending 100mm above top

Designed for up to one metre burial over top of tank - Deep burial vehicle traffic tanks are available upon request. Specialty conformations may be possible

**Tank Markings Observed:**  
Inlet & Outlet is Marked.  
Tank is marked on tank lid - Inlet End



**Working Capacity 13743 Litres (3081 Gal)**



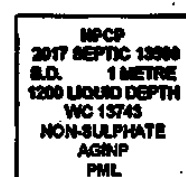
- This tank design is installed in multiple units
- Each unit is tongue and groove design and is sealed with fibrous mastic sealant
- Tanks are cast with 35 MPA strength concrete at 7 days with 5-7% air
- Steel reinforced with 10m rebar, spaced at 400mm in each direction at 25mm cover. CAN/CSA-G30.18.
- Tanks conform to National Standards of Canada CAN/CSA B86-10
- Non-sulphate resistant concrete
- Standard (3) 100mm Inlets.
- Chamber divider monolithically cast with structure.

Top Half Weight.....6735 Kg (15,289 Lbs)  
Bottom Half Weight.....6500 Kg (14,330 Lbs)  
Total Tank Weight.....13235 Kg (29,619 Lbs)

1. Two 235 x 80mm partition flow through holes
2. concrete inlet baffle is pre-fitted to accommodate three 100mm flexible rubber connections
3. Outlet contains one 100mm flexible rubber connection fitted with 100mm filter that meets Ontario Building Code
4. Cast in place 610mm ID plastic riser with plastic lid secured with stainless steel fasteners extending 100mm above top

**Designed for up to one metre burial over top of tank - Deep Burial and vehicle traffic tanks are available upon request. Specialty conformations may be possible**

**Tank Markings Observed:**  
Inlet & Outlet is Marked.  
Tank is marked on tank lid - Inlet End



### Tongue and Groove Joint



13500L SEPTIC TANK (2 COMPARTMENTS)

THE EXPRESSION "DEEP INSTALLATION TANK" ON THE SITE PLANS REFERS TO TANKS DESIGNED FOR UP TO TWO METRE BURIAL DEPTH.

	05.30.18	ISSUED FOR TENDER	E.C.	J.H.
	04.25.18	ISSUED FOR 90% REVIEW	E.C.	J.H.
No.	Date	Description	Drawn by Dessine par	Approved Approuvé

[illegible]

	Detail number	A Numéro de détail
	Sheet number	B Numéro de la feuille

Linear dimensions in millimetres	Dimensions linéaires en millimètres
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<p>Consultant's Name Nom de l'expert-conseil</p>	<p>Eng. Stamp Sceau de l'ingénieur</p>
<p> <b>Stantec</b> Stantec Consulting Ltd.</p>	
<p>1331-400, Clyde Avenue Ottawa (Ontario) K2C 3G4 Telephone : 613.722.4420 Fax : 613.722.2799</p>	

Project title/Titre du projet

# ROUGE NATIONAL URBAN PARK SEPTIC SYSTEM REPLACEMENTS

Drawing title/Titre du dessin

## SEPTIC TANK DETAILS II

Designed by/Concept par J. HEBERT		Date
Drawn by/Designé par E.CALBERRY		Date
Checked by/Vérifié par J. HEBERT		Date
Project No./N° du projet 163401449	Scale/Echelle AS INDICATED	Sheet No./ N° de la feu D 05
Drawing Set No./N° de série du dessin		

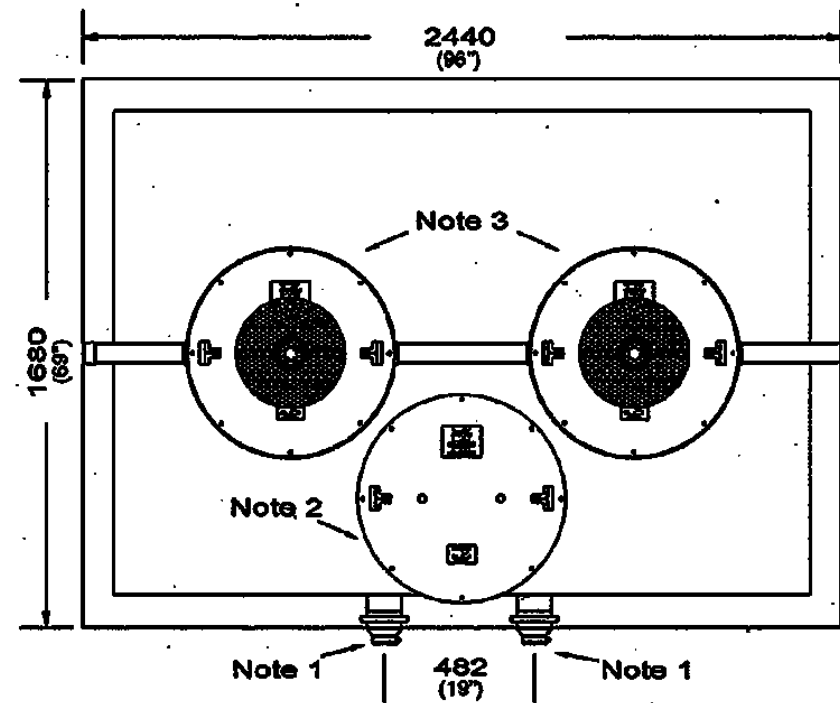


# NEWMARKET PRE-CAST CONCRETE PRODUCTS

Telephone: 905-852-6111 ; Toll Free 1-800-263-1297

## Model 4500 (1000) Waterloo Biofilter Tank - 1 Piece Unit

Working Capacity 1100 - 1600 Litres Per Day

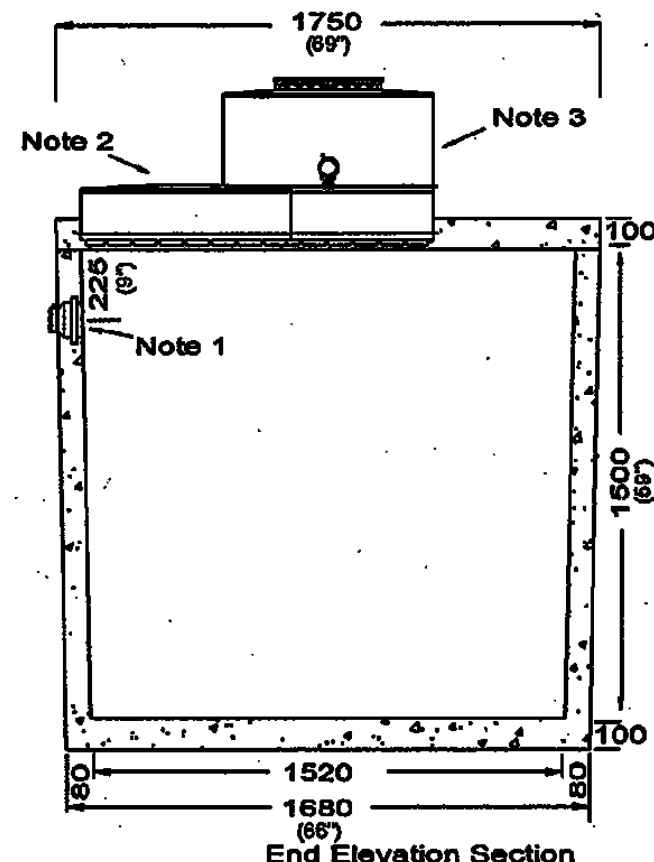
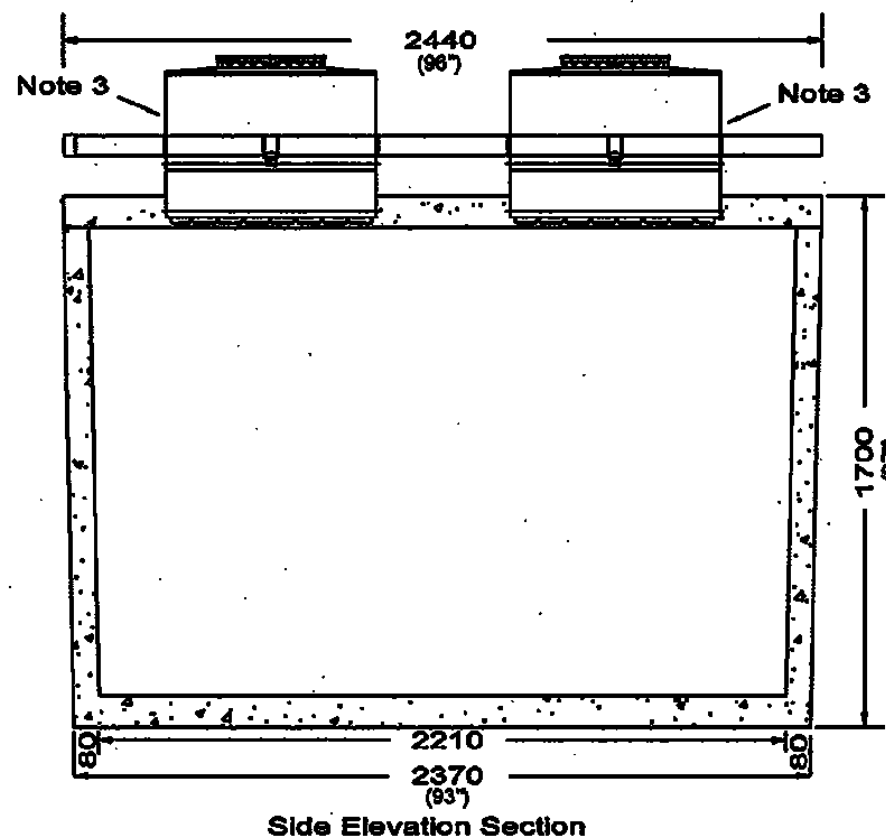


- This tank design is a one piece unit. Top is sealed with a fibrous mastic sealant
- Tanks are cast with 35 MPA strength concrete at 7 days with 5-7% air
- 3.0 Kg. structural fibre added to concrete. ASTM C 1118
- Lid has 10m Pre-manufactured welded wire
- Reber Cover 25mm
- Tanks conform to National Standards of Canada CAN/CSA B66-16
- Non-sulphate resistant concrete
- Standard 50mm Inlet through either side of the Manifold Through Risers and (2) 50m Outlets

Bare Base Weight.....3590 Kg (7,914 Lbs)  
Lid Weight.....1040 Kg (2,293 Lbs)  
Total Tank Weight.....4630 Kg (10,207 Lbs)

- Notes
- Two cast in 50mm Outlets for Recirculation Line and Disposal Line
  - Cast in Place 610mm ID Polylok Riser with Insulated Lid Secured with Hex-Head Stainless Steel Fasteners extending 100mm Above Concrete
  - Cast in place 610mm ID Polylok Riser with Insulated Carbon Vented Lid Secured with Hex-Head Stainless Steel Fasteners extending 400mm above concrete

Designed for up to one metre burial over top of tank - Deep burial and vehicle traffic tanks are available upon request. Specialty conformations may be possible



Tank markings observed;  
Inlet & outlet.  
Marked on tank top - Inlet end

NPCP  
2017 HOLDING 4500  
B.D. 1 METRE  
WC 4405  
NON-SULPHATE  
AGINP

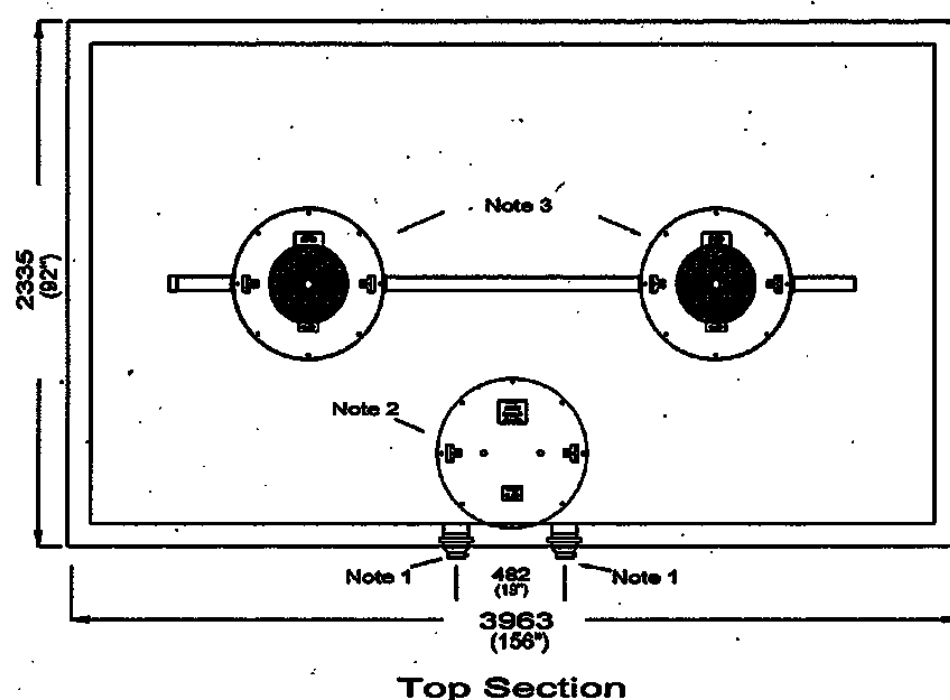
### MODEL 4500L BIOFILTER TANK

## NEWMARKET PRE-CAST CONCRETE PRODUCTS LTD.

Telephone: 905-852-6111 ; Toll Free 1-800-263-1297

## Model 9000 (2000 GAL) Holding Tank - 1 Piece Unit

Working Capacity 3500 - 4500 Litres Per Day

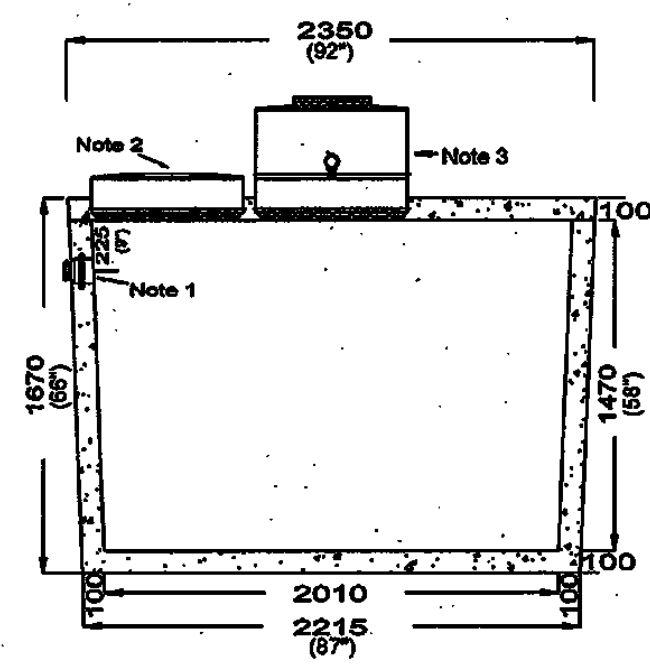
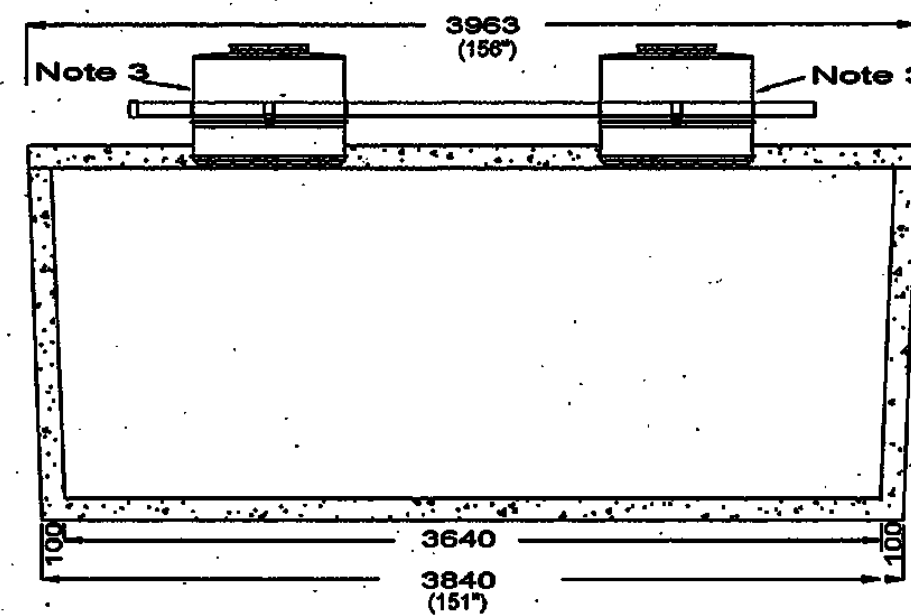


- This tank design is a one piece unit. Top is sealed with a fibrous mastic sealant
- Tanks are cast with 35 MPA strength concrete at 7 days with 5-7% air
- Steel reinforced with 4-10M in the long direction, 5-10M in the short direction in the base and in the walls 4-10M horizontal with verticals matching the base
- 1.5 Kg. structural fibre added to concrete. ASTM C 1118
- Lid has 10m Pre-manufactured welded wire
- Reber Cover 25mm
- Tanks conform to National Standards of Canada CAN/CSA B66-16
- Non-sulphate resistant concrete
- Standard (3) 100mm Inlets and 1 outlet fitted with flexible rubber connections

Bare Base Weight.....6005 Kg (13,239 Lbs)  
Lid Weight.....2295 Kg (5059 Lbs)  
Total Tank Weight.....8300 Kg (18,298 Lbs)

- Notes
- Two cast in 50mm Outlets for Recirculation Line and Disposal Line
  - Cast in Place 610mm ID Polylok Riser with Insulated Lid Secured with Hex-Head Stainless Steel Fasteners extending 100mm Above Concrete
  - Cast in place 610mm ID Polylok Riser with Insulated Lid Secured with Hex-Head Stainless Steel Fasteners extending 400mm Above Concrete

Designed for up to one metre burial over top of tank - Deep burial and vehicle traffic tanks are available upon request. Specialty conformations may be possible



Tank Markings Observed:  
Inlet & Outlet is Marked.  
Tank is marked on tank lid - Inlet End

NPCP  
2017 HOLDING 9000  
B.D. 1 METRE  
WC 4422  
NON-SULPHATE  
AGINP

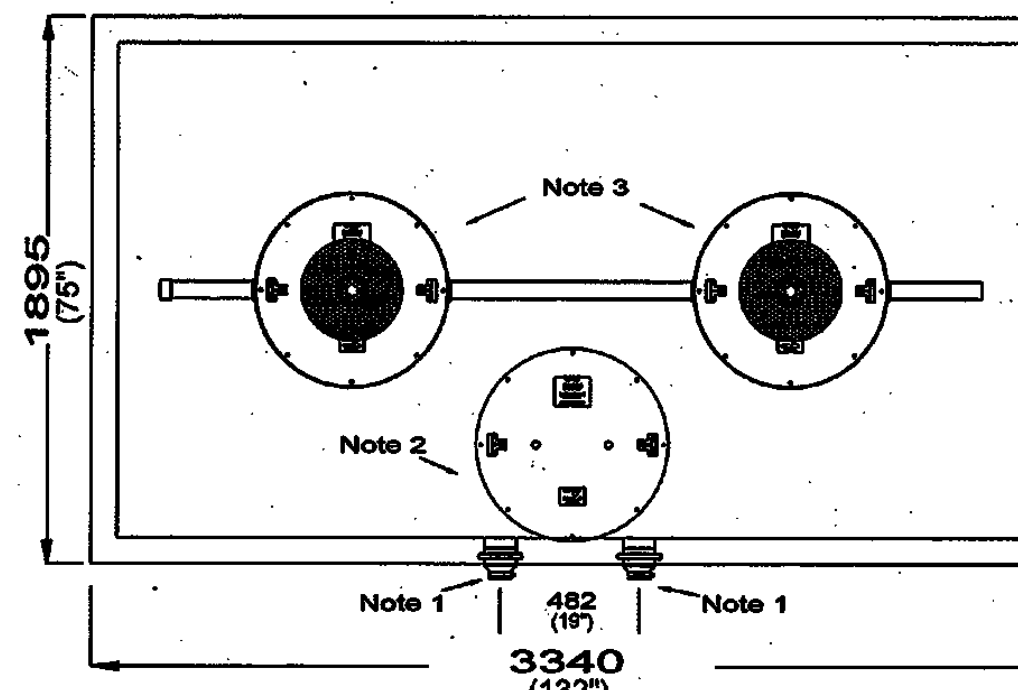
### MODEL 9000L BIOFILTER TANK

## NEWMARKET PRE-CAST CONCRETE PRODUCTS LTD.

Telephone: 905-852-6111 ; Toll Free 1-800-263-1297

## Model 5900 (1300 GAL) Holding Tank - 1 Piece Unit

Working Capacity 2000 - 3000 Litres Per Day

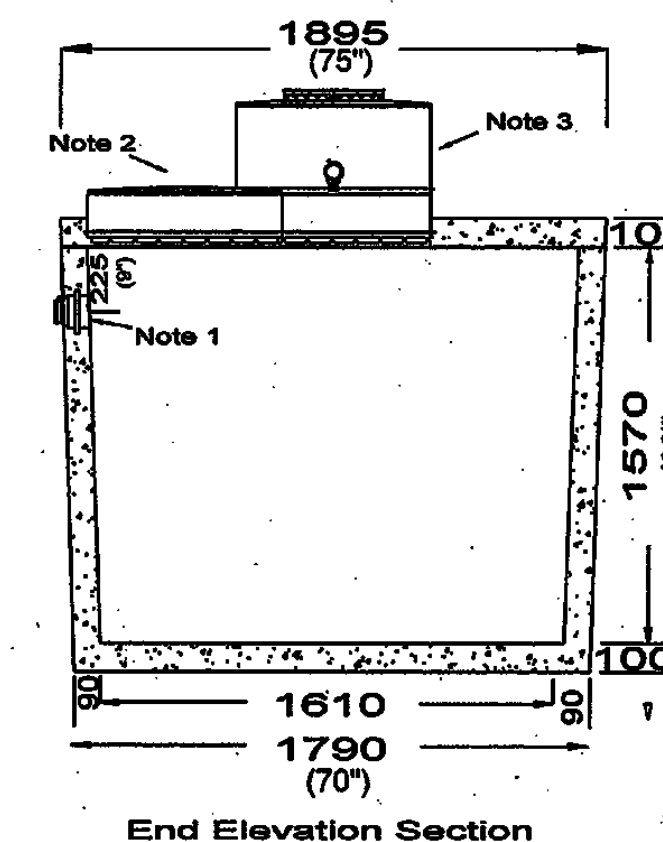
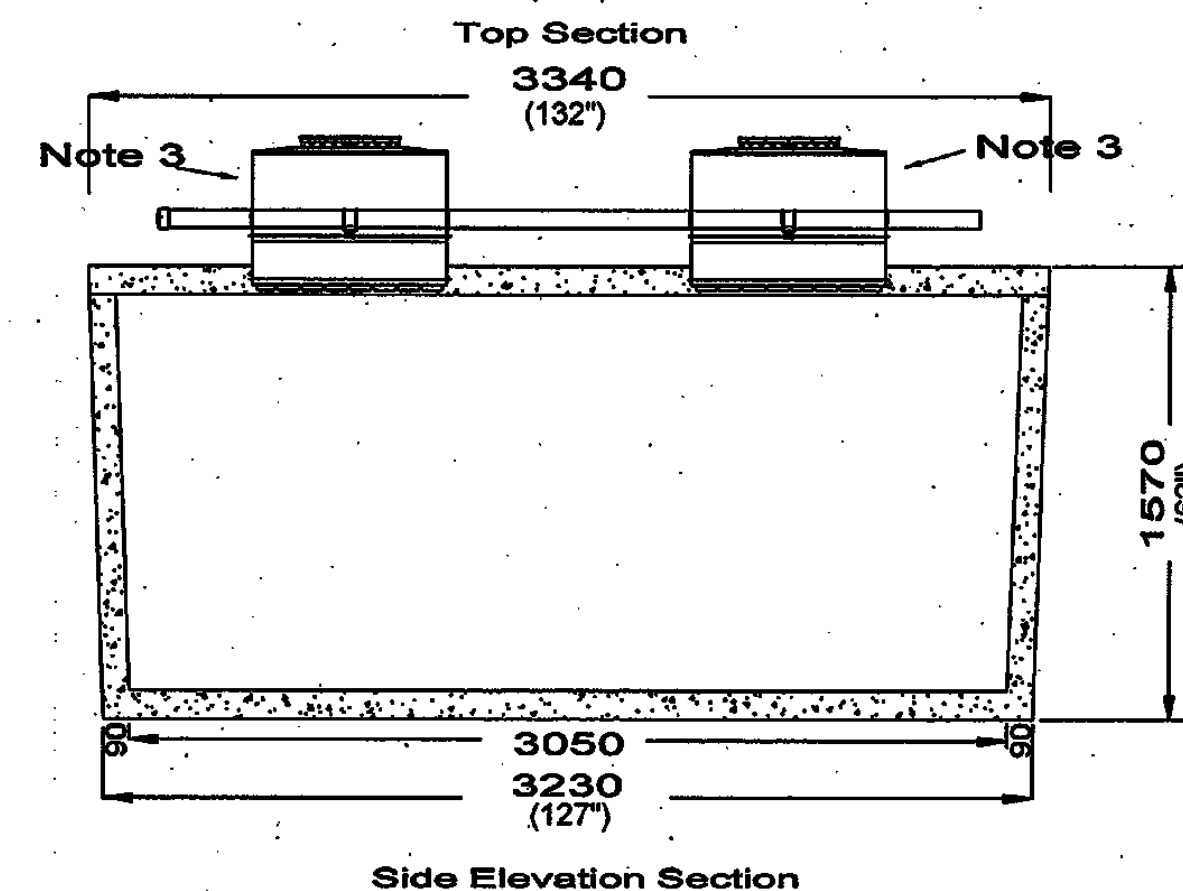


- This tank design is a one piece unit. Top is sealed with a fibrous mastic sealant
- Tanks are cast with 35 MPA strength concrete at 7 days with 5-7% air
- 3.0 Kg. structural fibre added to concrete. ASTM C 1118
- Lid has 10m Pre-manufactured welded wire
- Reber Cover 25mm
- Tanks conform to National Standards of Canada CAN/CSA B66-16
- Non-sulphate resistant concrete
- Standard 50mm Inlet through either side of the Manifold Through Risers and (2) 50m Outlets

Bare Base Weight.....4230 Kg (9,328 Lbs)  
Lid Weight.....1550 Kg (3,417 Lbs)  
Total Tank Weight.....5780 Kg (12,743 Lbs)

- Notes
- Two cast in 50mm Outlets for Recirculation Line and Disposal Line
  - Cast in Place 610mm ID Polylok Riser with Insulated Lid Secured with Hex-Head Stainless Steel Fasteners extending 100mm Above Concrete
  - Cast in place 610mm ID Polylok Riser with Insulated Carbon Vented Lid Secured with Hex-Head Stainless Steel Fasteners extending 400mm above concrete

Designed for up to one metre burial over top of tank - Deep burial and vehicle traffic tanks are available upon request. Specialty conformations may be possible



Tank Markings Observed:  
Inlet & Outlet is Marked.  
Tank is marked on tank lid - Inlet End

NPCP  
2017 HOLDING 5900  
B.D. 1 METRE  
WC 6051  
NON-SULPHATE  
AGINP

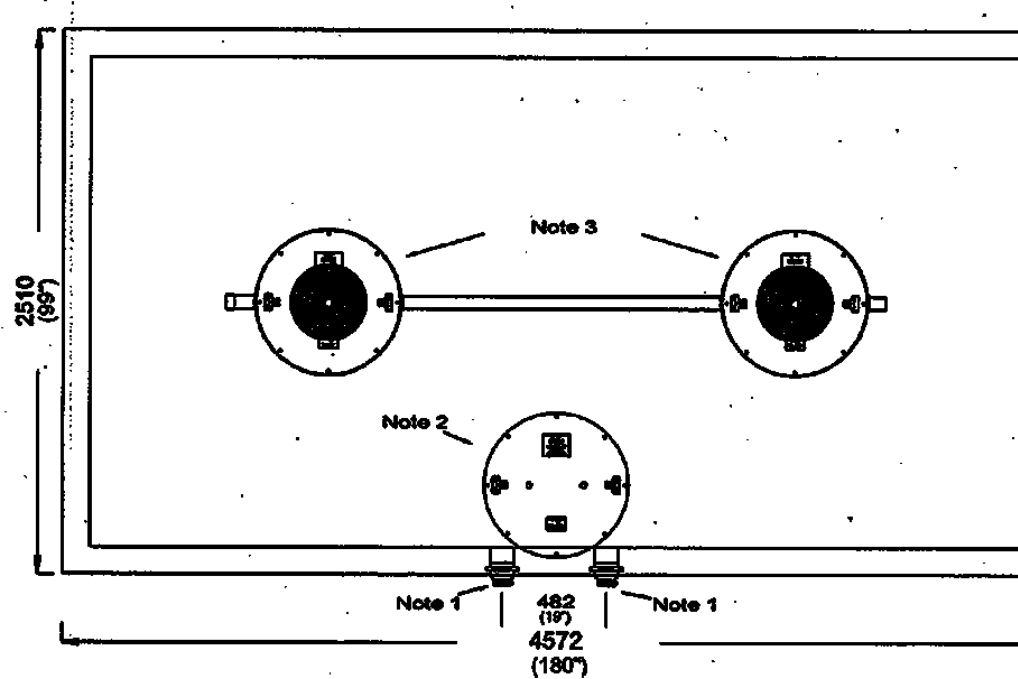
### MODEL 5900L BIOFILTER TANK

## NEWMARKET PRE-CAST CONCRETE PRODUCTS LTD.

Telephone: 905-852-6111 ; Toll Free 1-800-263-1297

## Model 13500 (3000 GAL) Biofilter Tank - 2 Piece Unit

Working Capacity 5000 - 7500 Litres Per Day

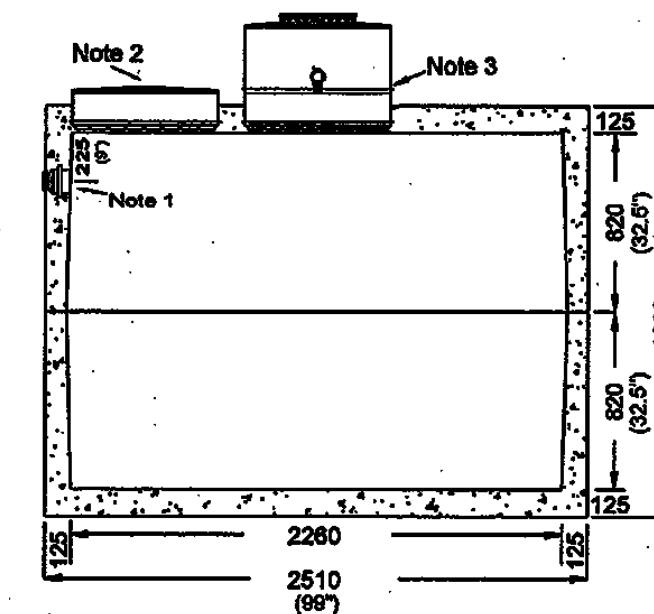
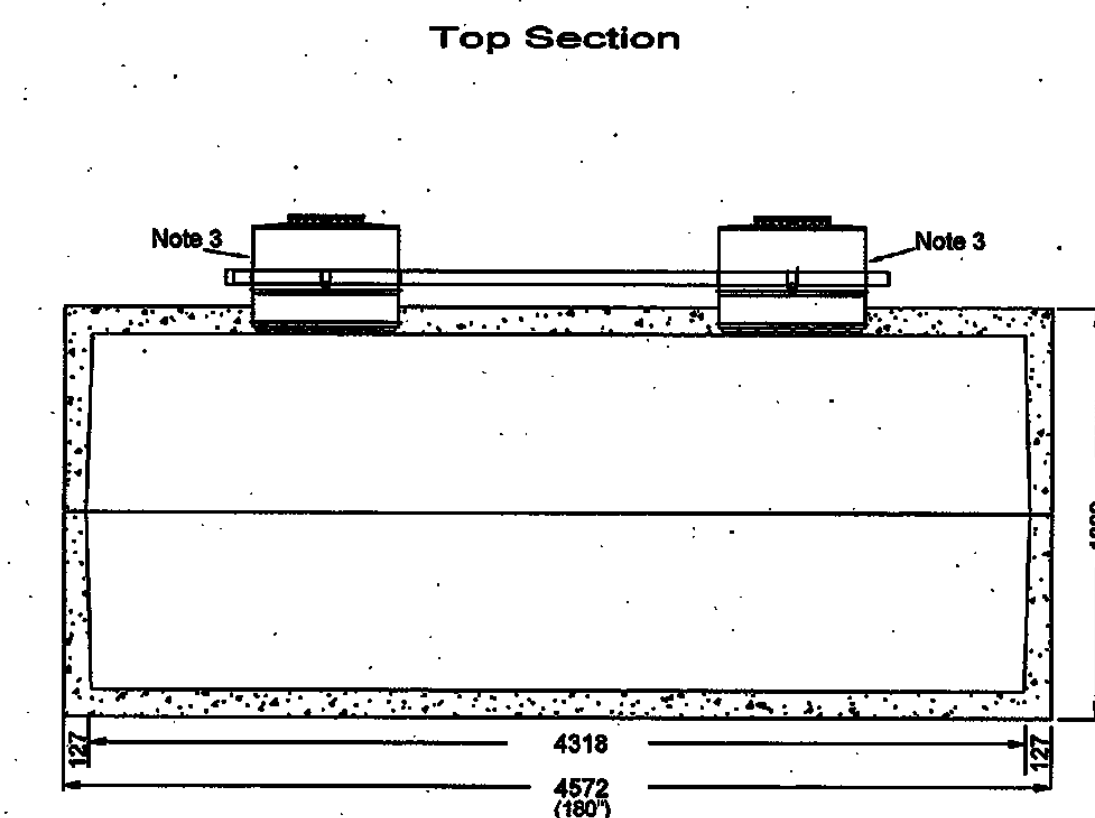


- This tank design is installed in multiple units
- Each unit is tongue and groove design and is sealed with fibrous mastic sealant
- Tanks are cast with 35 MPA strength concrete at 7 days with 5-7% air
- Each piece is steel reinforced with 6-10m in the long direction, 12-10M in the short direction in the base/lid and in the walls 3-10M horizontal with verticals matching the base/lid
- Tanks conform to National Standards of Canada CAN/CSA B66-16
- Non-sulphate resistant concrete
- Standard 50mm Inlet through either side

Top Half Weight.....6935 Kg (15,289 Lbs)  
Bottom Half Weight.....6500 Kg (14,330 Lbs)  
Total Tank Weight.....13435 Kg (29,619 Lbs)

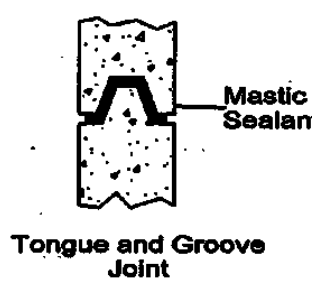
- Notes
- Two cast in 50mm Outlets for Recirculation Line and Disposal Line
  - Cast in place 610mm ID Polylok Riser with Insulated Lid Secured with Hex-Head Stainless Steel Fasteners, extending 100mm Above Concrete
  - Cast in place 610mm ID Polylok Riser with Insulated Lid Secured with Hex-Head Stainless Steel Fasteners, extending 400mm Above Concrete

Designed for up to one metre burial over top of tank - Deep Burial and vehicle traffic tanks are available upon request. Specialty conformations may be possible



Tank Markings Observed:  
Inlet & Outlet is Marked.  
Tank is marked on tank lid - Inlet End

NPCP  
2017 HOLDING 13500  
B.D. 1 METRE  
WC 1422  
NON-SULPHATE  
AGINP



### MODEL 13500L BIOFILTER TANK

Canada



Parks Canada

Rouge National Urban Park

Parcs Canada

Parc Urbain National de la Rouge

NOTE:

THE EXPRESSION "DEEP INSTALLATION TANK" ON THE SITE PLANS REFERS TO TANKS DESIGNED FOR UP TO TWO METRE BURIAL DEPTH.

05.30.18	ISSUED FOR TENDER	E.C.	J.H.	
04.25.18	ISSUED FOR 90% REVIEW	E.C.	J.H.	
No.	Date	Description	Drawn by Dessiné par	Approved Approuvé

Revision / Revision

A	Detail number	A Numéro de détail
B	Sheet number	B Numéro de la feuille

Linear dimensions in millimetres	Dimensions linéaires en millimètres
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Consultant's Name  
Nom de l'expert-conseil

Eng. Stamp  
Sceau de l'ingénieur



Project title/Titre du projet

## ROUGE NATIONAL URBAN PARK SEPTIC SYSTEM REPLACEMENTS

Drawing title/Titre du dessin

## BIOFILTER TANK DETAILS

Designed by/Concept par J. HEBERT	Date
Drawn by/Dessiné par E.CALBERRY	Date
Checked by/Vérifié par J. HEBERT	Date
Project No./N° du projet 163401449	Scale/Echelle AS INDICATED
Drawing Set No./N° de série du dessin	Sheet No./ N° de la feuille D-06







**Digester Tube Size 15" Diameter 43' Long**



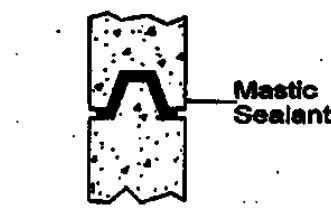
- Top Half Weight.....6935 Kg (15,289 Lbs)  
Bottom Half Weight.....6500 Kg (14,330 Lbs)  
Total Tank Weight.....13435 Kg (29,619 Lbs)

1. Threaded Adapter Cast-in and Roth Hanging Pump Vault Provided By Waterloo Biofilter Systems
2. Water Storage Capacity to underside of top..... 15,744 Litrs. (3463 gal.)
3. Cast in place 610mm ID plastic riser with plastic lid secured with stainless steel fasteners, extending 400mm above concrete
4. Tubing Capacity of a Minimum 1255L, Must End in first 1/3 of Tank

**Designed for up to one metre burial over top of tank - Deep Burial and vehicle traffic tanks are available upon request. Specialty conformations may be possible**

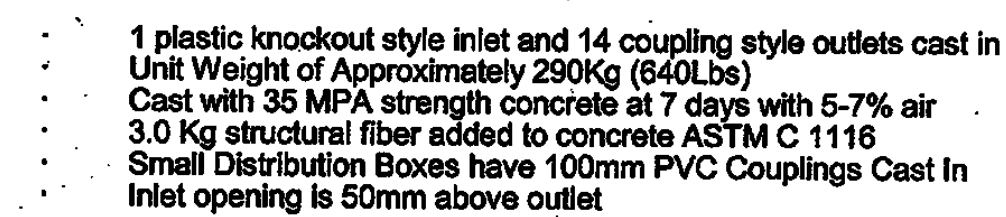


**Tank Markings Observed:**  
**Inlet & Outlet is Marked.**  
**Tank is marked on tank lid - Inlet End**

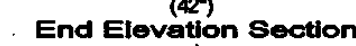


### Tongue and Groove Joint

**2 Piece Unit, Lid & Base**



(42)  
Side Elevation Section



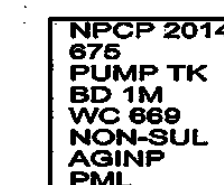
- Inlet fitted with a 100mm clamped rubber fitting.
- Outlet fitted with a 50mm clamped rubber fitting.
- 3kg/m cube structural fiber added to concrete
- Tanks conform to National Standards of Canada CAN/CSA B66-10
- Non sulphate resistant concrete.

**Tank Weight.....1125 Kg (2480 lb)**

- Notes: 1. Cast in place 610mm ID plastic riser with plastic lid extending 200mm above top of tank.  
2. 75mm diameter PVC pipe cast in to facilitate pump installation.

Designed for up to one metre burial over top of tank - away from vehicle traffic.  
Vehicle Traffic and up to two metre burial tanks are available upon request.

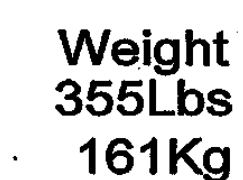
Tank markings observed:  
Inlet & outlet  
Marked on tank top - inlet end



Legend  
 10 m Rebar



8 Outlets 1 Inlet



Distribution boxes are cast with 35 MPA strength concrete at 7 days with 5 - 7% air. Fiber reinforced.  
Distribution box has Plastic Knockouts cast in to accommodate 3" & 4" PVC Pipe  
Inlet opening is 50mm above outlets.

Parc Urbain National  
de la Rouge

THE EXPRESSION "DEEP INSTALLATION TANK" ON THE SITE PLANS REFERS TO TANKS DESIGNED FOR UP TO TWO METRE BURIAL DEPTH.

	05.30.18	ISSUED FOR TENDER	E.C.	J.H.
	04.25.18	ISSUED FOR 90% REVIEW	E.C.	J.H.
No.	Date	Description	Drawn by Dessine par	Approved Approuve

	Detail number	A Numéro de détail
	Sheet number	B Numéro de la feuille
Linear dimensions in millimetres		Dimensions linéaires en millimètres

Consultant's Name Nom de l'expert-conseil	
--	--



1331-400, Clyde Avenue  
Ottawa (Ontario) K2C 3G4  
Telephone : 613.722.4420  
Fax : 613.722.2799

Eng. Stamp  
Sceau de l'ingénieur

Project title/Titre du projet

## ROUGE NATIONAL URBAN PARK SEPTIC SYSTEM REPLACEMENTS

Drawing title/Titre du dessin

ANAEROBIC DIGESTER TANK  
PUMP CHAMBER  
DISTRIBUTION BOX  
DETAILS

Designed by/Concept par		Date
J. HEBERT		
Drawn by/Dessiné par		Date
E.CALBERRY		
Checked by/Vérifié par		Date
J. HEBERT		
Project No./N° du projet	Scale/Echelle	Sheet No./ N° de la feuille
163401449	AS INDICATED	
Drawing Set No./N° de série du dessin		
		D 08

D-08



GENERAL REQUIREMENTS

1. REGULATIONS

1.1. COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF ALL APPLICABLE CODES, THE REQUIREMENTS OF FEDERAL, PROVINCIAL AND MUNICIPAL CODES, LOCAL BY-LAWS, THE APPLICABLE STANDARDS OF THE UNDERWRITERS' ASSOCIATION AND ALL AUTHORITIES HAVING JURISDICTION. ALSO, COMPLY WITH THE STANDARDS FOR THE BUILDING(S) IN WHICH THE WORK IS TO TAKE PLACE.

1.2. THE OTHER CONTRACT DRAWINGS (ALSO REFERRED HEREIN AS "OTHER CONSULTANT DRAWINGS") AND SPECIFICATIONS SHALL BE READ IN CONJUNCTION WITH AND FORM PART OF THIS CONTRACT. THE "OTHER CONSULTANT" REFERRED TO IN THIS CONTRACT SHALL MEAN THE CIVIL ENGINEER.

1.3. ELECTRICAL DRAWINGS SHALL NOT BE SCALED FOR MEASUREMENTS. EQUIPMENT DIMENSIONS OR DIMENSIONED LOCATIONS, CONDUIT ROUTING SHOWN ON DRAWINGS ARE SHOWN FOR DIAGRAMMATICAL PURPOSES ONLY. CONTRACTOR TO VISIT EACH SITE AND DETERMINE BEST POSSIBLE ROUTING. REFER TO THE OTHER CONSULTANT DRAWINGS FOR DIMENSIONS AND CONFIRM ALL MEASUREMENTS ON SITE WITH THE OTHER CONSULTANT. CONTRACTOR IS TO MAKE ARRANGEMENT TO GET A COPY OF ALL OTHER CONSULTANT DRAWINGS AFFECTING ELECTRICAL WORK. THE ELECTRICAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE OTHER CONSULTANT DRAWINGS.

1.4. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION SCHEDULE AND ALL SPECIFIED INTERIM SCHEDULES. CONTRACTOR MUST COMPLY WITH THE GENERAL CONTRACTOR'S CONSTRUCTION SCHEDULE AND SPECIFIED INTERIM SCHEDULES.

1.5. DAMAGE BY THIS CONTRACTOR TO ANY SYSTEM OCCURRING DURING EXECUTION OF THE WORK SHALL BE RECTIFIED AT THE CONTRACTOR'S EXPENSE.

1.6. PARKS CANADA RENTS THE RESIDENCES. KEEP TENANTS INFORMED OF THE WORK IN PROGRESS. THE EXISTING DWELLING UNIT/BUILDING MUST BE KEPT IN OPERATION AT ALL TIMES. ASSUME FULL RESPONSIBILITY FOR ANY DISRUPTION TO EXISTING SERVICES. ARRANGE WORK IN SUCH A MANNER THAT INTERRUPTIONS IN SERVICES OCCUR ONLY AT PRE-SCHEDULED TIMES. PARKS CANADA AND CONTRACTOR ARE TO ADVISE TENANTS OF PRE-SCHEDULE SERVICE INTERRUPTIONS.

1.7. MAINTAIN AT THE JOB SITE, AT ALL TIMES, QUALIFIED PERSONNEL AND SUPPORTING STAFF, WITH PROVEN EXPERIENCE IN SUPERVISION, TESTING AND ADJUSTING PROJECTS OF COMPATIBLE NATURE AND COMPLEXITY.

2. DEFINITIONS:

2.1. ALL ABBREVIATIONS IN DRAWINGS ARE AS FOLLOWS:

TYP = TYPICAL  
JB = JUNCTION BOX  
WP = WEATHER PROOF (NEMA 3R RATED FOR OUTDOOR USE)  
GFI = GROUND FAULT CIRCUIT INTERRUPTER  
FLA = FULL LOAD AMPS  
PH = PHASE  
P = POLE  
W = WIRE

3. SCOPE OF WORK AND INTENT

3.1. IT IS THE INTENT OF THIS SPECIFICATION AND DRAWINGS TO PROVIDE FOR A COMPLETE AND FULLY OPERATING SYSTEM IN COMPLETE ACCORD WITH ALL APPLICABLE CODES. THESE DOCUMENTS MAY NOT SHOW OR DESCRIBE EACH AND EVERY ITEM REQUIRED FOR THE COMPLETE INSTALLATION; THEREFORE, PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES TO COMPLETE THE WORK OF THE ELECTRICAL DIVISION AS FURTHER SPECIFIED AND AS SHOWN ON THE DRAWINGS SUCH THAT THE ELECTRICAL SYSTEM PERFORMS AS INTENDED.

3.2. SHOULD ANY DISCREPANCY APPEAR BETWEEN ANY PARTS OF THE SPECIFICATIONS AND/OR THE DRAWINGS TO CAUSE DOUBT AS TO THE TRUE MEANING AND INTENT OF THE DRAWINGS AND SPECIFICATIONS, A RULING SHALL BE OBTAINED FROM THE ENGINEER'S REPRESENTATIVE BEFORE SUBMITTING THE TENDER. IF THIS IS NOT DONE THE FOLLOWING WILL BE ASSUMED: WHERE A DISCREPANCY OCCURS IN THE DRAWINGS THE MORE STRINGENT ALTERNATIVE WILL BE DEEMED AS INCLUDED IN THE CONTRACT. WHERE A DISCREPANCY OCCURS IN THE SPECIFICATIONS THE MORE EXPENSIVE ALTERNATIVE WILL BE DEEMED AS INCLUDED IN THE CONTRACT.

4. PERMITS, CERTIFICATES, FEES INSPECTIONS

4.1. APPLY FOR, OBTAIN, AND PAY FOR ALL PERMITS, LICENSES, INSPECTIONS, EXAMINATIONS AND FEES REQUIRED. THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE OWNER WITH CERTIFICATES THAT THE WORK HAS BEEN COMPLETED IN ACCORDANCE WITH ALL CODES, BUILDING STANDARDS, AND ALL AUTHORITIES HAVING JURISDICTION.

4.2. ARRANGE FOR INSPECTION OF ALL WORK BY THE AUTHORITIES HAVING JURISDICTION OVER THE WORK. ON COMPLETION OF THE PROJECT, PRESENT TO THE CONSULTANT THE FINAL UNCONDITIONAL CERTIFICATE OF APPROVAL FROM THE INSPECTING AUTHORITIES.

4.3. REQUEST IN WRITING FOR A COMPLETED ROUGH-IN AND FINAL INSPECTION OF THE ELECTRICAL SYSTEMS. WHEN THE FINAL INSPECTION REQUEST IS MADE, CONTRACTOR IS TO ENSURE THAT ALL DEFICIENCIES ARE COMPLETE; THAT SYSTEMS ARE READY FOR OPERATION; THAT EQUIPMENT HAS BEEN COMMISSIONED; ALL TAGS AND NAMEPLATES ARE INSTALLED; DRAWINGS AND CHARTS ARE COMPLETE; ALL FIXTURES AND EQUIPMENT HAVE BEEN CLEANED; SPARE PARTS HAVE BEEN PROVIDED; CONTROL SYSTEMS OPERATIONAL AND THE PARKS CANADA STAFF (I.E. LANDLORD'S STAFF) INSTRUCTED IN ALL PHASES OF THE SYSTEM OPERATION.

5. SUBMITTALS & SHOP DRAWINGS

5.1. BEFORE STARTING ANY WORK, SUBMIT THE REQUIRED NUMBER OF COPIES OF SHOP DRAWINGS AND SPECIFICATIONS TO THE ELECTRICAL CONSULTANTS FOR THEIR REVIEW AND COMMENTS. COMPLY WITH ANY CHANGES REQUESTED AS PART OF THE CONTRACT, BUT NOTIFY THE CONSULTANT IMMEDIATELY OF SUCH CHANGES, PREPARE AND FURNISH ANY ADDITIONAL DRAWINGS, DETAILS OR INFORMATION AS MAY BE REQUIRED.

5.2. SUBMIT A PDF ELECTRONIC COPY AS PERMITTED BY THE ENGINEER (REFER TO SECTION 013300 - SUBMITTAL PROCEDURES), UNLESS ADDITIONAL COPIES ARE IDENTIFIED IN THE CONTRACT DOCUMENTS FOR ALL MAJOR EQUIPMENT (PANEL BOARDS, DISCONNECTIONS, ETC.). SHOP DRAWINGS SHALL BE REVIEWED AND STAMPED FOR ACCEPTANCE BY THE APPROPRIATE TRADE PRIOR TO SUBMISSION TO THE CONSULTANT. EQUIPMENT SHALL NOT BE ORDERED OR INSTALLED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED BY THE ELECTRICAL CONSULTANT. AFTER CONSULTANT'S FINAL REVIEW, CONTRACTOR IS TO DISTRIBUTE PDF VERSION AND PRINTED COPIES TO PARKS CANADA, IN QUANTITIES AS NOTED IN SECTION 013300 - SUBMITTAL.

6. WARRANTY

6.1. ONCE THE WORK IS COMPLETED, PROVIDE THE OWNER WITH A WRITTEN WARRANTY FOR ONE YEAR. THE WARRANTY SHALL COVER THE WORK AND MATERIALS. REPAIR AND REPLACE ANY DEFECTS IN MATERIAL OR WORKMANSHIP AT NO EXTRA COST TO THE OWNER.

7. PRODUCTS AND MATERIALS

7.1. ALL EQUIPMENT AND MATERIALS SHALL BE C.S.A. APPROVED.

7.2. NO ALTERNATES TO THE EQUIPMENT SPECIFIED EQUIPMENT ARE TO BE INCLUDED IN THE TENDER PRICE, UNLESS OTHERWISE ADVISED.

7.3. ALL EQUIPMENT MATERIAL, DEVICES AND WIRING SHALL CONFORM TO THE CANADIAN ELECTRICAL SAFETY CODE OR CODE HAVING JURISDICTION FOR THE PURPOSE FOR WHICH THEY ARE TO BE USED AND SHALL BEAR THE APPROVAL OF THE CSA AND/OR ULC OR HAVE SPECIAL APPROVAL OF THE INSPECTION AUTHORITY.

7.4. ALL MATERIAL AND EQUIPMENT SHALL BE NEW. WHERE MANUFACTURER IS NOT SPECIFIED, MATERIAL AND EQUIPMENT SHALL BE OF HIGH COMMERCIAL QUALITY AND CONSISTENT WITH BASE BUILDING STANDARDS.

8. TEMPORARY SERVICE

8.1. PROVIDE TEMPORARY LIGHTING AND ELECTRICAL SERVICES FOR THE WORK OF THIS TRADE AND OTHER TRADES FOR THE DURATION OF THE PROJECT OR AS DIRECTED BY THE GENERAL CONTRACTOR.

9. EXAMINATION AND PREPARATION

9.1. INCLUDE IN THE TENDER THE TOTAL SCOPE OF WORK WHICH IS TO INCLUDE BUT NOT LIMITED TO CUTTING, PATCHING, REMOVING, RE-ROUTING OF EXISTING ELECTRICAL EQUIPMENT AND WIRING, REMOVING AND RELOCATING AND MODIFICATION OF LUMINAIRES, AS REQUIRED TO SUCCESSFULLY EXECUTE ALL WORK DESCRIBED. PRIOR TO SUBMITTING PRICE, THE CONTRACTOR IS TO REVIEW ANY DISCREPANCIES WITH THE CONSULTANT AND REPORT ANY AMBIGUITIES, OMISSIONS, CONFLICTS OR DEPARTURES FROM BUILDING CODES OR BY-LAWS. NO CLAIMS FOR EXTRA PAYMENT WILL BE CONSIDERED BECAUSE OF FAILURE TO FULFILL THIS CONDITION.

9.2. CONTRACTOR TO REFER TO SECTION 028200.02 - ASBESTOS ABATEMENT - INTERMEDIATE PRECAUTIONS FOR PROCEDURES CONCERNING PRICING AND EXECUTING ASBESTOS CONTAINING MATERIAL REMOVAL AT SITES IDENTIFIED BY PARKS CANADA.

10. CLEANING

10.1. AT THE TIME OF FINAL CLEANING, CLEAN ALL ELECTRICAL EQUIPMENT AND SURFACES THAT HAVE BEEN EXPOSED TO CONSTRUCTION DUST AND DIRT. REMOVE DEBRIS AND EXCESS MATERIALS IN AREAS EXPOSED TO CONSTRUCTION.

10.2. ALL PENETRATIONS THROUGH FLOORS AND FIRE RATED WALLS SHALL BE PACKED WITH AN APPROVED FIRE MATERIAL INSULATION AND SHALL BE SEALED BY ELECTRICAL CONTRACTOR.

11. CUTTING AND PATCHING

11.1. ALL CUTTING AND PATCHING OF MASONRY/CONCRETE FLOORS, WALLS, AND ROOF FOR ELECTRICAL SERVICES SHALL BE BY THIS DIVISION. OBTAIN APPROVAL FROM PARKS CANADA AND/OR STRUCTURAL ENGINEER'S REPRESENTATIVE BEFORE CUTTING ANY STRUCTURAL WALLS OR FLOORS. CUTTING AND DRILLING SHALL ONLY BE AT TIMES ALLOWED BY PARKS CANADA. CHECK AND VERIFY THE LOCATION OF EXISTING MECHANICAL AND ELECTRICAL SERVICES IN WALLS AND BELOW THE FLOOR SLAB IN ALL AREAS REQUIRING CORE DRILLING AND CUTTING. PROTECT ALL TENANT AREAS WHERE CORE DRILLING OCCURS. PROVIDE X-RAY STUDY ON ALL AREAS PRIOR TO CORING, DRILLING OR CUTTING WHERE REQUIRED BY PARKS CANADA AND CONFIRM LAYOUT WITH STRUCTURAL ENGINEERING PRIOR TO COMPLETING WORK.

11.2. WHEN INSTALLING SLEEVES IN EXISTING STRUCTURES, SLEEVES SHALL BE PROVIDED AS SPECIFIED COMPLETE WITH A COMBINATION PUDDLE/ANCHOR FLANGE BOLTED TO THE FLOOR. SEAL WATERTIGHT BETWEEN THE FLANGE AND THE FLOOR.

11.3. PROVIDE ALL CLEANUP, LIFTING, STORAGE, CUTTING, PATCHING AND FLASHING AS REQUIRED. REMOVE ALL EXCESS DEBRIS, MATERIAL AND EQUIPMENT FROM SITE.

11.4. PATCH AND SEAL ALL OPENINGS IN FLOORS, WALLS, AND PARTITIONS TO MATCH THE SURROUNDING FINISHES. IF FLOORS, WALLS, OR PARTITIONS ARE FIRE RATED, PATCH AND SEAL PENETRATIONS WITH FIRE RESISTANT INSULATION AND APPROVED FIRE STOP SYSTEMS.

12. FIRESTOPPING

12.1. PROVIDE FIREPROOF SEALS IN ACCORDANCE WITH THE LOCAL CODES AND STANDARDS AND THE NATIONAL BUILDING CODE (OF CANADA) (NBC).

12.2. DO NOT USE CONCRETE FOR FIRE STOPPING ON CONDUIT. CONTRACTORS, WHO USE THIS METHOD, WILL BE REQUIRED TO REPLACE THE CONCRETE WITH APPROVED FIRE STOP AND REPLACE AND TEST CABLES AFFECTED.

13. PLYWOOD BACKBOARDS, EQUIPMENT MOUNTING, OPEN AIR STRUCTURE & CONCRETE FORMS

13.1. PROVIDE FIRE RATED PLYWOOD BACKBOARDS AND MOUNT WHERE ALL WALL MOUNTED ELECTRICAL EQUIPMENT IS SHOWN. PLYWOOD TO BE 21mm (13/16"), BE UREA-FORMALDEHYDE (UF) FREE AND BE EITHER FOREST STEWARDSHIP COUNCIL (FSC), SUSTAINABLE FORESTRY INITIATIVE (SFI) OR CSA Z809-08 CERTIFIED. PLYWOOD TO BE EITHER FIRE RATED WITH THE APPROPRIATE LABEL DISPLAYED ONCE INSTALLED OR COATED WITH FIRE RETARDANT PAINT.

13.2. SURFACE MOUNTED ELECTRICAL PANELS ARE TO BE INSTALLED ON UNISTRUT STAND-OFFS SUITABLE FOR ENVIRONMENT. PROVIDE EXTERIOR RATED UNISTRUT FOR EXTERIOR ENVIRONMENT.

13.3. PROVIDE EXTERIOR UNISTRUT OPEN-AIR STRUCTURE SUITABLE FOR MOUNTING OF EXTERIOR EQUIPMENT COMPLETE WITH CONCRETE BASE FORM (I.E. SONO-TUBE) FOR SUPPORT OF OPEN AIR STRUCTURE. CONCRETE MIX SHALL BE 35 MPA @ 28 DAYS, GRANULAR MATERIAL MAXIMUM DIAMETER = 20 MM, SLUMP = 80 MM +/- 30 MM, ENTRAINED AIR = 5 TO 8%.

14. COORDINATION WITH CIVIL DIVISION

14.1. PRIOR TO INSTALLATION OF CIVIL BRANCH CIRCUITS, CO-ORDINATE WITH CIVIL CONTRACTOR TO ENSURE SITE DELIVERED EQUIPMENT MATCHES SPECIFIED SERVICE. WHERE DISCREPANCY EXISTS, CONTACT THE ELECTRICAL CONSULTANT FOR DIRECTION.

14.2. SHOULD THE CIVIL CONTRACTOR CHANGE ANY OF THE PUMP OR EQUIPMENT SIZES FROM THOSE IDENTIFIED ON THE SCHEDULES AND DRAWINGS AT ANY STAGE OF THE PROJECT TO AIDE THEIR INSTALLATION, THE CIVIL CONTRACTOR WILL INCUR ALL EXTRA ELECTRICAL COSTS TO REVISE THE ELECTRICAL FEEDERS, BREAKERS, STARTERS AND EQUIPMENT TO SUPPLY POWER TO THE REVISED PIECE OF EQUIPMENT.

14.3. DETERMINE EXACT LOCATION OF PUMPS, CONTROL PANEL OUTDOOR RATED JUNCTION BOXES BASED ON THE CIVIL DRAWINGS TO COORDINATE WITH THE LOCATIONS OF ALL EQUIPMENT TO ENSURE THE REQUIRED CLEARANCES ARE MAINTAINED.

15. DRAWINGS AND INSTALLATION

15.1. NO MODIFICATIONS ARE TO BE MADE TO THE ELECTRICAL DESIGN AS OUTLINED ON THE ISSUED DRAWINGS WITHOUT WRITTEN APPROVAL FROM THE CONSULTANT.

15.2. THE DRAWINGS ARE DIAGRAMMATIC AND INTENDED TO SHOW THE SCOPE OF THE WORK, GENERAL ARRANGEMENT AND LOCATION OF THE EQUIPMENT. THEY ARE NOT INTENDED TO SHOW THE DETAILS OF THE INSTALLATION. OBTAIN ALL DIMENSIONS FROM OTHER CONSULTANT DRAWINGS AND DETAILS. VERIFY EXACT LOCATION AND MOUNTING HEIGHT OF ALL WIRING DEVICES WITH OTHER CONSULTANT PRIOR TO INSTALLATION.

16. SEISMIC REQUIREMENTS

16.1. ALL INSTALLATIONS ARE TO CONFORM TO SEISMIC REQUIREMENTS AS LISTED IN THE NBC. CONTRACTOR IS TO PROVIDE SHOP DRAWINGS FOR SEISMIC INSTALLATIONS PRODUCED BY A LICENSED PROFESSIONAL ENGINEER. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR IS TO PROVIDE A LETTER OF CONFORMANCE FOR THE SEISMIC INSTALLATIONS SEALED BY A LICENSED PROFESSIONAL ENGINEER STATING THAT ALL ELECTRICAL INSTALLATIONS ARE IN CONFORMANCE WITH SEISMIC REQUIREMENTS AS LISTED IN NBC.

17. INSTALLATION, INTERFERENCE AND SETTING DRAWINGS

17.1. EXAMINE THE OTHER CONSULTANT DRAWINGS TO ENSURE THAT THE WORK OF THIS DIVISION CAN BE SUCCESSFULLY COMPLETED. REPORT TO THE CONSULTANT ANY DISCREPANCIES BETWEEN DRAWINGS AND/OR SPECIFICATIONS AND OTHER CONSULTANT DRAWINGS, SPECIFICATIONS AND DETAILS PRIOR TO INSTALLATION. REPORT TO THE CONSULTANT ANY OMISSIONS, CONFLICTS OR DEPARTURES FROM BUILDING CODES AND BY-LAWS, PRIOR TO INSTALLATION.

17.2. COORDINATE ELECTRICAL INSTALLATION WORK WITH THE WORK OF OTHER TRADES ON SITE, AND REPORT TO THE OTHER CONSULTANT ANY INTERFERENCE OF OTHER TRADES' WORK THAT MAY AFFECT THE WORK OF THIS DIVISION.

18. AS-BUILT/RECORD DRAWINGS

18.1. AS-BUILT DRAWINGS ARE TO CONSIST OF TWO PRINTED COPIES AND ONE AUTOCAD COPY OF UPDATED DRAWINGS. THE DRAWINGS ARE TO INCLUDE ALL POWER AND LIGHTING CIRCUITS AND INCLUDE ALL CONDUIT RUNS 21mm AND LARGER. IDENTIFY APPROXIMATE LOCATION OF ALL JUNCTION BOXES.

19. OPERATION & MAINTENANCE MANUALS AND CLOSE OUT DOCUMENTS

19.1. PROVIDE TWO (2) SETS OF OPERATIONS AND MAINTENANCE MANUALS' WITH THE FOLLOWING INFORMATION:

1. NAME AND ADDRESS OF LOYAL SUPPLIERS
2. TECHNICAL DATA OF LUMINAIRES AND EQUIPMENT WITH PARTS LIST
3. SHOP DRAWINGS AS REVIEWED BY CONSULTANT
4. ONE YEAR WARRANTY

19.2. PROVIDE THE FOLLOWING AS A MINIMUM WITH NO DEFICIENCIES, WITH SPACE READY FOR INTENDED USE AND ELECTRICAL SYSTEMS INSTALLED IN ACCORDANCE WITH THE CONTRACTOR DOCUMENTS PRIOR TO ENGINEER ISSUING A LETTER OF CONFORMANCE TO ASSIST IN GAINING AN OCCUPANCY PERMIT:

.1 ELECTRICAL SAFETY AUTHORITY CERTIFICATE WITH NO DEFICIENCIES LISTED

SPECIFICATION

20. GENERAL NOTES

20.1. COORDINATE SCHEDULING OF ALL WORK WITH PROJECT MANAGER.

20.2. ANY PROPOSED CHANGES AND/OR MODIFICATIONS DUE TO SITE CONDITIONS MUST RECEIVE APPROVAL FROM THE OTHER CONSULTANTS.

21. IDENTIFICATION

21.1. PROVIDE TYPED CIRCUIT DIRECTORIES SHOWING CONNECTED LOADS TO ALL NEW PANEL BOARDS AND EXISTING PANEL BOARDS WITHOUT DIRECTORIES. EXISTING PANEL BOARD'S DIRECTORIES SHALL BE REPLACED WITH NEW TYPE-WRITTEN DIRECTORIES REFLECTING THE LATEST REVISIONS.

21.2. MAIN BREAKER OF EACH PANEL SHALL BE LABELED "MAIN BREAKER" ON LAMICOID NAME PLATE.

21.3. CONDUIT AND CABLE IDENTIFICATION: COLOR CODE CONDUITS, BOXES AND METALLIC SHEATHED CABLES. CODE WITH PLASTIC TAPE OR PAINT AT POINTS WHERE CONDUIT OR CABLE ENTERS WALL, CEILING, OR FLOOR, AND AT 15m (50'-0") INTERVALS. COLORS: 25mm (1") WIDE PRIME COLOR AND 20mm (3/4") WIDE AUXILIARY COLOR.

CONTROLS  
COLOR  
PURPLE

22. MOUNTING HEIGHTS

22.1. INSTALL ELECTRICAL EQUIPMENT AT THE FOLLOWING HEIGHTS UNLESS INDICATED OTHERWISE. MOUNTING HEIGHT OF EQUIPMENT IS FROM FINISHED FLOOR TO CENTER LINE OF EQUIPMENT UNLESS SPECIFIED OR INDICATED OTHERWISE.

INDOOR PANEL BOARDS TO TOP OF PANEL TO MATCH EXISTING

23. WIRING

23.1. ALL WIRING SHALL BE COPPER UNLESS OTHERWISE NOTED. CONDUCTORS STRANDED FOR 10 AWG AND LARGER, MINIMUM SIZE 12AWG, COPPER.

23.2. PROVIDE A MINIMUM OF ONE BONDING CONDUCTOR FOR EACH THREE UNGROUNDED CONDUCTORS ON ALL CONDUIT AND CABLE RUNS. SIZE BONDING CONDUCTOR TO TABLE 16A OF THE CANADIAN ELECTRICAL SAFETY CODE. PROVIDE SEPARATE BONDING CONDUCTORS FOR EACH GROUND FAULT CIRCUIT INTERRUPTER CIRCUITS. ALL BOND CONDUCTORS TO BE COPPER AND INSULATED WITH A GREEN COLORED INSULATION.

23.3. ALL EQUIPMENT, JUNCTION BOXES, PULL BOXES, LIQUID TIGHT FLEX, ETC. TO BE BONDED TO GROUND THROUGH BONDING CONDUCTORS.

23.4. PROVIDE SEPARATE NEUTRAL CONDUCTOR FOR EACH 120 VOLT CIRCUIT FOR ALL CIRCUITS FEEDING RECEPTACLES AND POWER OUTLETS.

23.5. SPLICE UP TO AND INCLUDING NO. 6 AWG WITH NYLON INSULATED EXPANDABLE SPRING TYPE CONNECTORS. SPLICE LARGER CONDUCTORS USING COMPRESSION TYPE CONNECTORS WRAPPED IN PVC INSULATION RATED AT THE RESPECTIVE VOLTAGE.

23.6. BRANCH CIRCUIT WIRING TO BE UPSIZED AS FOLLOWS TO ADDRESS VOLTAGE DROP WHEN THE ENTIRE LENGTH OF THE CIRCUIT WIRING: EXCEEDS 25m (82') - BRANCH WIRING TO BE A MINIMUM OF NO. 10 AWG, EXCEEDS 40m (131') - BRANCH WIRING TO BE A MINIMUM OF NO. 8 AWG, EXCEEDS 60m (196') - BRANCH WIRING TO BE A MINIMUM OF NO. 6 AWG. VOLTAGE DROP IN ANY CIRCUIT SHALL NOT EXCEED 3%.

23.7. WHEREVER EXTERIOR VENDOR SUPPLIED SMART CONTROL PANELS ARE SHOWN WITH TWO OR MORE CONDUITS EXTENDING TO PUMPS, PROVIDE ADDITIONAL EXTERIOR PULL BOX AS REQUIRED, TO ACCOMMODATE FOR SIZE OF CONDUIT KNOCKOUTS AS SHOWN ON DRAWINGS.

23.8. PROVIDE JUNCTION BOXES SIZED TO SUIT ADJACENT NEW REPLACEMENT PANELS AS REQUIRED TO HOUSE SPLICES, FOR THE EXTENSION OF EXISTING CABLES TO SUIT NEW BREAKER LOCATIONS.

23.9. REFERENCE VENDOR SMART/SIMPLE CONTROL PANEL MANUFACTURER'S INSTRUCTIONS FOR WIRING PRIOR TO ROUGH-IN.

23.10 ARMORED CABLE

TYPE: AC90(BX) - INTERLOCKING TYPE FABRICATED FROM ALUMINUM STRIPS  
TYPE: ACW90 - PVC FLAME RETARDANT JACKET OVER ARMOUR, AS REQUIRED.

MAY ONLY BE USED FOR INDIVIDUAL DROPS FROM SLAB MOUNTED JUNCTION BOX TO RECESSED MOUNTED LIGHT FIXTURES OR WHERE NOTED ON THE DRAWINGS WHERE WIRING IS REQUIRED TO BE INSTALLED WITHIN AN EXISTING WALL. THE MAXIMUM ALLOWABLE DISTANCE OF ARMORED CABLE IS 3m (10'-0"). DO NOT RUN ARMORED CABLE IN EXPOSED AREA OR INTO PANEL BOARDS.

23.1. BUILDING WIRE  
CHEMICALLY CROSS-LINKED THERMOSETTING POLYETHYLENE MATERIAL RATED RW90 OR RWU90 (USED FOR UNDERGROUND INSTALLATIONS), RATED 1000V INSULATION.  
INSTALL ALL WIRING IN CONDUIT UNLESS OTHERWISE NOTED. ALL CONDUCTORS ARE TO BE COLOR CODED. PROVIDE COLOR TAPE AT ALL TERMINATIONS TO IDENTIFY ALL CONDUCTORS IN EACH RUN.

23.2. TECK CABLE  
BONDING CONDUCTOR COPPER. CHEMICALLY CROSS-LINKED THERMOSETTING POLYETHYLENE TYPE RW90, RATED 1000V INSULATION, INNER JACKET: POLYVINYL CHLORIDE MATERIAL. ARMOUR: INTERLOCKING ALUMINUM. OVERALL COVERING: THERMOPLASTIC POLYVINYL CHLORIDE MATERIAL RATED AT A MINIMUM OF FT-4. OUTDOOR RATED.

24. CONDUIT AND CONDUIT FITTINGS

24.1. MINIMUM CONDUIT SIZE FOR LIGHTING AND POWER CIRCUITS SHALL BE 21mm (3/4") UNLESS NOTED OTHERWISE. USE ELECTRICAL METALLIC TUBING (EMT) CONDUIT EXCEPT WHERE SPECIFIED OTHERWISE. RUN PARALLEL OR PERPENDICULAR TO BUILDING LINES. GROUP CONDUITS WHEREVER POSSIBLE ON SUSPENDED OR SURFACE MOUNTED CHANNELS. DO NOT PASS CONDUITS THROUGH STRUCTURAL MEMBERS, EXCEPT AS INDICATED. DO NOT LOCATE CONDUITS LESS THAN 78mm (3") PARALLEL TO STEAM OR HOT WATER LINES WITH MINIMUM OF 25mm (1 IN.) AT CROSSOVERS. CONDUITS MUST NOT BE USED TO SUPPORT OTHER CONDUITS.

24.2. CONDUIT FITTINGS SHALL BE MANUFACTURED FOR USE WITH CONDUIT SPECIFIED. COATING SAME AS CONDUIT. FACTORY "ELLS" WHERE 90 BENDS ARE REQUIRED FOR 27mm (1") AND LARGER CONDUITS WHEN A HYDRAULIC BENDER IS NOT USED. CONNECTORS, COUPLINGS AND STRAPS FOR EMT CONDUITS ARE TO BE SET-SCREW STEEL TYPE. IN A SPRINKLERED ENVIRONMENT, PROVIDE WATERTIGHT FITTINGS.

24.1. NEW CONDUITS AND OTHER NEW SERVICES SHALL BE CAREFULLY ROUTED SO THAT THEY DO NOT INTERFERE WITH ANY EXISTING INSTALLATIONS. ANY SERVICES THAT INTERFERE WITH THE NEW INSTALLATION SHALL BE RELOCATED UNDER THIS CONTRACT AT NO EXTRA COST TO OWNER.

24.3. ALL WIRING SHALL BE IN CONCEALED IN EMT CONDUIT UNLESS OTHERWISE NOTED. SECURE CONDUIT TO UNDERSIDE OF FLOOR SLAB ABOVE.

25. GROUNDING

25.1. PROVIDE SYSTEM GROUNDING TO MEET REQUIREMENTS OF CURRENT CANADIAN ELECTRICAL SAFETY CODE OR CODE HAVING JURISDICTION.

25.2. CONNECT TO THE GROUND LOOP ALL METAL EQUIPMENT ENCLOSURES AS WELL AS ALL OTHER METAL PARTS SUCH AS MECHANICAL PIPES, DUCTS, WASTE LINES, DOOR FRAMES, RAILINGS, GRILLES, FENCES, ETC.

25.3. INSTALL GROUNDING CONNECTIONS TO TYPICAL EQUIPMENT INCLUDED IN, BUT NOT NECESSARILY LIMITED TO, FOLLOWING LIST: FRAMES OF MOTORS, CONTROL PANELS AND DISTRIBUTION PANELS.

25.4. PROTECT EXPOSED GROUNDING/BONDING CONDUCTORS FROM MECHANICAL INJURY. ALL CONNECTIONS TO BE MADE WITH TWO HOLES, LONG BARREL COMPRESSION TYPE FITTINGS AND LUGS.

26. OUTLET BOXES

26.1. SIZE BOXES IN ACCORDANCE WITH CSA C22.1 BASED ON NUMBER AND SIZE OF CONDUCTORS. SQUARE OR LARGER OUTLET BOXES AS REQUIRED FOR SPECIAL DEVICES. WHEREVER POSSIBLE GANG BOXES COMPLETE WITH GANGED COVER PLATES WHERE WIRING DEVICES ARE GROUPED. BLANK COVER PLATES FOR BOXES WITHOUT WIRING DEVICES.

26.3. NON-COMBUSTIBLE ELECTRICAL OUTLET BOXES THAT PENETRATE A FIRE SEPARATION OR A MEMBRANE FORMING PART OF AN ASSEMBLY REQUIRED TO HAVE A FIRE-RESISTANCE RATING. FIRE STOPS NOT REQUIRED PROVIDED, BOXES DO NOT EXCEED: 100cm2 (15.5 inch2) EACH IN AREA, AND AN AGGREGATE AREA OF 650cm2 (100.75 inch2) IN ANY 9.3m2 (100ft2) OF SURFACE AREA, AND THE ANNULAR SPACE BETWEEN THE MEMBRANE AND THE BOX DOES NOT EXCEED 3mm.

27. PLANEL BOARDS

27.1. NEW PANEL BOARDS SHALL BE AS FOLLOWS:

PLANEL BOARDS TO BE ENTRANCE RATED SERVICE PANELS.  
250V BRANCH CIRCUIT PANEL BOARDS TO HAVE MINIMUM INTERRUPTING CAPACITY OF 10,000 AMP RMS SYMMETRICAL OR AS INDICATED.  
IDENTIFICATION AS TO CIRCUIT NUMBER AND PHASE.  
PANEL BOARDS: MAINS, NUMBER OF CIRCUITS, NUMBER AND SIZE OF BRANCH CIRCUIT BREAKERS AS INDICATED.  
TWO KEYS FOR EACH PLANEL BOARDS  
DISTRIBUTION PANELS SHALL BE COMPLETE WITH COPPER BUS AND RATED NEUTRALS.  
BOLT-ON COMMON TRIP BREAKERS UNLESS SPECIFIED OTHERWISE.  
TRIM AND DOOR FINISH: BAKED GRAY ENAMEL.  
PROVIDE NEW UPDATED PANEL CIRCUIT DIRECTORY. TYPEWRITTEN LEGEND SHOWING DESCRIPTION OF EACH CIRCUIT. SUBMIT AS PART OF "AS-BUILT" DRAWING SET FOR REVIEW AT COMPLETION OF THE PROJECT.

ELECTRICAL DISTRIBUTION EQUIPMENT SHALL BE APPROVED VENDORS: SCHNEIDER ELECTRIC, EATON CUTLER-HAMMER, SIEMENS.

27.2. LOCATE PANEL BOARDS AS INDICATED AND MOUNT SECURELY. PLUMB, TRUE AND SQUARE, TO ADJOINING SURFACES. INSTALL SURFACE MOUNTED PLANEL BOARDS ON GALVANIZED UNISTRUT STAND-OFFS OR ON FIRE RATED PLYWOOD BACKBOARDS

27.3. ENSURE THAT THE NEW PANEL BOARDS ARE PROVIDED WITH THE BEST BALANCE OF CURRENT BETWEEN PHASES, NO MORE THAN 10% UNBALANCE LOAD, AND SUBMIT REPORT IN OPERATIONS MANUAL. RE-BALANCE LOAD AS REQUIRED.

27.4. VERIFY ON SITE EXISTING CIRCUITS USED, SPARE BREAKERS AND SPACES AVAILABLE IN EXISTING PANEL BOARDS. COMPARE NUMBER OF CIRCUITS ON SITE WITH NUMBER OF CIRCUITS SHOWN ON ELECTRICAL DRAWINGS AND REPORT ANY DISCREPANCIES TO THE CONSULTANT.

28. CIRCUIT BREAKERS

28.1. REPLACE ALL EXISTING CIRCUIT BREAKERS WITH NEW AS IDENTIFIED ON ISSUED DRAWINGS AND PANEL SCHEDULES.

28.2. MOLDED CASE CIRCUIT BREAKERS TO BE BOLT-ON AND SHALL BE FROM THE SAME MANUFACTURER AS EXISTING BUILDING EQUIPMENT.

28.3. MINI BREAKERS MAY BE ACCEPTED TO REDUCE THE OVERALL SIZE OF PANEL FOR AREAS WITH LIMITED SPACE.

Canada

Parks Canada

Parcs Canada

Rouge National

Parc Urbain National

Urban Park

de la Rouge



2	05.30.18	ISSUED FOR TENDER	J.C	M.P.M	
1	04.25.18	ISSUED FOR 90% REVIEW	J.C	M.P.M	
No.	Date	Description	Drawn by Dessiné par	Approved Approuvé	

Revision / Revision

A	Detail number	A Numéro de détail
B	Sheet number	B Numéro de la feuille

Linear dimensions in millimetres	Dimensions linéaires en millimètres
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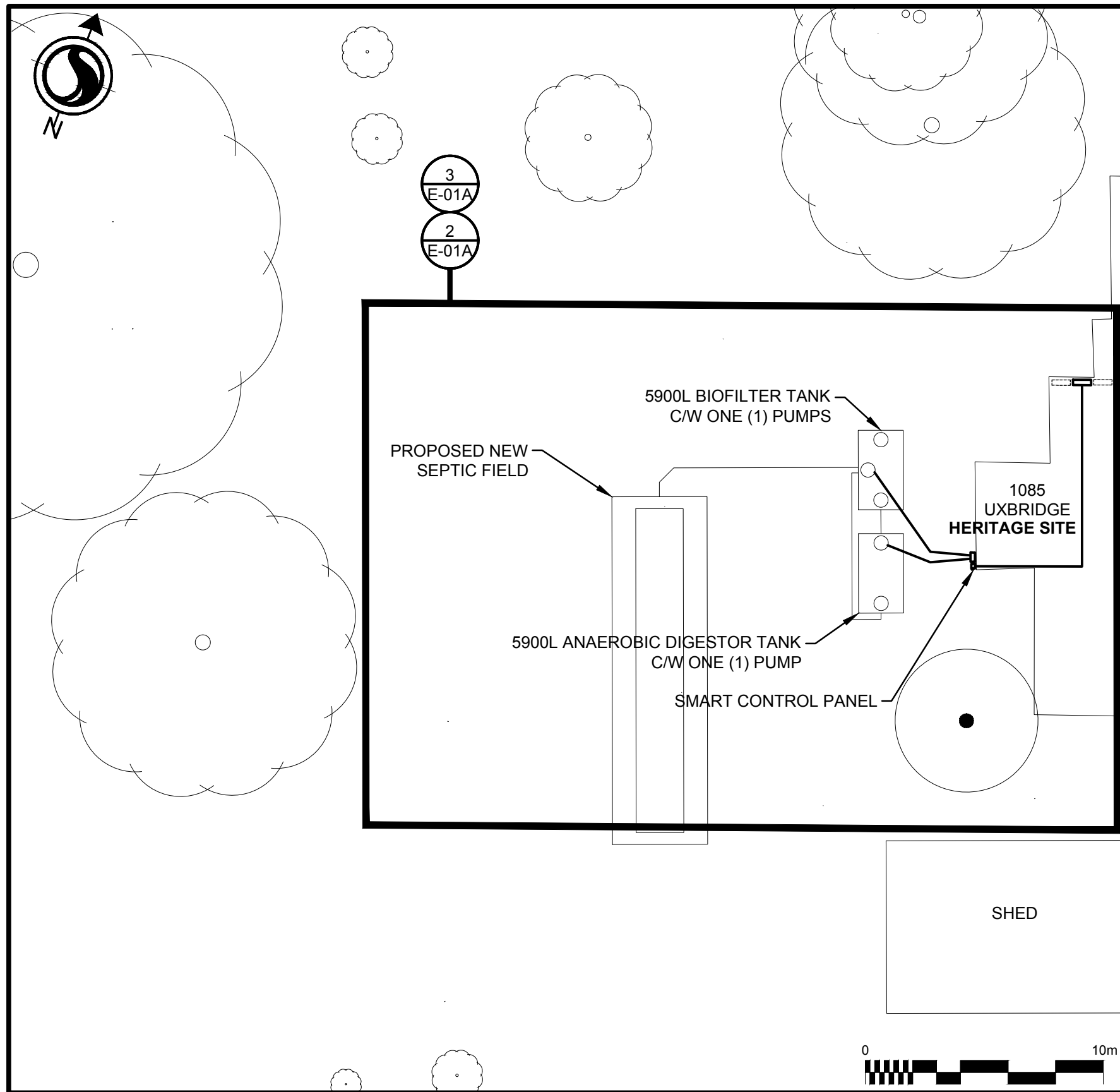
Project title/Titre du projet

ROUGE NATIONAL URBAN PARK  
SEPTIC SYSTEM REPLACEMENTS

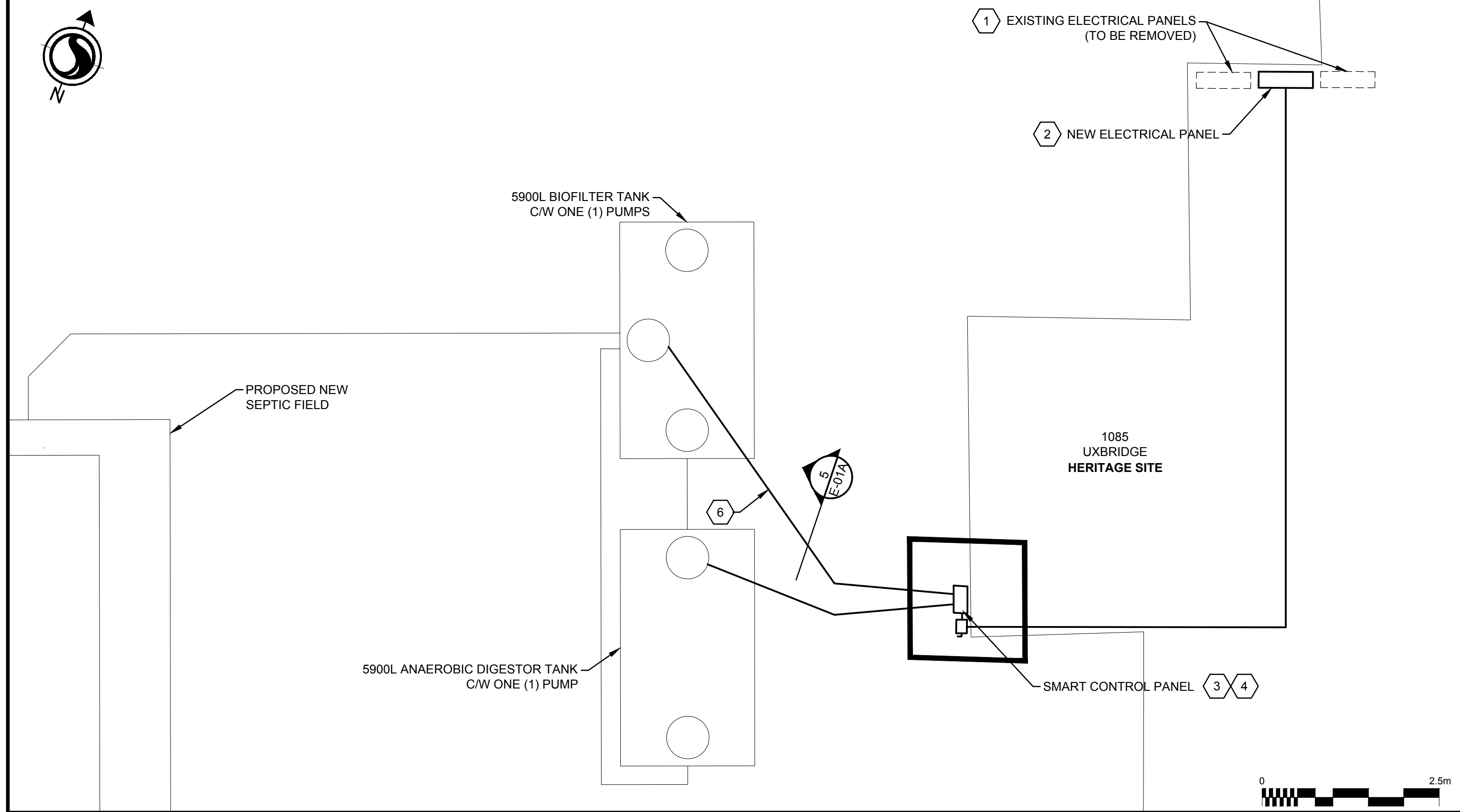
ELECTRICAL  
SPECIFICATIONS

Designed by/Concept par M. PAK MUNRO	Date
Drawn by/Designé par J. CZYZEWSKI	Date
Checked by/Vérifié par E. LALEUR	Date
Project No./N° du projet 163401449	Scale/Échelle AS INDICATED
Sheet No./ N° de la feuille E-00	Drawing Set No./N° de série du dessin

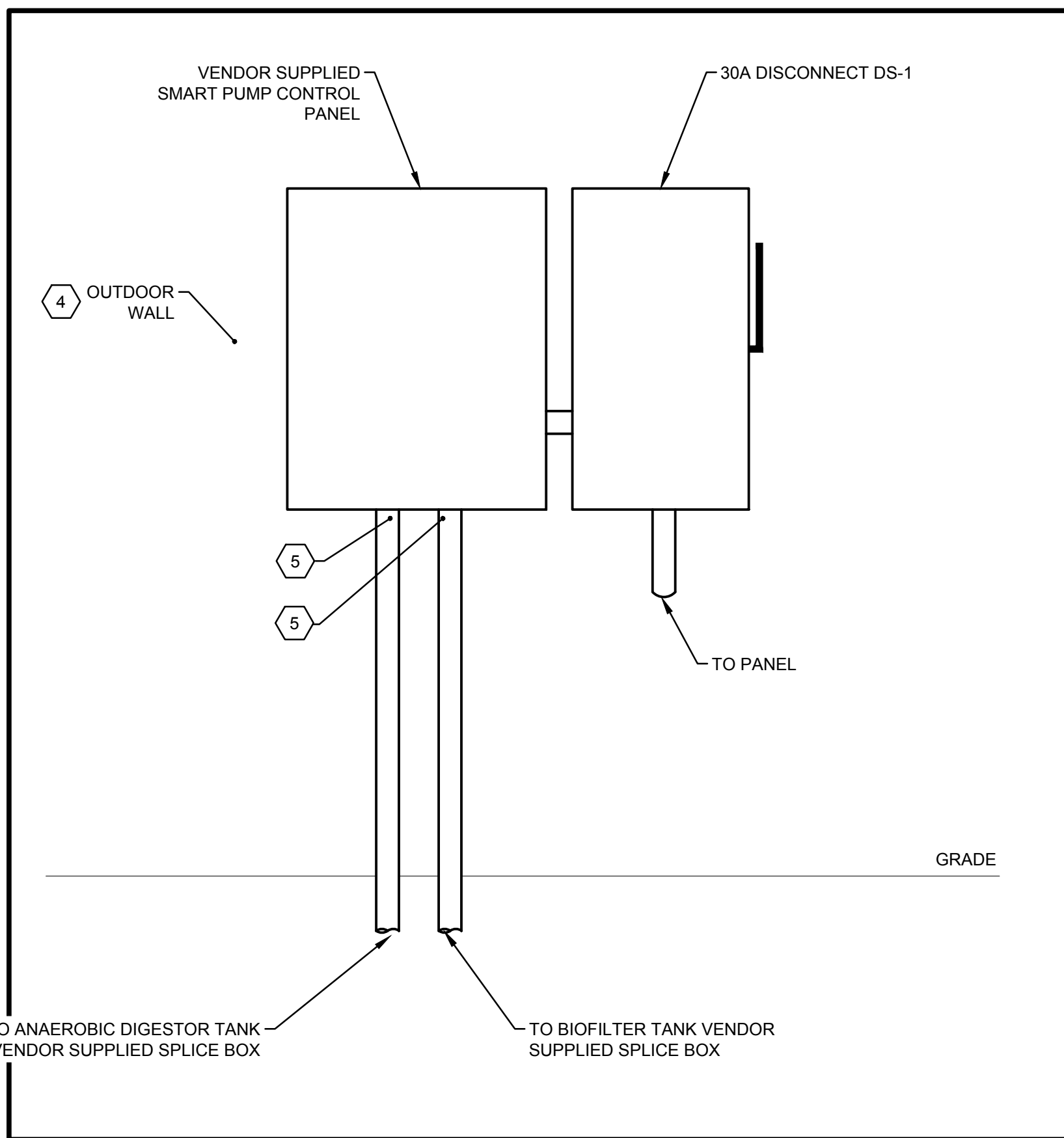




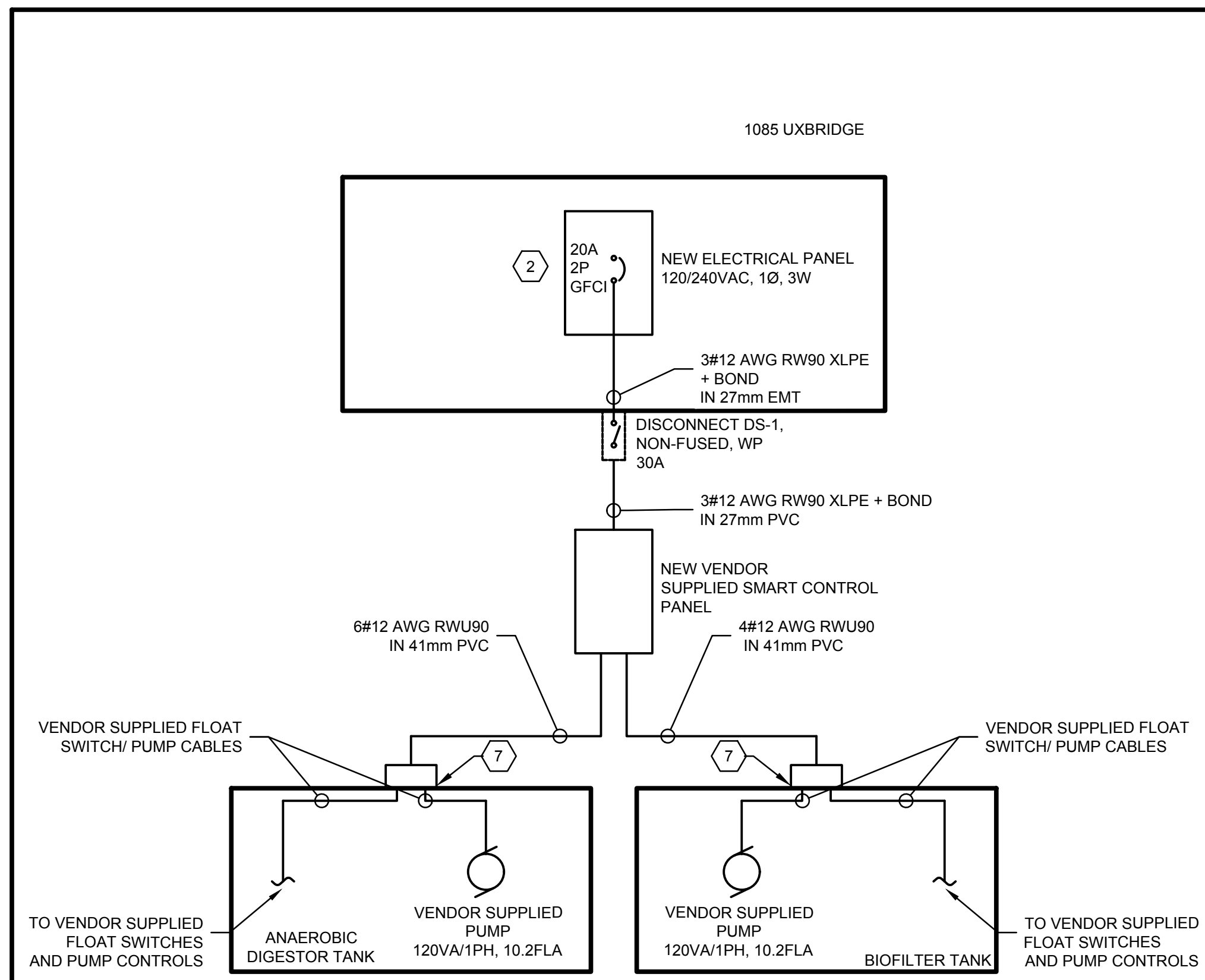
**1 ELECTRICAL SITE PLAN**  
E-01a 1:10m



**2 ELECTRICAL EQUIPMENT LAYOUT**  
E-01a 1:2.5m



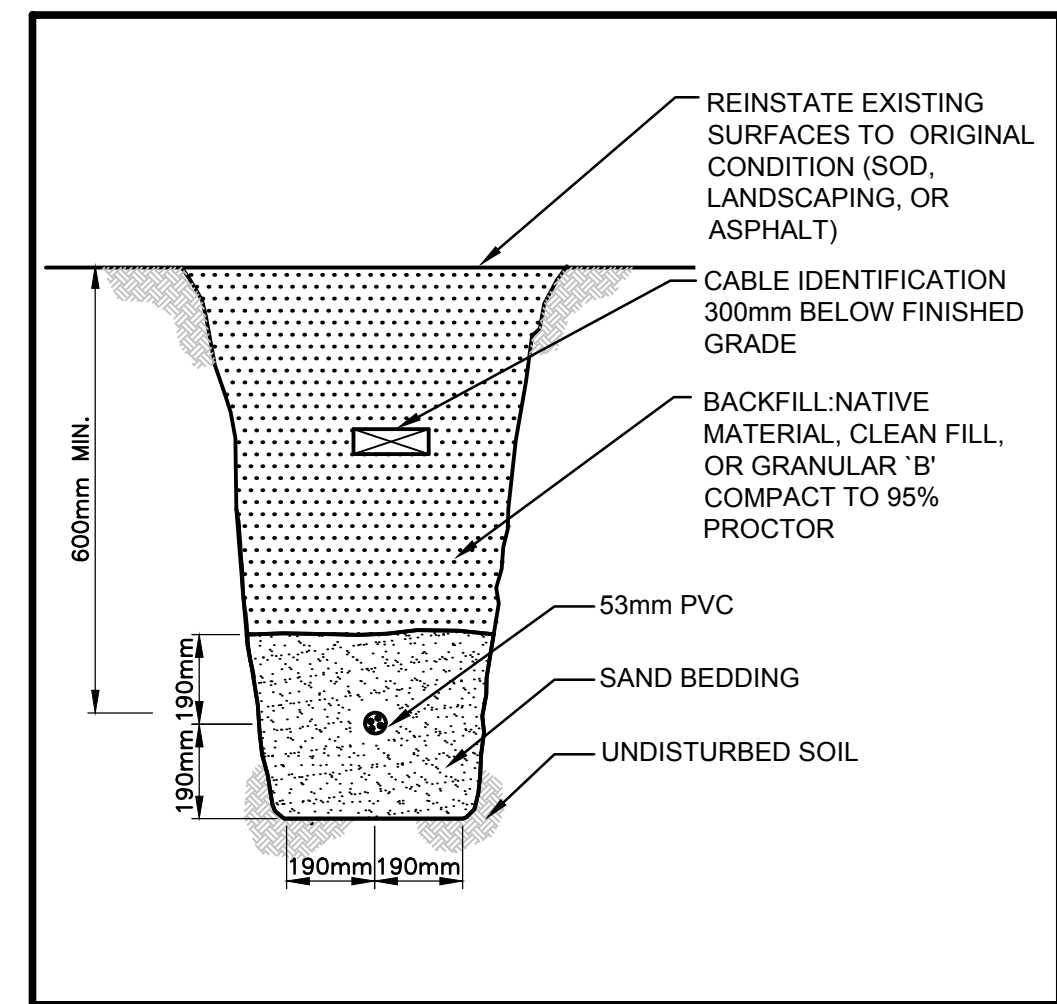
**3 OUTDOOR STRUCTURE DETAIL**  
E-01a NTS



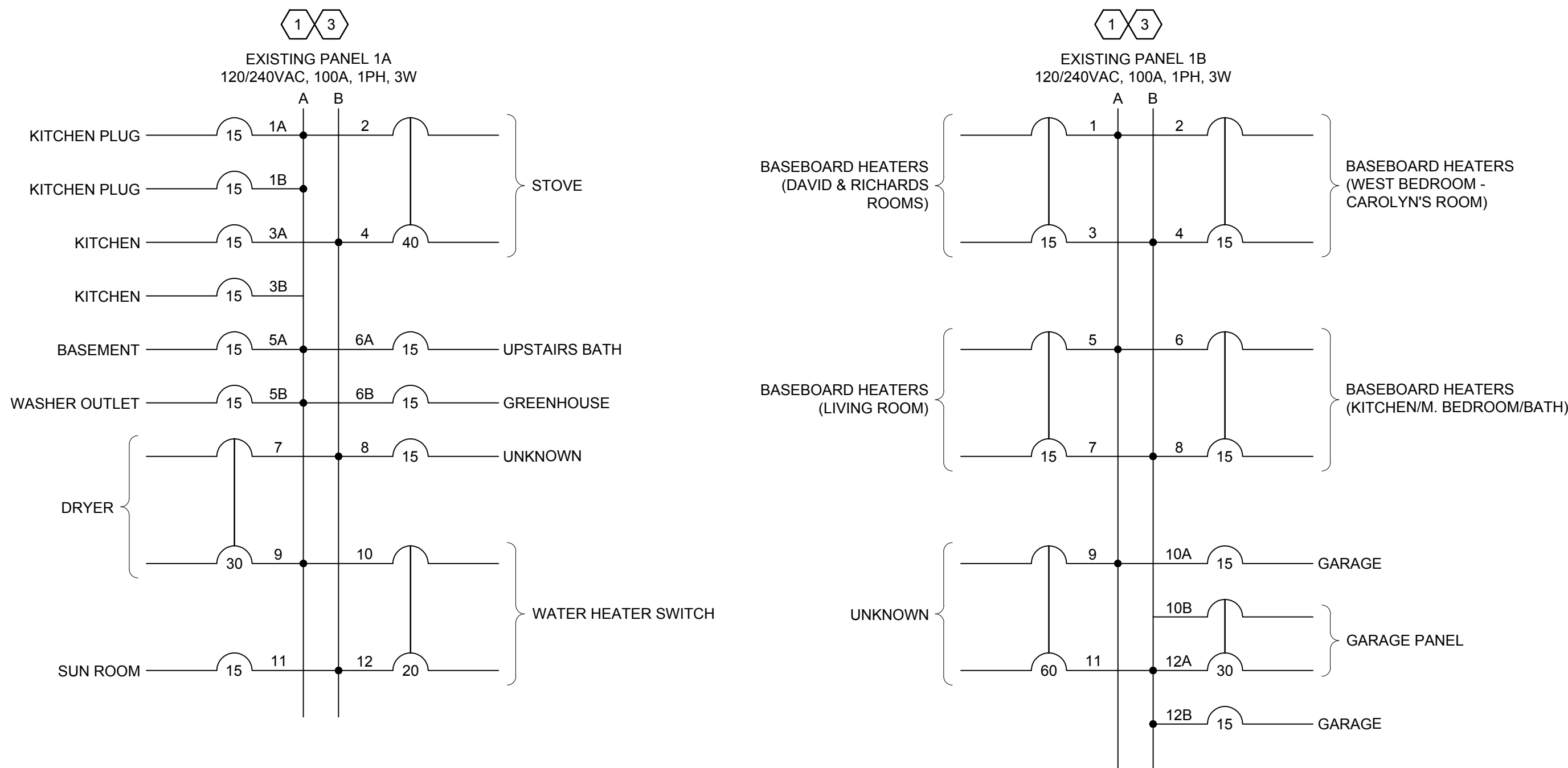
**4 PARTIAL SINGLE LINE DIAGRAM**  
E-01a NTS

#### GENERAL NOTES

- THE BUILDING AT THIS SITE IS CLASSIFIED HERITAGE. VISIT SITE PRIOR TO SUBMITTING FOR TENDER BID TO DETERMINE SITE CONDITIONS SUCH AS BUT NOT LIMITED TO EXACT LOCATION OF EXISTING PANEL, PENETRATIONS INTO EXISTING BUILDING ETC.
- CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS, INCLUDING BUT NOT LIMITED TO ULTRASONIC SCANNING OR X-RAY SCANNING, TO AVOID DAMAGING OR DEMOLISHING ALL SITE THAT ARE CLASSIFIED AS HERITAGE SITES.



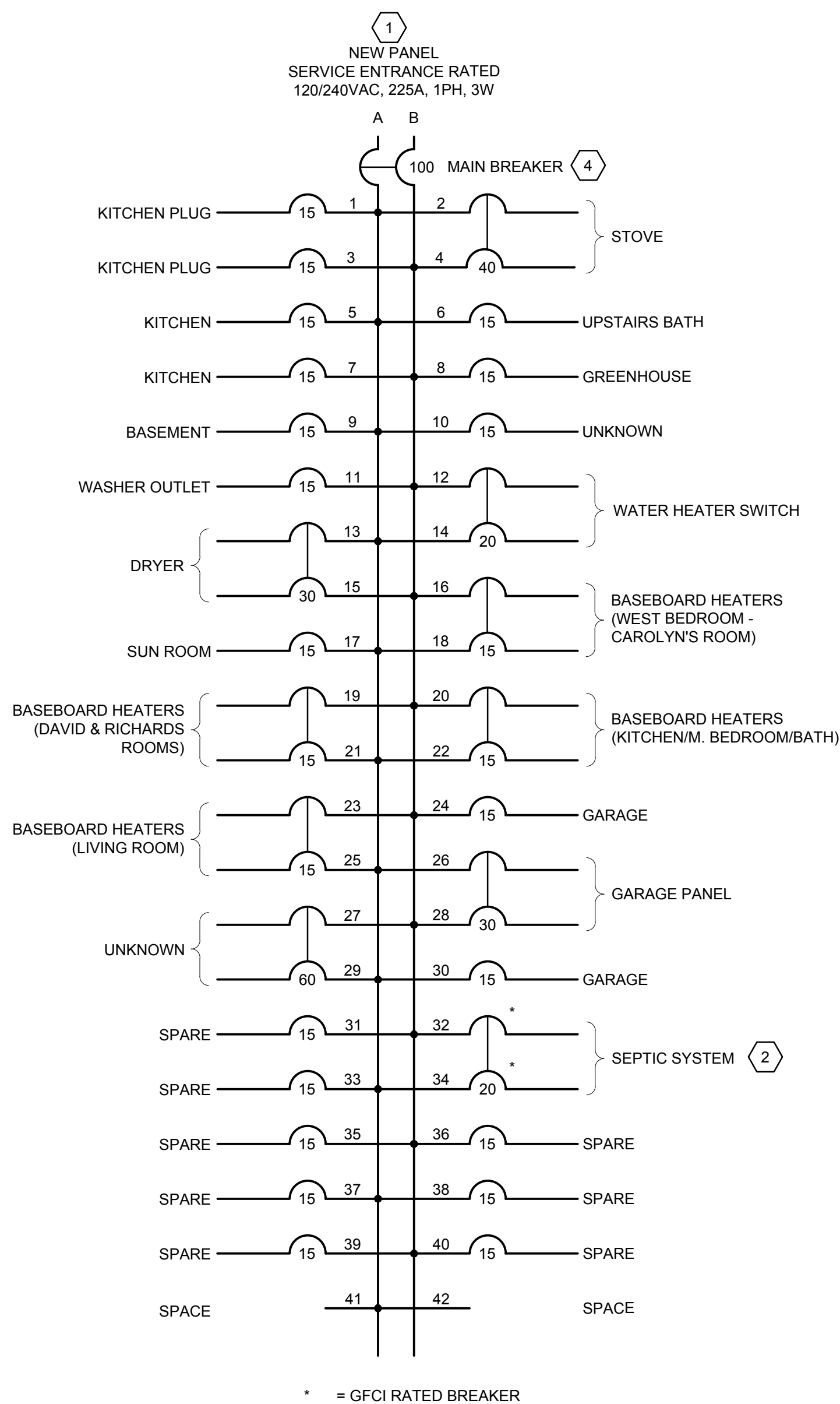




1 EXISTING ELECTRICAL PANEL SCHEDULES  
E-01b NTS



2 EXISTING ELECTRICAL PANELS  
E-01b NTS



3 NEW PANEL SCHEDULE  
E-01b NTS

PRIMARY DRAWING NOTES	
1	DEMOLISH AND REMOVE EXISTING TWO (2) 120/240VAC, 100A ELECTRICAL PANELS AND REPLACE WITH SINGLE NEW 120/240VAC, 225A PANEL. CONTRACTOR TO EXTEND ALL EXISTING CIRCUITS TO ENSURE EXISTING LOADS WITHIN BUILDING REMAIN OPERATIONAL. NEW PANELBOARD TO BE COMPLETE WITH QUANTITIES AND SIZES OF BREAKERS TO MATCH EXISTING PANELBOARD TO ACCOMMODATE ALL EXISTING CIRCUITS. VERIFY EXACT BREAKER SIZES AND QUANTITIES ONSITE PRIOR TO ORDERING.
2	PROVIDE AND INSTALL 2P, 20A GFCI BREAKER IN NEW PANEL FOR NEW VENDOR SUPPLIED SMART CONTROL PANEL LOCATED ON OUTDOOR STRUCTURE.
3	CONTRACTOR TO CONFIRM BREAKER SIZES BEFORE RE-FEEDING EXISTING CIRCUITS TO NEW PANELBOARD.
4	CONTRACTOR TO CONFIRM MAIN FUSING BEFORE SIZING MAIN BREAKER AT NEW SERVICE ENTRANCE RATED ELECTRICAL PANEL.


Canada

Parks Canada      Parcs Canada  
Rouge National Urban Park      Parc Urbain National de la Rouge



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No.	Date	Description	Drawn by Dessiné par	Approved Approuvé

Revision / Revision

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Project title/Titre du projet

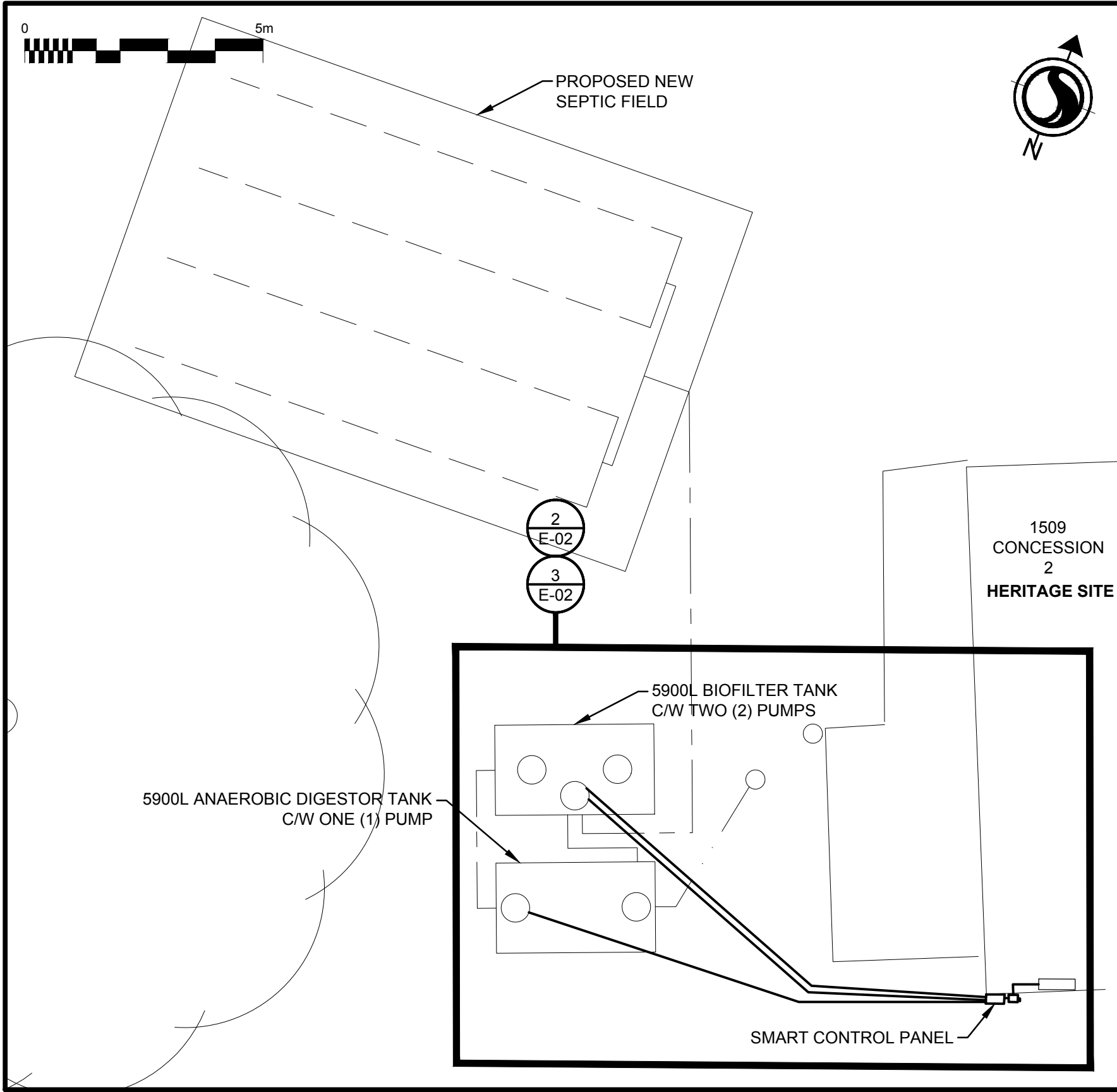
ROUGE NATIONAL URBAN PARK  
SEPTIC SYSTEM REPLACEMENTS

Drawing title/Titre du dessin

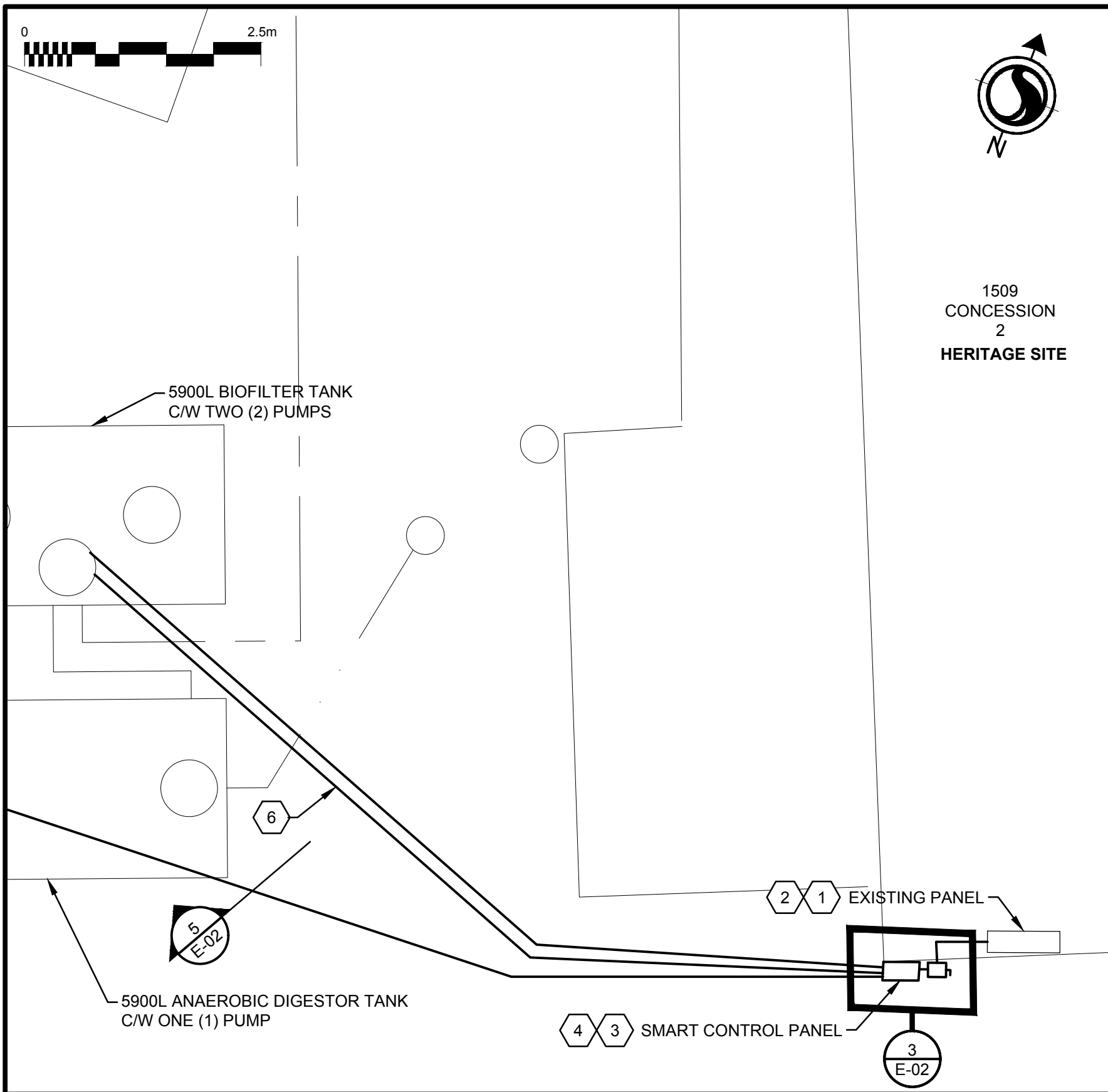
1085 UXBRIDGE PICKERING  
TOWNLINE, CLAREOUNT  
EXISTING/NEW PANEL SCHEDULE

Designed by/Concept par M. PAK MUNRO	Date
Drawn by/Designé par J. CZYZEWSKI	Date
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Project No./N° du projet 163401449	Scale/Échelle AS INDICATED
Drawing Set No./N° de série du dessin	Sheet No./ N° de la feuille E-01b

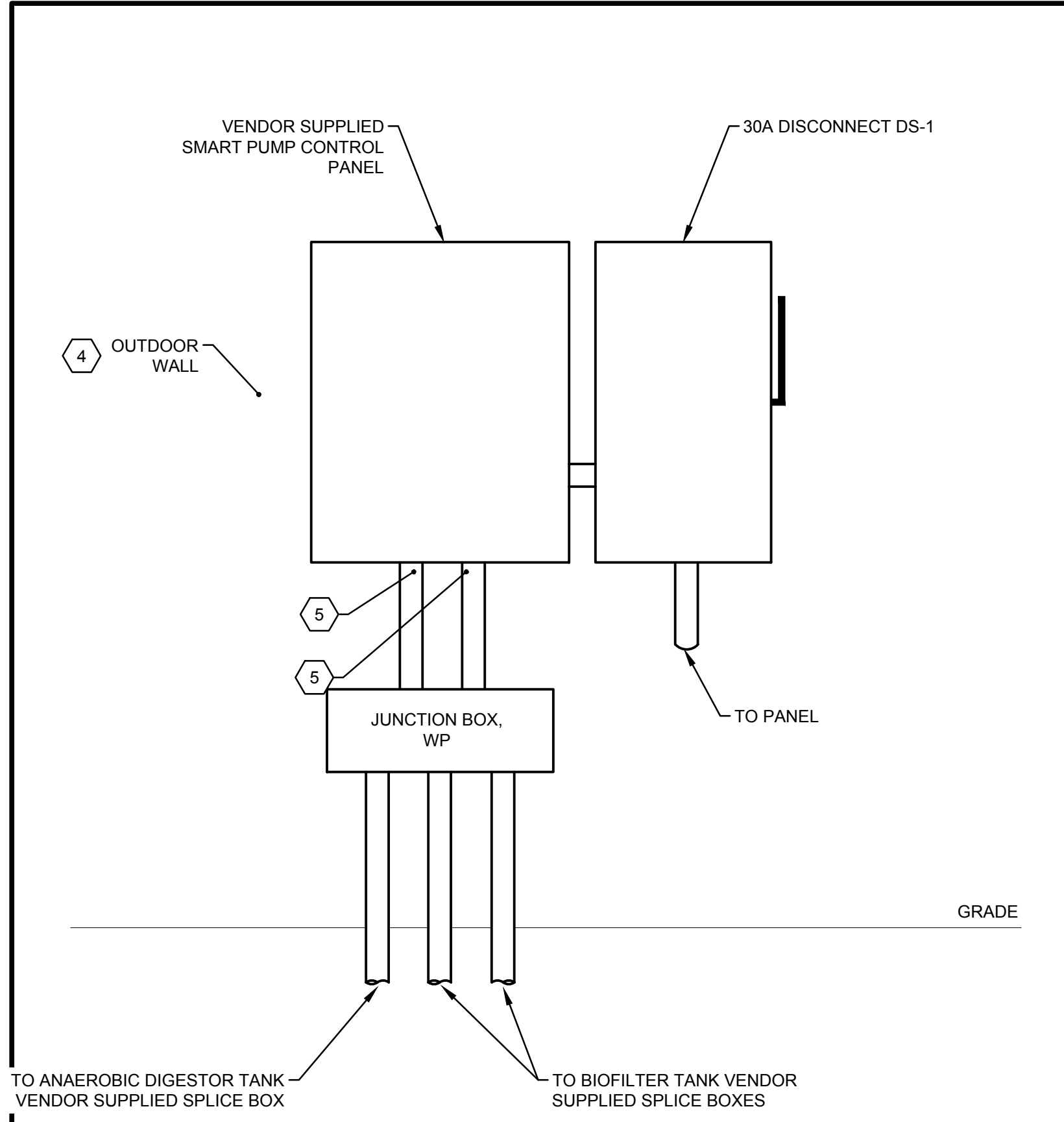




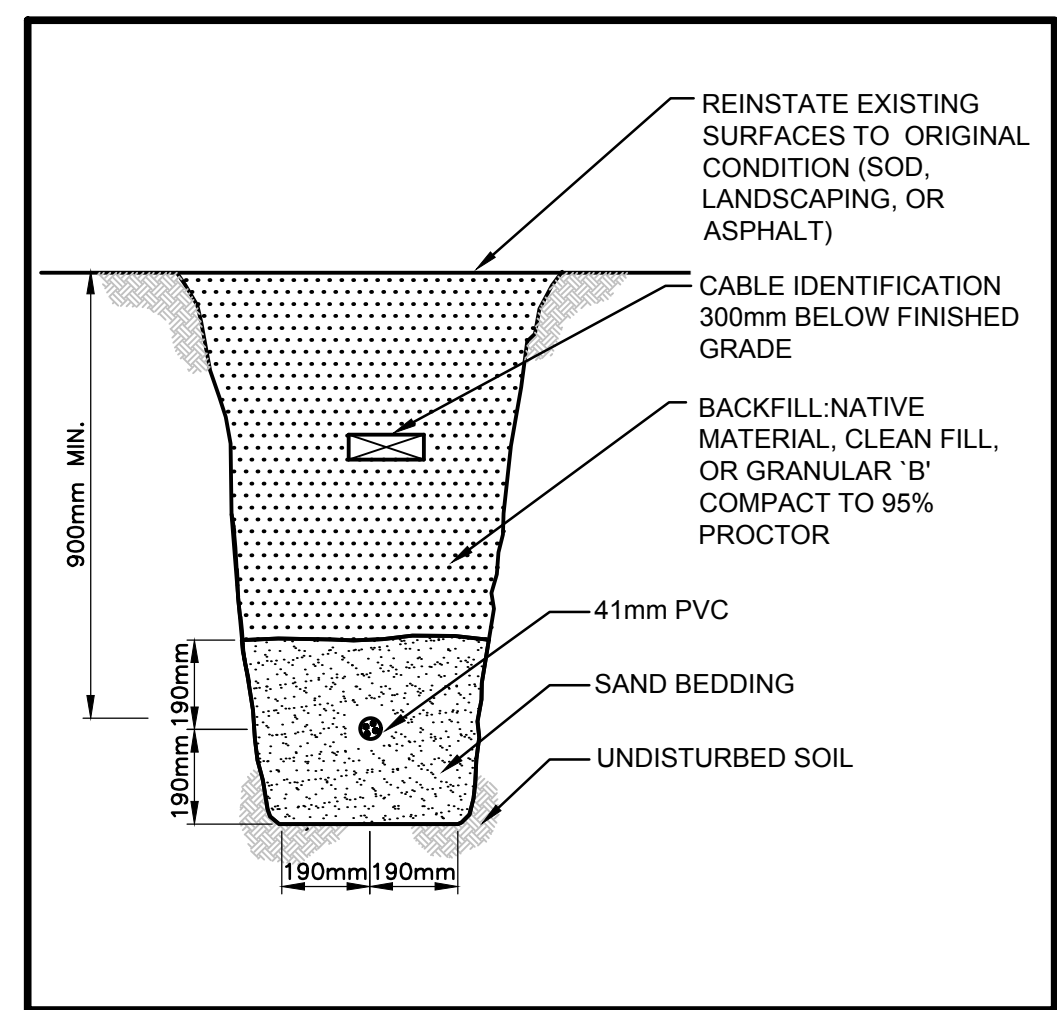
1 ELECTRICAL SITE PLAN  
E-02 1:5m



2 ELECTRICAL EQUIPMENT LAYOUT  
E-02 1:2.5m



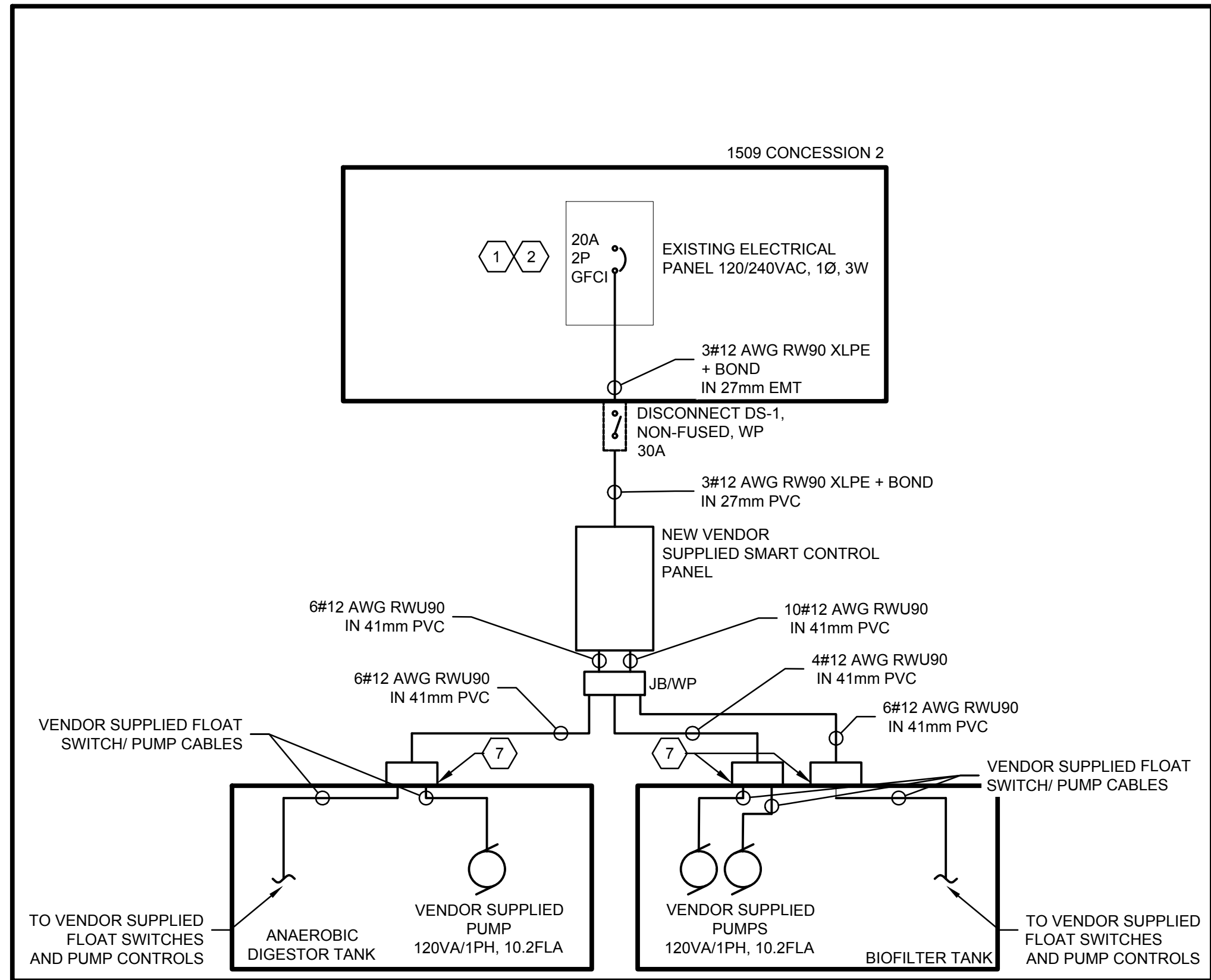
3 OUTDOOR STRUCTURE DETAIL  
E-02 NTS



5 TYPICAL DIRECT BURIED DETAIL  
E-02 NTS

- GENERAL NOTES**
1. THE BUILDING AT THIS SITE IS CLASSIFIED HERITAGE. VISIT SITE PRIOR TO SUBMITTING FOR TENDER BID TO DETERMINE SITE CONDITIONS SUCH AS BUT NOT LIMITED TO EXACT LOCATION OF EXISTING PANEL, PENETRATIONS INTO EXISTING BUILDING ETC.
  2. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS, INCLUDING BUT NOT LIMITED TO ULTRASONIC SCANNING OR X-RAY SCANNING, TO AVOID DAMAGING OR DEMOLISHING ALL SITE THAT ARE CLASSIFIED AS HERITAGE SITES.

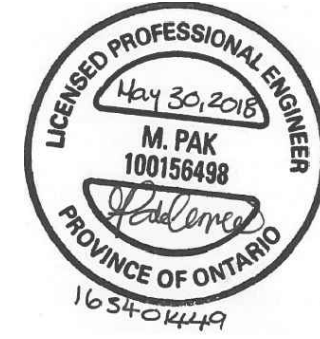
- PRIMARY DRAWING NOTES**
1. EXISTING 120/240VAC, 100A ELECTRICAL PANEL. CONTRACTOR TO DETERMINE EXACT LOCATION.
  2. PROVIDE AND INSTALL NEW 2P, 20A GFCI BREAKER IN EXISTING PANEL FOR NEW VENDOR SUPPLIED SMART CONTROL PANEL LOCATED ON OUTDOOR STRUCTURE.
  3. ENSURE ALL BUILDING PENETRATIONS ARE SEALED WATER TIGHT. PROVIDE EMT WITHIN BUILDING. CONTRACTOR TO DETERMINE BEST POSSIBLE CONDUIT ROUTING. ROUTING SHOWN IS FOR DIAGRAMMATIC PURPOSES ONLY.
  4. CONTRACTOR TO MOUNT ALL NEW ELECTRICAL EQUIPMENT TO OUTSIDE WALL OF BUILDING. CONTRACTOR TO DETERMINE IDEAL LOCATION.
  5. AFTER WIRING, SEAL ENDS OF CONDUIT WITH "DUCT SEAL" OR EQUIVALENT SUITABLE FOR OUTDOOR USE.
  6. SLOPE HORIZONTAL CONDUIT RUNS SO AS TO DRAIN MOISTURE INTO WELL.
  7. NEMA 6P RATED SPLICE BOX (BY OTHERS) LOCATED OUTSIDE OF PUMP ACCESS CHIMNEY C/W BEAD OF RTV SEALANT AROUND LID AND ANY OPENINGS.



4 PARTIAL SINGLE LINE DIAGRAM  
E-02 NTS

Canada

Parks Canada Parcs Canada  
Rouge National Urban Park Parc Urbain National de la Rouge



2	05.30.18	ISSUED FOR TENDER	J.C.	M.P.M.
1	04.25.18	ISSUED FOR 90% REVIEW	J.C.	M.P.M.
No.	Date	Description	Drawn by Dessiné par	Approved Approuvé

Revision / Revision

A	Detail number	A Numéro de détail
B	Sheet number	B Numéro de la feuille

Linear dimensions in millimetres Dimensions linéaires en millimètres

Consultant's Name Nom de l'expert-conseil	Eng. Stamp Sceau de l'ingénieur
<b>Stantec</b> Stantec Consulting Ltd. 1531-400, Clyde Avenue Ottawa (Ontario) K2Z 1G4 Telephone : 613 722 4420 Fax : 613 722 2799	

Project title/Titre du projet

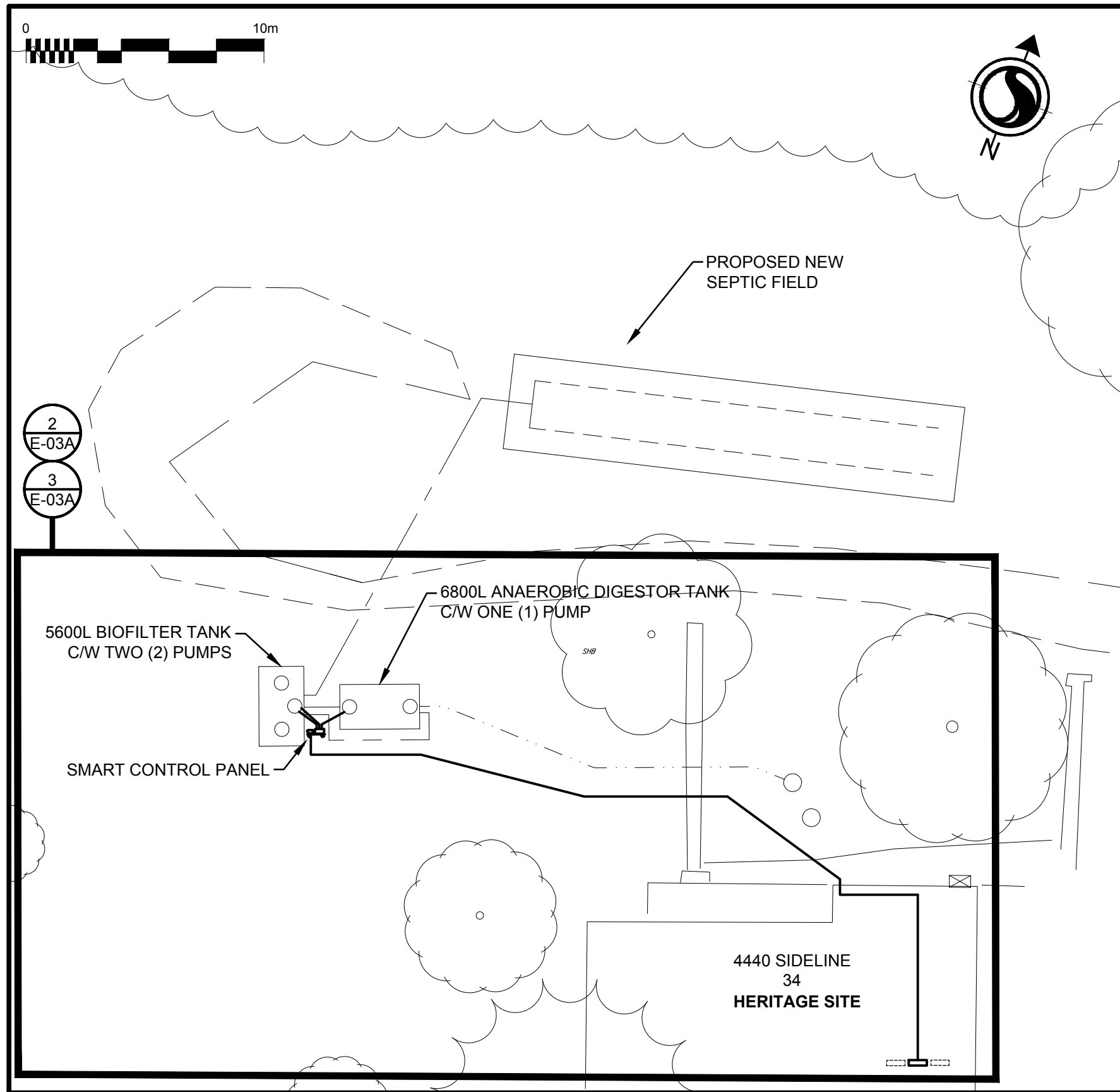
## ROUGE NATIONAL URBAN PARK SEPTIC SYSTEM REPLACEMENTS

Drawing title/Titre du dessin

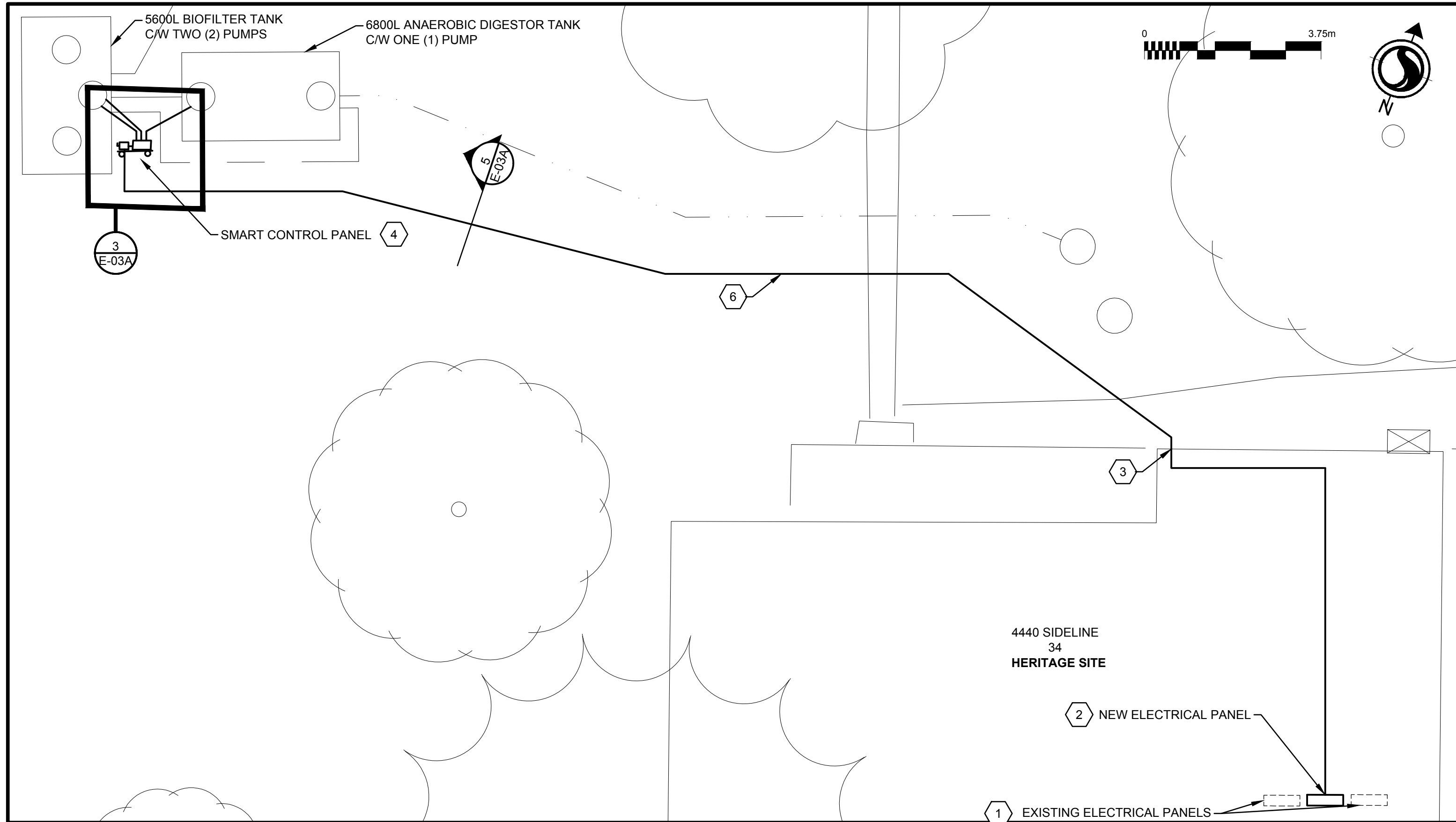
## 1509 CONCESSION 2 PICKERING ELECTRICAL SITE PLAN AND DETAILS

Designed by/Concept par M. PAK MUNRO	Date
Drawn by/Designé par J. CZYZEWSKI	Date
Checked by/Vérifié par E. LAFLEUR	Date
Project No./N° du projet 163401449	Scale/Échelle AS INDICATED
Drawing Set No./N° de série du dessin	Sheet No./ N° de la feuille E-02

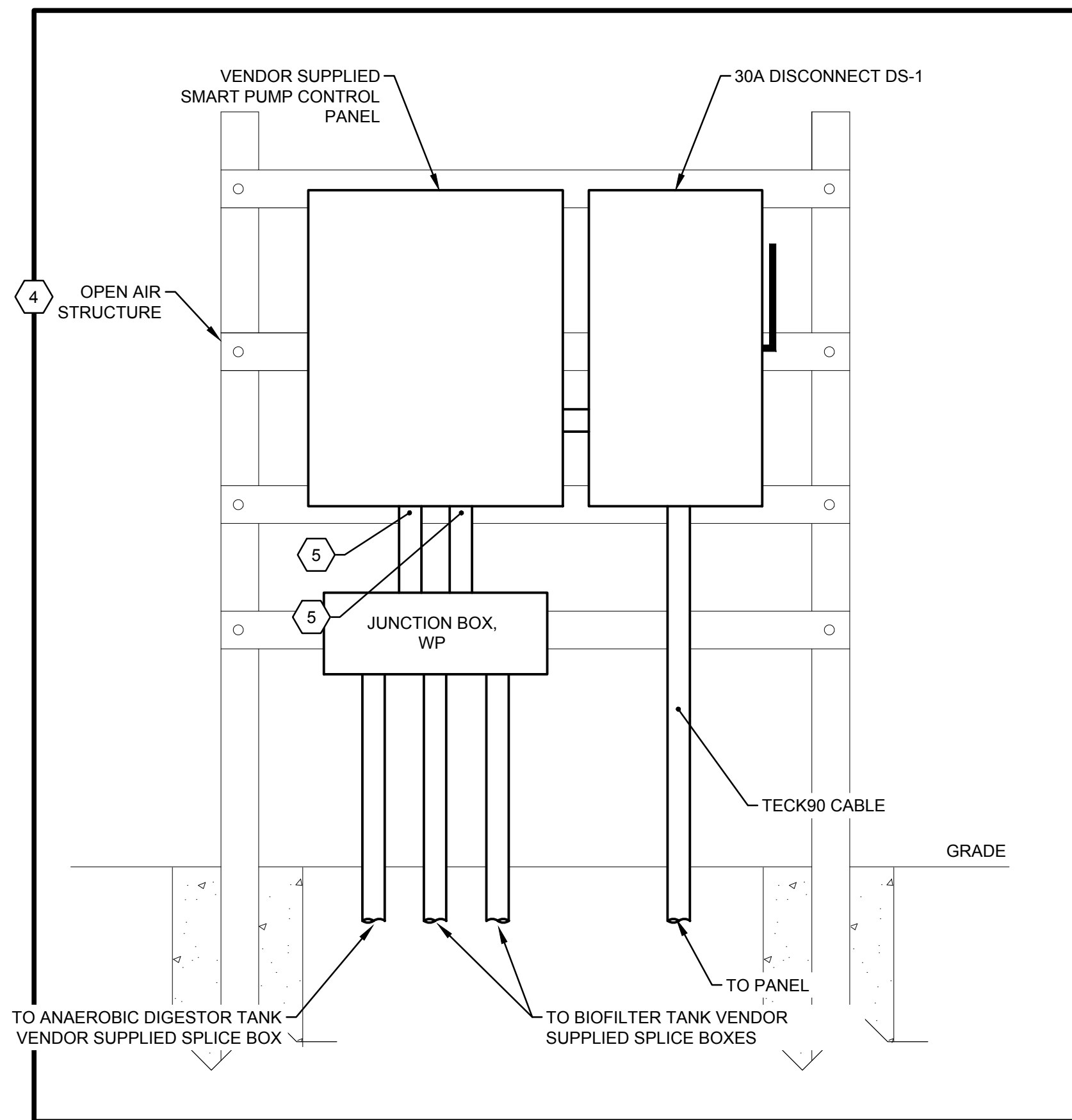




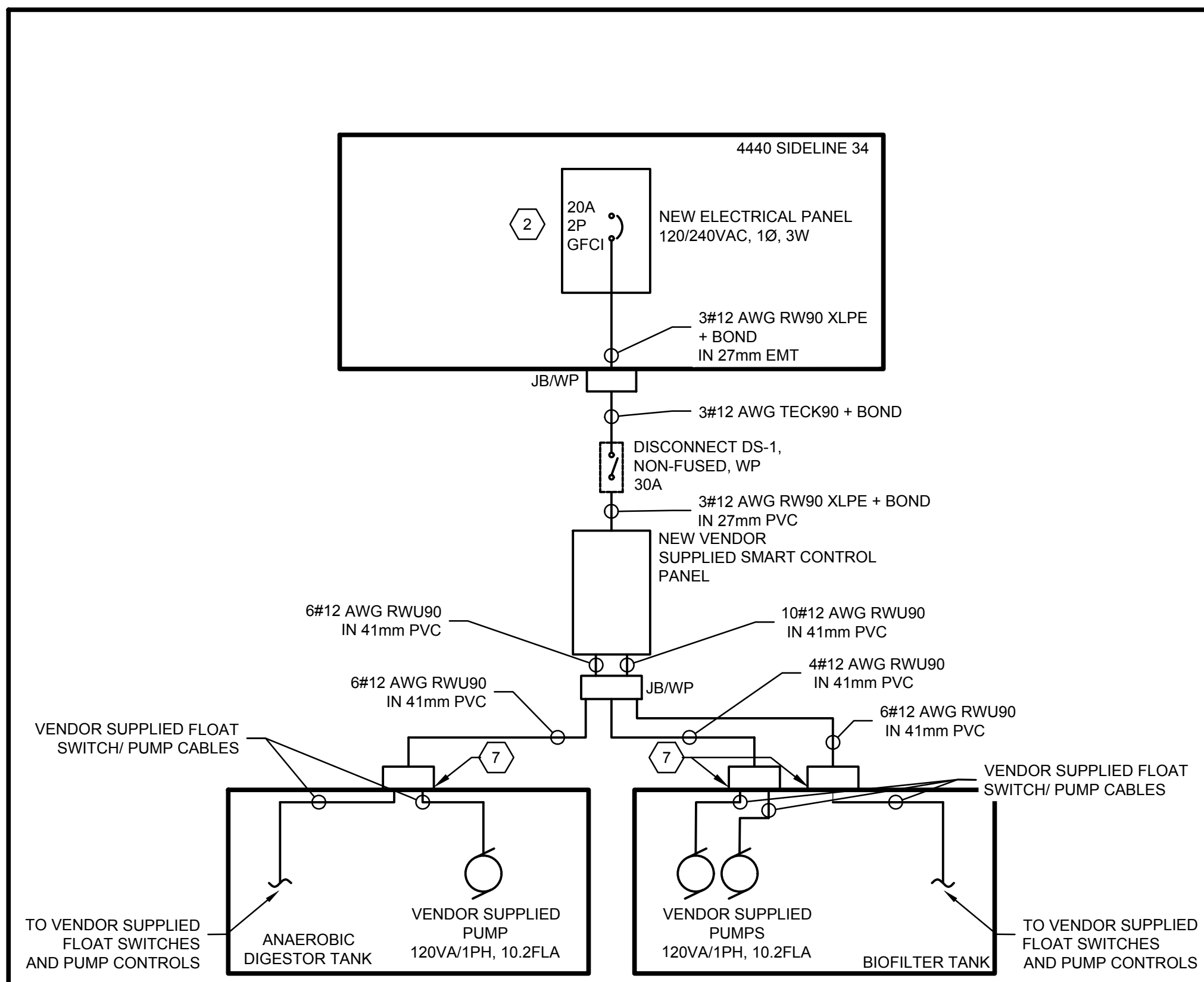
1 ELECTRICAL SITE PLAN  
E-03a 1:10m



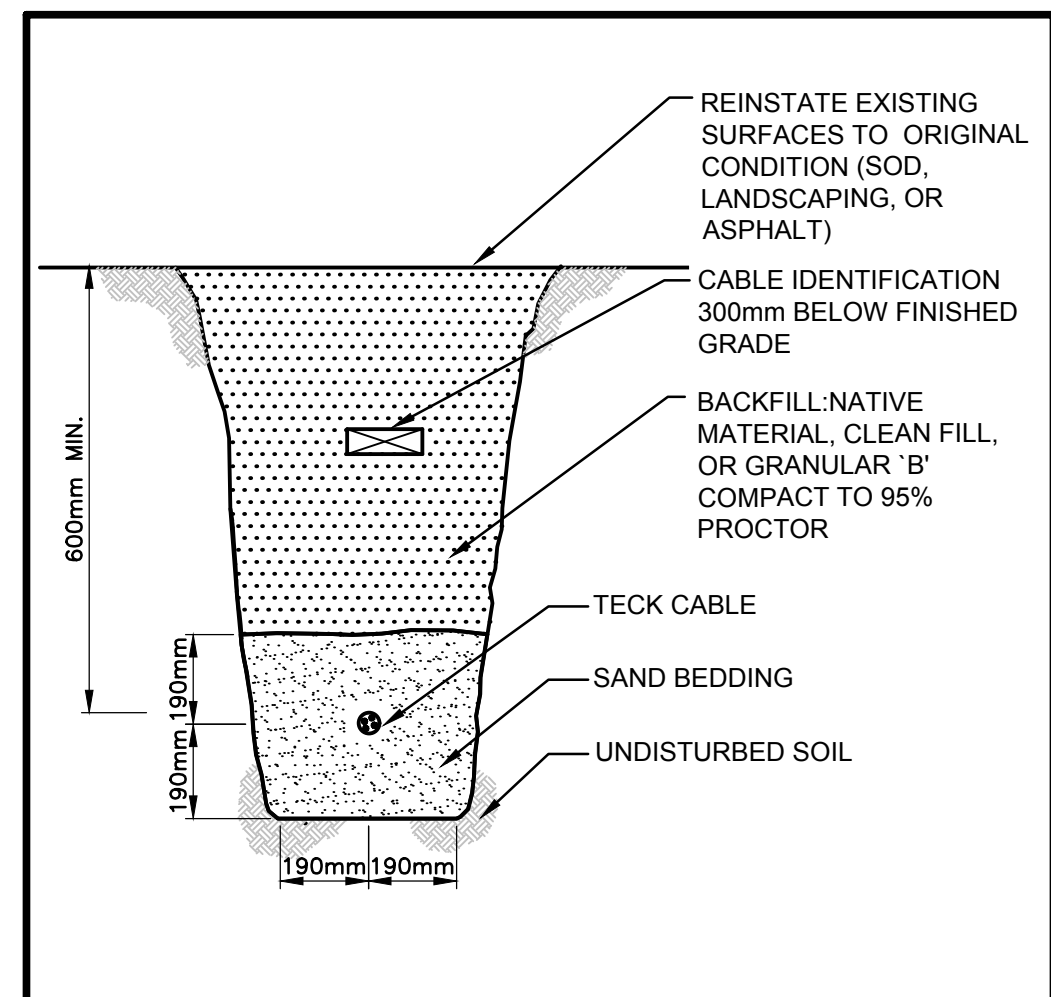
2 ELECTRICAL EQUIPMENT LAYOUT  
E-03a 1:3.75m



3 OUTDOOR STRUCTURE DETAIL  
E-03a NTS



4 PARTIAL SINGLE LINE DIAGRAM  
E-03a NTS



5 TYPICAL DIRECT BURIED DETAIL  
E-03a NTS

#### PRIMARY DRAWING NOTES

- DEMOLISH AND REMOVE EXISTING TWO (2) 120/240VAC, 100A ELECTRICAL PANELS AND REPLACE WITH SINGLE NEW 120/240VAC, 100A PANEL. CONTRACTOR TO EXTEND CIRCUITS TO SUIT. CONTRACTOR TO PROVIDE AND INSTALL PANELBOARD WITH ENOUGH CAPACITY AND BREAKER TO ACCOMMODATE ALL EXISTING CIRCUITS WITHIN BUILDING. SEE DRAWING E-03b FOR DETAILS.
- PROVIDE AND INSTALL 2P, 20A GFCI BREAKER IN NEW PANEL FOR NEW VENDOR SUPPLIED SMART CONTROL PANEL LOCATED ON OUTDOOR STRUCTURE.
- ENSURE ALL BUILDING PENETRATIONS ARE SEALED WATER TIGHT. PROVIDE EMT WITHIN BUILDING AND TRANSITION TO TECK FOR OUTDOORS. CONTRACTOR TO DETERMINE BEST POSSIBLE CONDUIT ROUTING. ROUTING SHOWN IS FOR DIAGRAMMATIC PURPOSES ONLY.
- CONTRACTOR TO PROVIDE, FABRICATE AND INSTALL EXTERIOR UNISTRUT OPEN-AIR STRUCTURE SUITABLE FOR MOUNTING OF EXTERIOR EQUIPMENT
- AFTER WIRING, SEAL ENDS OF CONDUIT WITH "DUCT SEAL" OR EQUIVALENT SUITABLE FOR OUTDOOR USE.
- SLOPE HORIZONTAL CONDUIT RUNS SO AS TO DRAIN MOISTURE INTO WELL.
- NEMA 6P RATED SPLICE BOX (BY OTHERS) LOCATED OUTSIDE OF PUMP ACCESS CHIMNEY C/W BEAD OF RTV SEALANT AROUND LID AND ANY OPENINGS.

#### GENERAL NOTES

- THE BUILDING AT THIS SITE IS CLASSIFIED HERITAGE. VISIT SITE PRIOR TO SUBMITTING FOR TENDER BID TO DETERMINE SITE CONDITIONS SUCH AS BUT NOT LIMITED TO EXACT LOCATION OF EXISTING PANEL, PENETRATIONS INTO EXISTING BUILDING ETC.
- CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS, INCLUDING BUT NOT LIMITED TO ULTRASONIC SCANNING OR X-RAY SCANNING, TO AVOID DAMAGING OR DEMOLISHING ALL SITE THAT ARE CLASSIFIED AS HERITAGE SITES.

Canada

Parks Canada  
Rouge National Urban Park

Parcs Canada  
Parc Urbain National de la Rouge



No.	Date	Description	Drawn by Dessiné par	Approved Approuvé
2	05.30.18	ISSUED FOR TENDER	J.C.	M.P.M.
1	04.25.18	ISSUED FOR 90% REVIEW	J.C.	M.P.M.

Revision / Revision				
A	Detail number	A Numéro de détail		
B	Sheet number	B Numéro de la feuille		
	Linear dimensions in millimetres	Dimensions linéaires en millimètres		

Consultant's Name Nom de l'expert-conseil	Eng. Stamp Sceau de l'ingénieur
<b>Stantec</b> Stantec Consulting Ltd. 1331-400, Clyde Avenue Ottawa (Ontario) K2C 1G4 Telephone : 613.722.4430 Fax : 613.722.2799	

Project title/Titre du projet

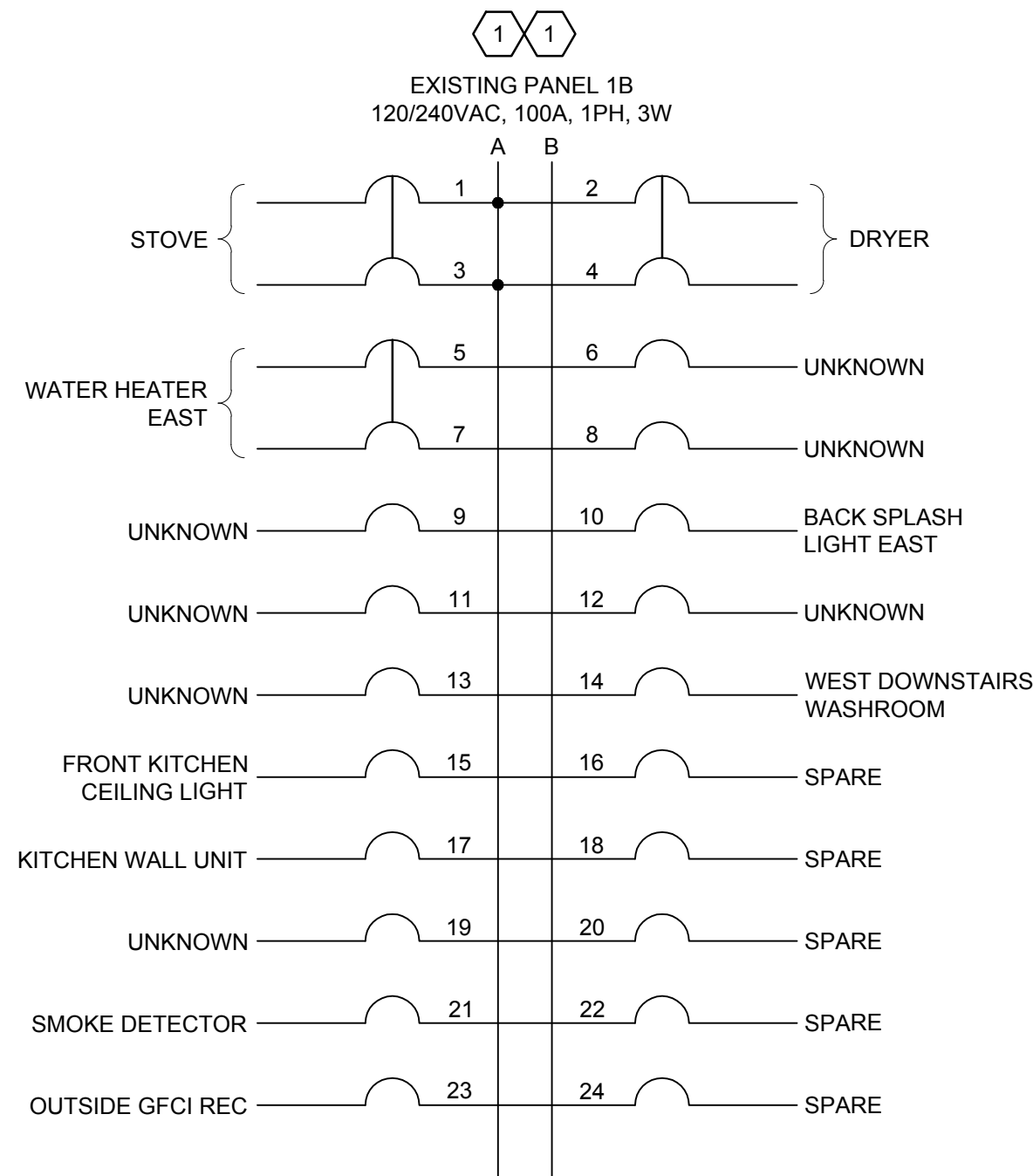
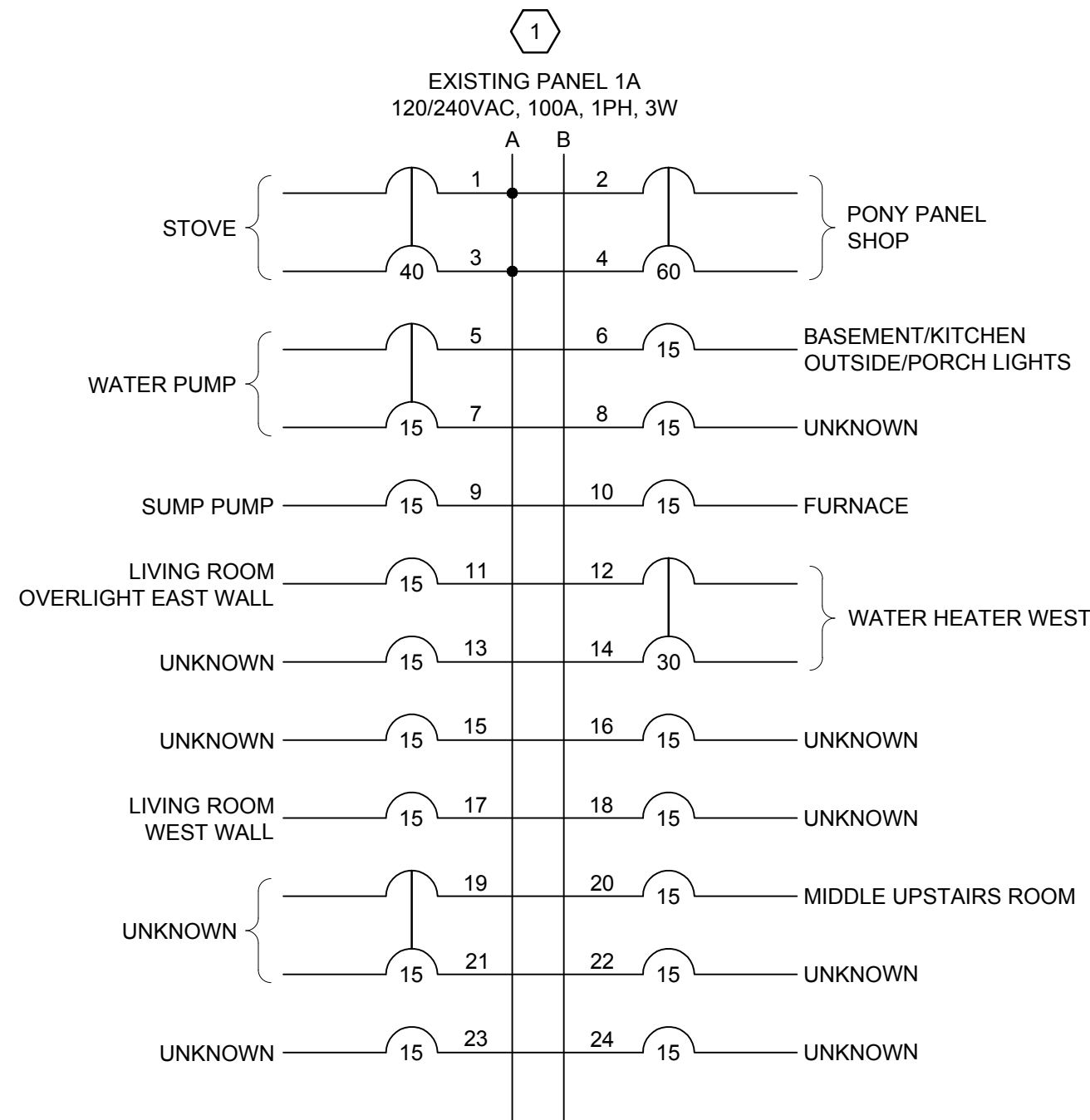
#### ROUGE NATIONAL URBAN PARK SEPTIC SYSTEM REPLACEMENTS

Drawing title/Titre du dessin

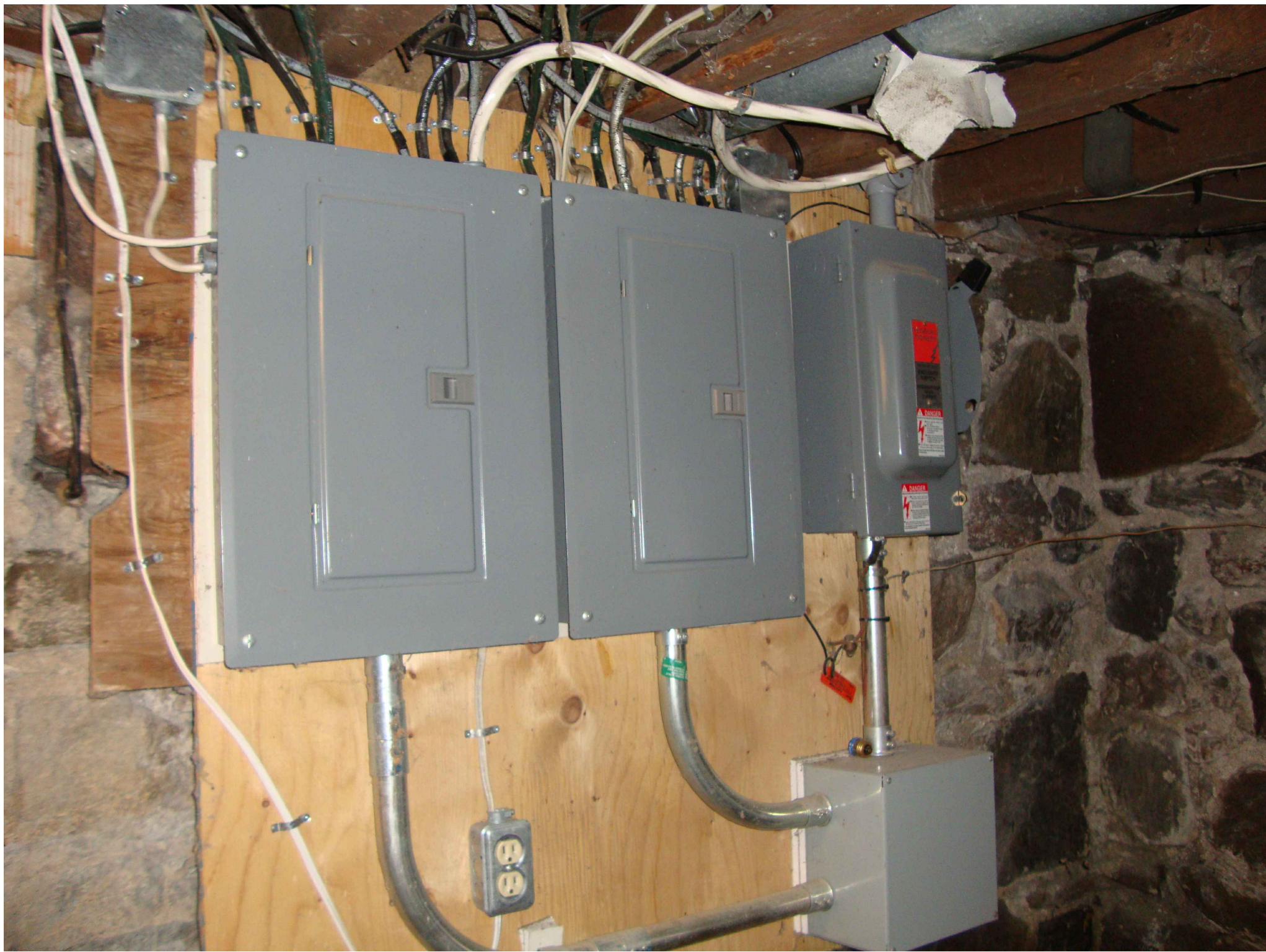
#### 4440 SIDELINE 34 PICKERING ELECTRICAL SITE PLAN AND DETAILS

Designed by/Concept par M. PAK MUNRO	Date
Drawn by/Designé par J. CZYZEWSKI	Date
Checked by/Vérifié par E. LALEUR	Date
Project No./N° du projet 163401449	Scale/Échelle AS INDICATED
Drawing Set No./N° de série du dessin	Sheet No./ N° de la feuille E-03a

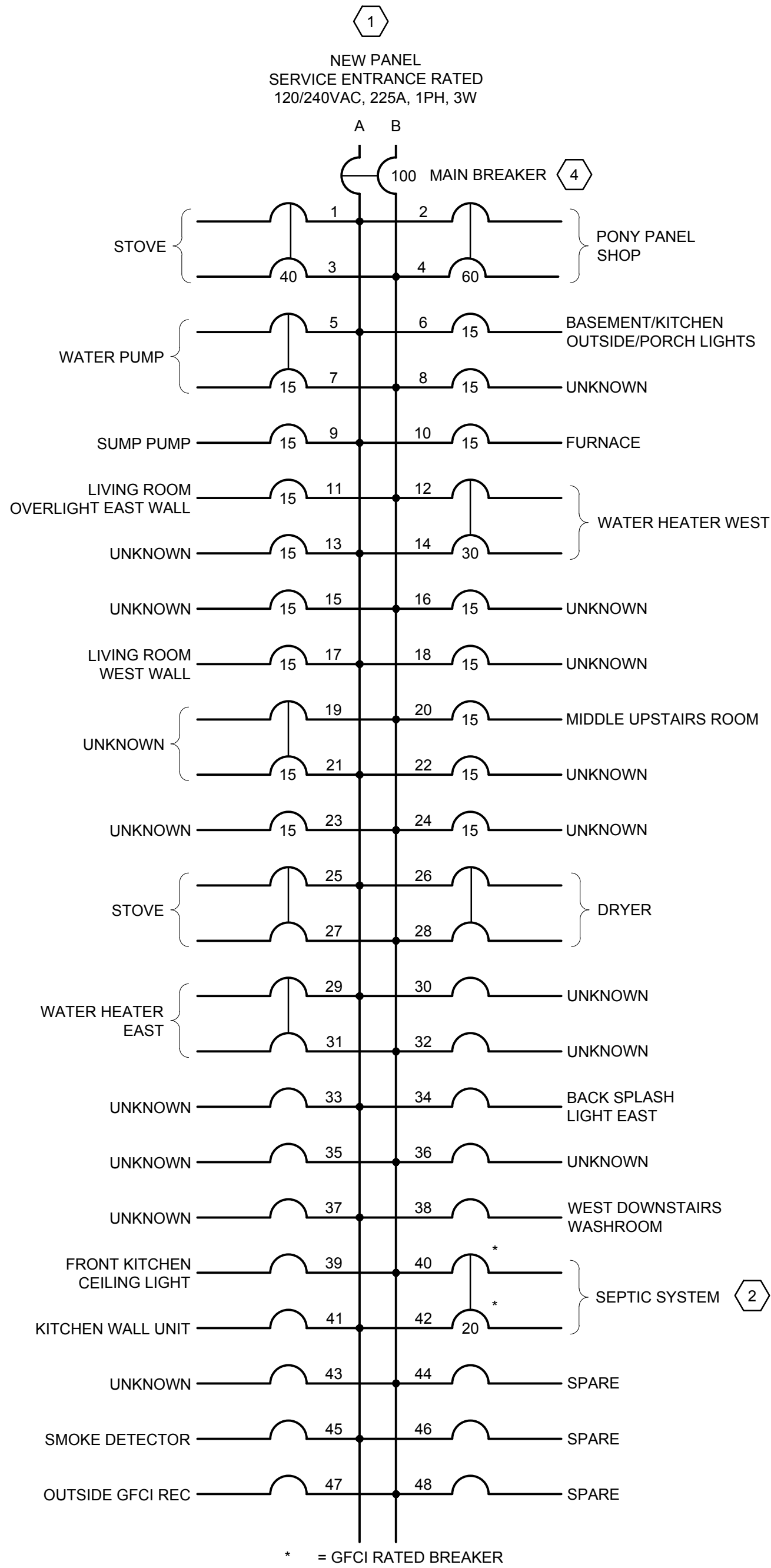




1 EXISTING ELECTRICAL PANEL SCHEDULES  
E-03b NTS



2 EXISTING ELECTRICAL PANELS  
E-03b NTS



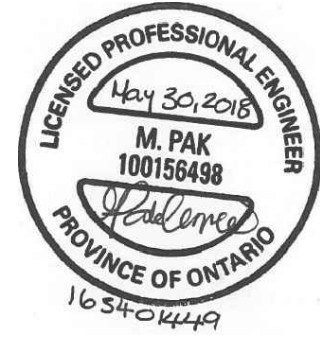
3 NEW PANEL SCHEDULE  
E-03b NTS

#### PRIMARY DRAWING NOTES

- DEMOLISH AND REMOVE EXISTING TWO (2) 120/240VAC, 100A ELECTRICAL PANELS AND REPLACE WITH SINGLE NEW 120/240VAC, 225A PANEL. CONTRACTOR TO EXTEND CIRCUITS TO SUIT. CONTRACTOR TO EXTEND ALL EXISTING CIRCUITS TO ENSURE EXISTING LOADS WITHIN BUILDING REMAIN OPERATIONAL. NEW PANELBOARD TO BE COMPLETE WITH QUANTITIES AND SIZES OF BREAKERS TO MATCH EXISTING PANELBOARD TO ACCOMMODATE ALL EXISTING CIRCUITS. VERIFY EXACT BREAKER SIZES AND QUANTITIES ONSITE PRIOR TO ORDERING.
- PROVIDE AND INSTALL 2P, 20A GFCI BREAKER IN NEW PANEL FOR NEW VENDOR SUPPLIED SMART CONTROL PANEL LOCATED ON OUTDOOR STRUCTURE.
- CONTRACTOR TO CONFIRM BREAKER SIZES BEFORE RE-FEEDING EXISTING CIRCUITS TO NEW PANELBOARD.
- CONTRACTOR TO CONFIRM MAIN FUSING BEFORE SIZING MAIN BREAKER AT NEW SERVICE ENTRANCE RATED ELECTRICAL PANEL.

Canada

Parks Canada Parcs Canada  
Rouge National Urban Park Parc Urbain National de la Rouge



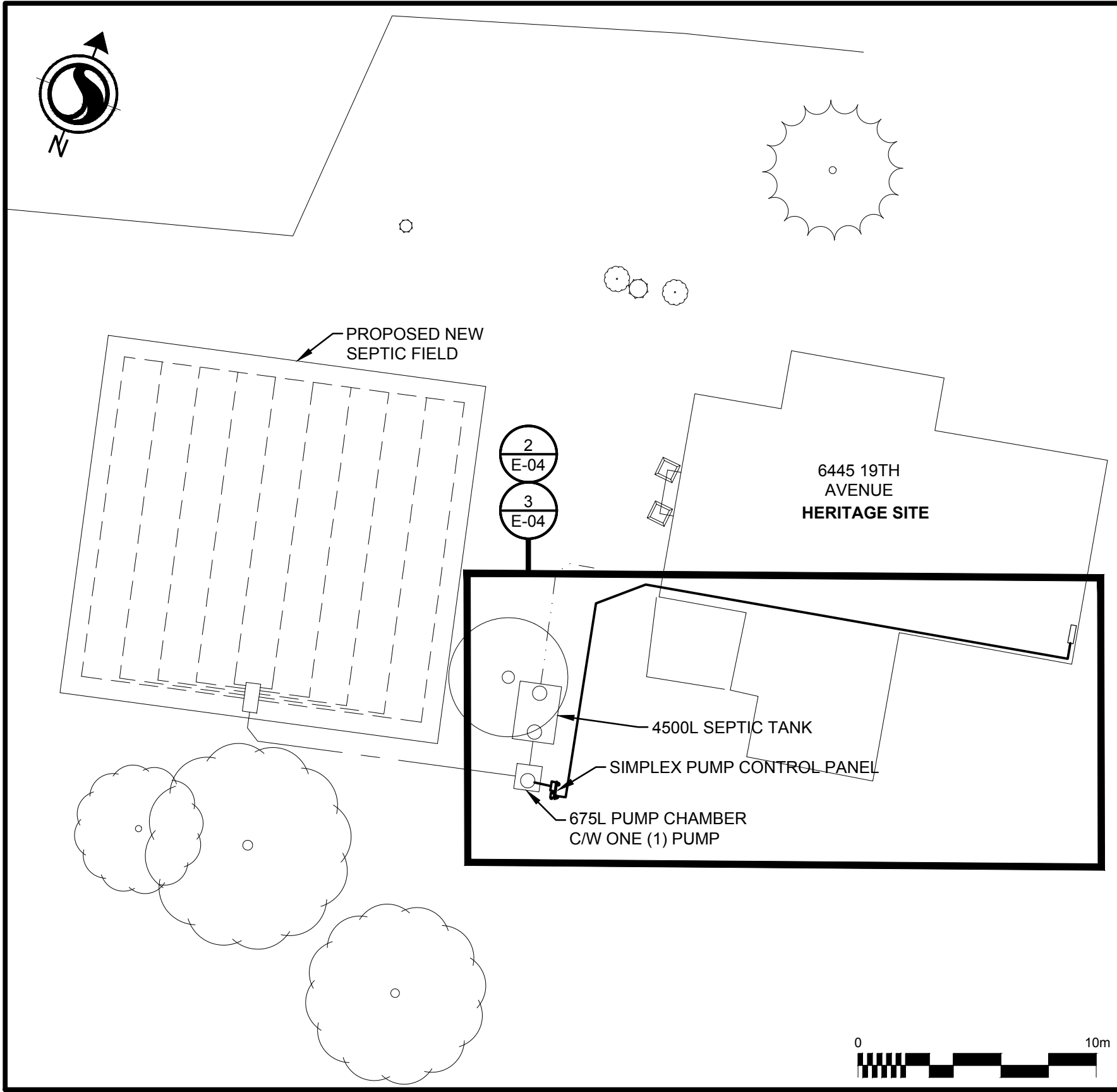
2	05.30.18	ISSUED FOR TENDER	J.C	M.P.M
1	04.25.18	ISSUED FOR 90% REVIEW	J.C	M.P.M
No.	Date	Description	Drawn by Dessiné par	Approved Approuvé

Revision / Revision	
A	Detail number A Numéro de détail
B	Sheet number B Numéro de la feuille
Linear dimensions in millimetres	
Dimensions linéaires en millimètres	
Consultant's Name Nom de l'expert-conseil	
Eng. Stamp Sceau de l'ingénieur	
Project title/Titre du projet	

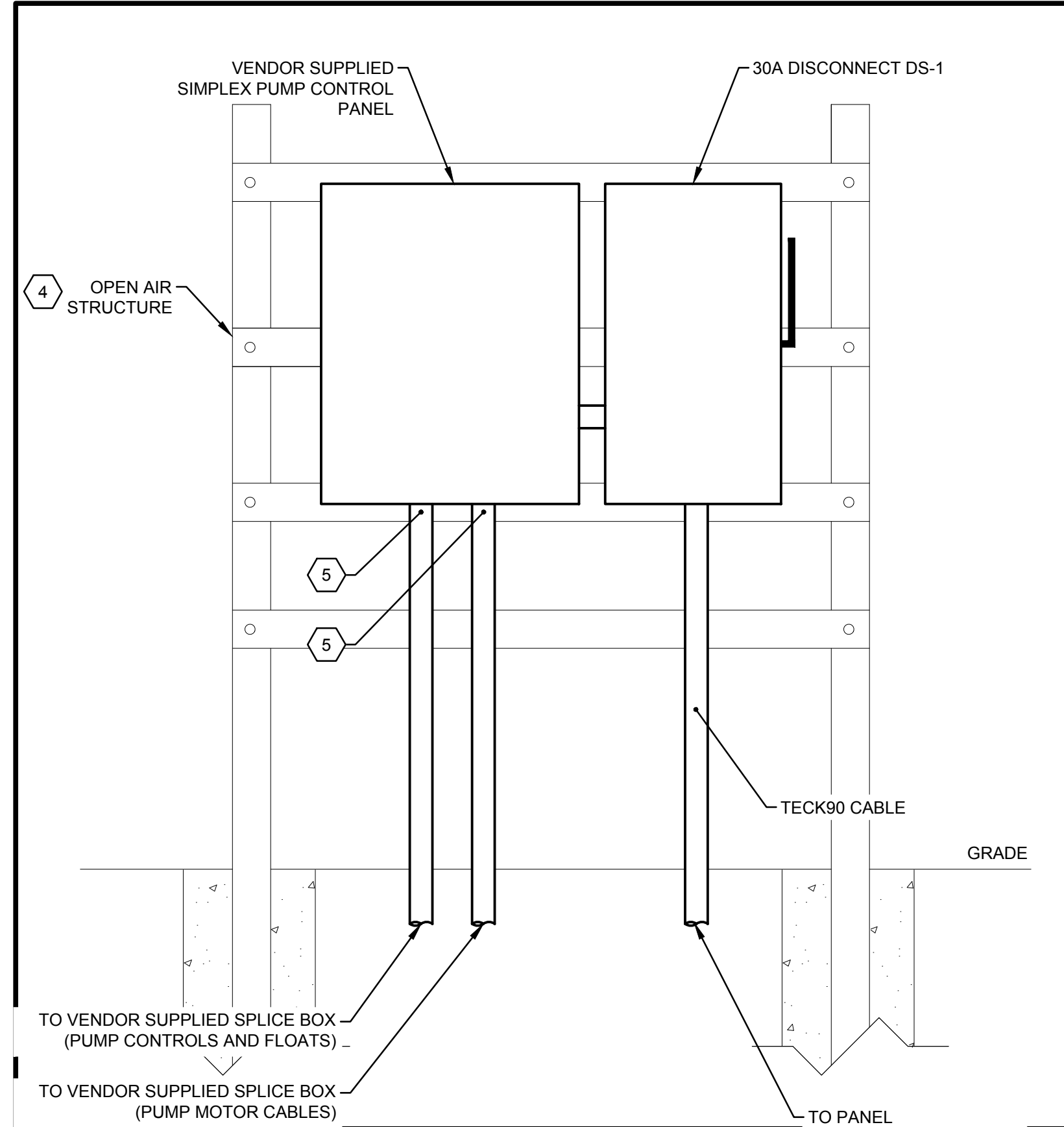
ROUGE NATIONAL URBAN PARK  
SEPTIC SYSTEM REPLACEMENTS

Drawing title/Titre du dessin	
4440 SIDELINE 34 PICKERING EXISTING/NEW PANEL SCHEDULE	
Designed by/Concept par M. PAK MUNRO	Date
Drawn by/Designé par J. CZYZEWSKI	Date
Checked by/Vérifié par E. LAFLEUR	Date
Project No./N° du projet 163401449	Sheet No./ N° de la feuille E-03b
Scale/Échelle AS INDICATED	
Drawing Set No./N° de série du dessin	

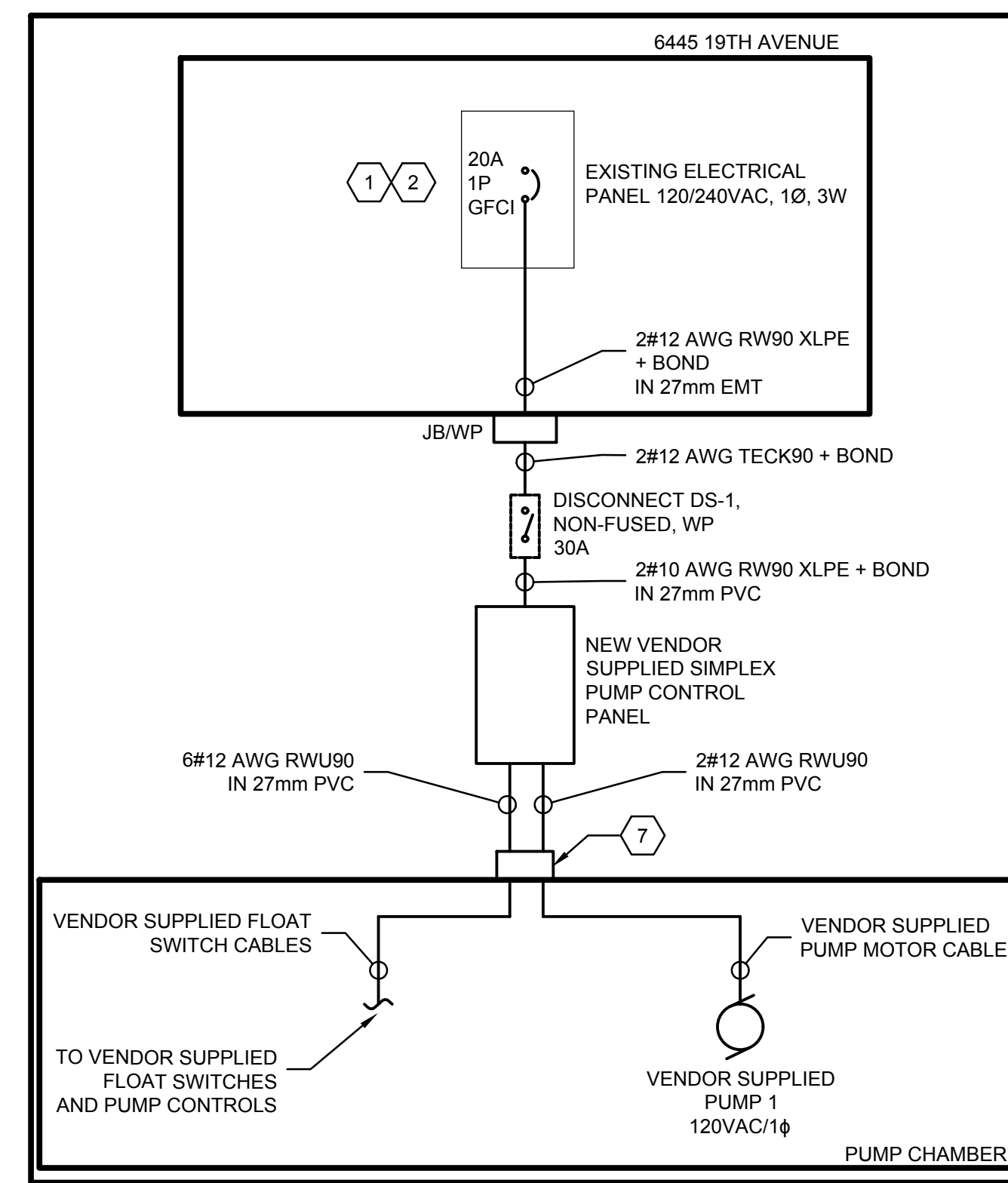




1 ELECTRICAL SITE PLAN  
E-04 1:10m



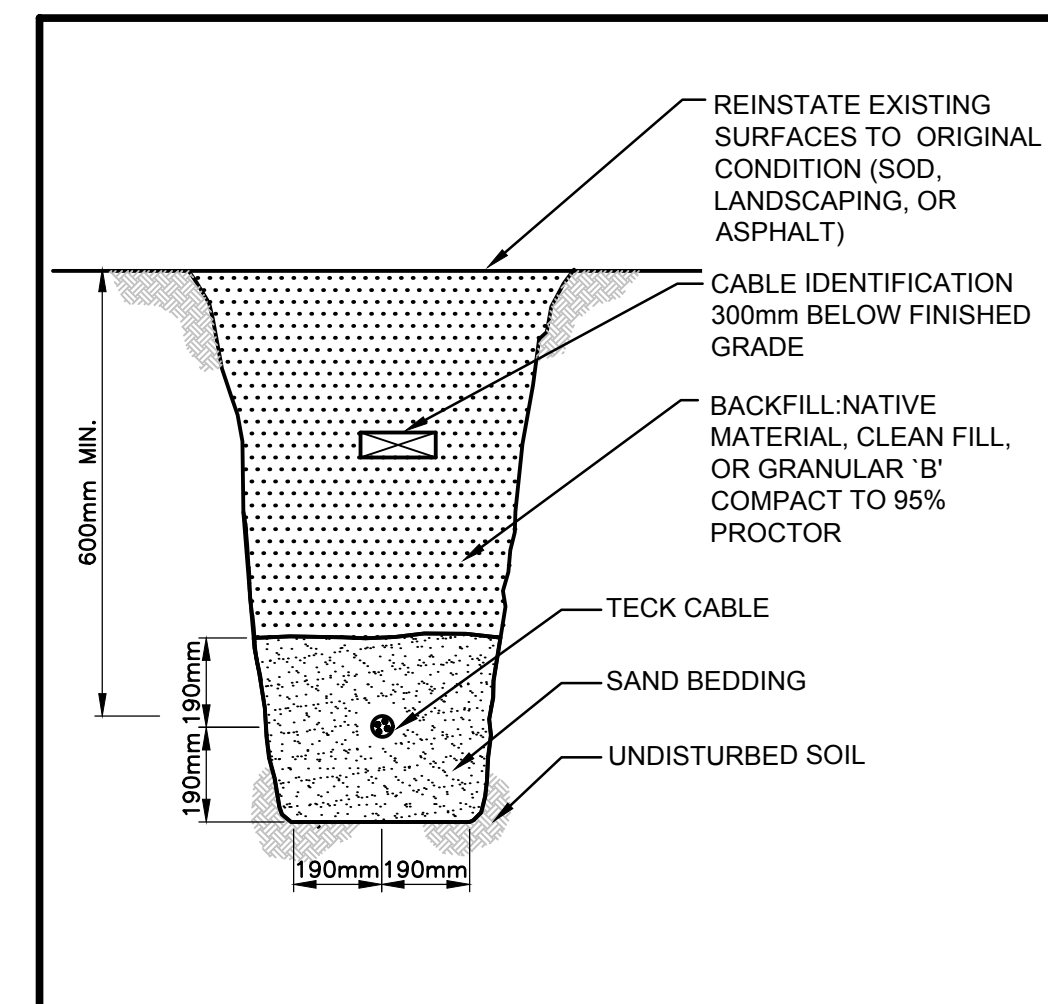
3 OUTDOOR STRUCTURE DETAIL  
E-04 NTS



4 PARTIAL SINGLE LINE DIAGRAM  
E-04 NTS



2 ELECTRICAL EQUIPMENT LAYOUT  
E-04 1:2.5m



5 TYPICAL DIRECT BURIED DETAIL  
E-04 NTS

#### PRIMARY DRAWING NOTES

- EXISTING 120/240VAC, 100A ELECTRICAL PANEL. CONTRACTOR TO DETERMINE EXACT LOCATION.
- PROVIDE AND INSTALL NEW 1P, 20A GFCI BREAKER IN EXISTING PANEL FOR NEW VENDOR SUPPLIED SIMPLEX PANEL LOCATED ON OUTDOOR STRUCTURE.
- ENSURE ALL BUILDING PENETRATIONS ARE SEALED WATER TIGHT. PROVIDE EMT WITHIN BUILDING AND TRANSITION TO TECK FOR OUTDOORS. CONTRACTOR TO DETERMINE BEST POSSIBLE CONDUIT ROUTING. ROUTING SHOWN IS FOR DIAGRAMMATIC PURPOSES ONLY.
- CONTRACTOR TO PROVIDE, FABRICATE AND INSTALL EXTERIOR UNISTRUT OPEN-AIR STRUCTURE SUITABLE FOR MOUNTING OF EXTERIOR EQUIPMENT
- AFTER WIRING, SEAL ENDS OF CONDUIT WITH "DUCT SEAL" OR EQUIVALENT SUITABLE FOR OUTDOOR USE.
- SLOPE HORIZONTAL CONDUIT RUNS SO AS TO DRAIN MOISTURE INTO WELL.
- NEMA 6P RATED SPLICE BOX (BY OTHERS) LOCATED OUTSIDE OF PUMP ACCESS CHIMNEY C/W BEAD OF RTV SEALANT AROUND LID AND ANY OPENINGS.

#### GENERAL NOTES

- THE BUILDING AT THIS SITE IS CLASSIFIED HERITAGE. VISIT SITE PRIOR TO SUBMITTING FOR TENDER BID TO DETERMINE SITE CONDITIONS SUCH AS BUT NOT LIMITED TO EXACT LOCATION OF EXISTING PANEL, PENETRATIONS INTO EXISTING BUILDING ETC.
- CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS, INCLUDING BUT NOT LIMITED TO ULTRASONIC SCANNING OR X-RAY SCANNING, TO AVOID DAMAGING OR DEMOLISHING ALL SITE THAT ARE CLASSIFIED AS HERITAGE SITES.

Canada

Parks Canada Parcs Canada  
Rouge National Urban Park Parc Urbain National de la Rouge



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2	05.30.18	ISSUED FOR TENDER	J.C.	M.P.M.
1	04.25.18	ISSUED FOR 90% REVIEW	J.C.	M.P.M.

Revision / Revision

A	Detail number	A Numéro de détail
B	Sheet number	B Numéro de la feuille

Linear dimensions in millimetres Dimensions linéaires en millimètres

Consultant's Name Nom de l'expert-conseil

**Stantec**  
Stantec Consulting Ltd.

1331-400, Clyde Avenue  
Ontario (Ontario) M2C 1G4  
Telephone : 613 722 4420  
Fax : 613 722 2799

Eng. Stamp  
Sceau de l'ingénieur

Project Title/Titre du projet

## ROUGE NATIONAL URBAN PARK SEPTIC SYSTEM REPLACEMENTS

Drawing Title/Titre du dessin

## 6445 19th AVENUE MARKHAM ELECTRICAL SITE PLAN AND DETAILS

Designed by/Concept par

M. PAK MUNRO

Date

Drawn by/Designé par

J. CZYZEWSKI

Date

Checked by/Vérifié par

E. LAFLEUR

Date

Project No./N° du projet

163401449

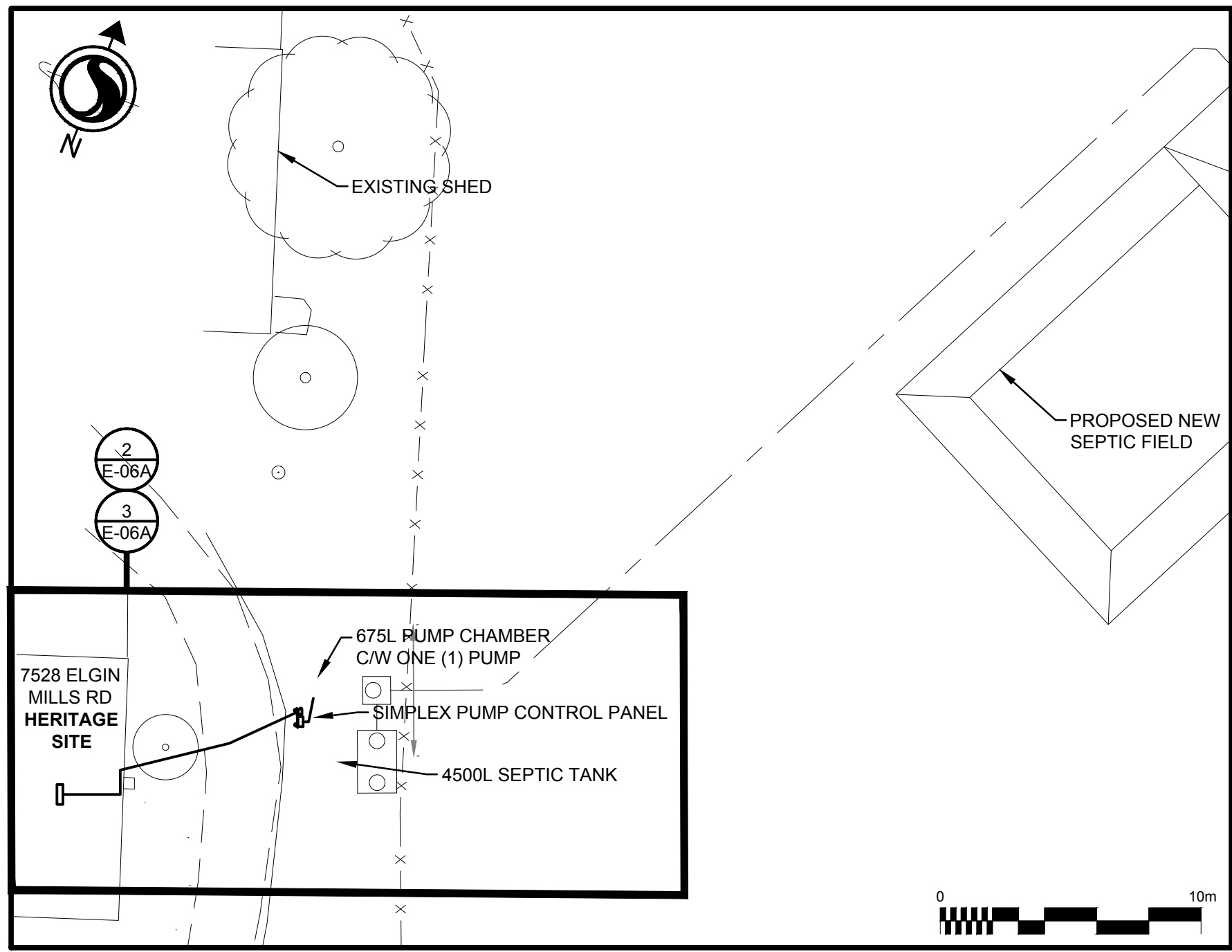
Scale/Échelle

AS INDICATED

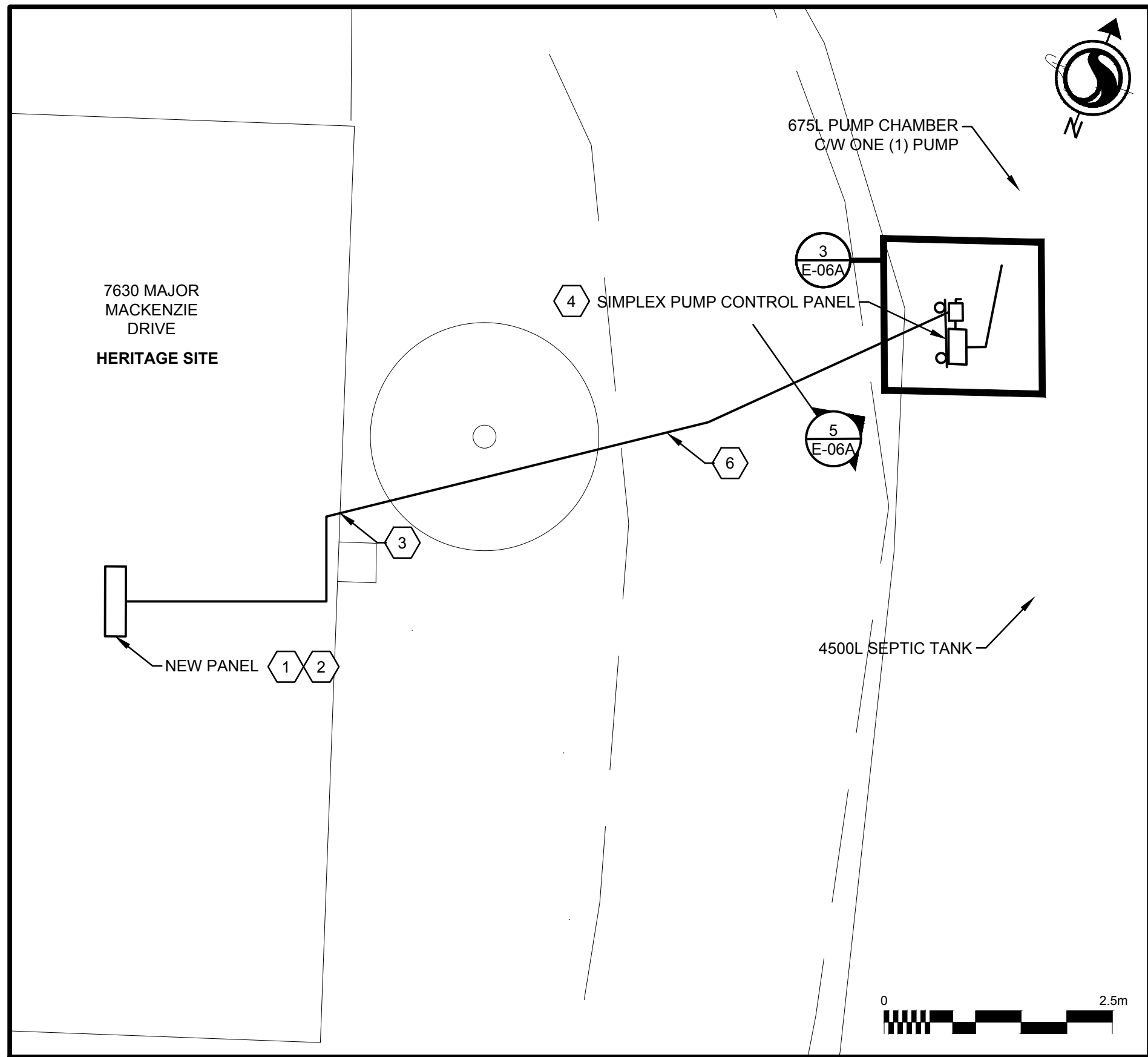
Drawing Set No./N° de série du dessin

E-04

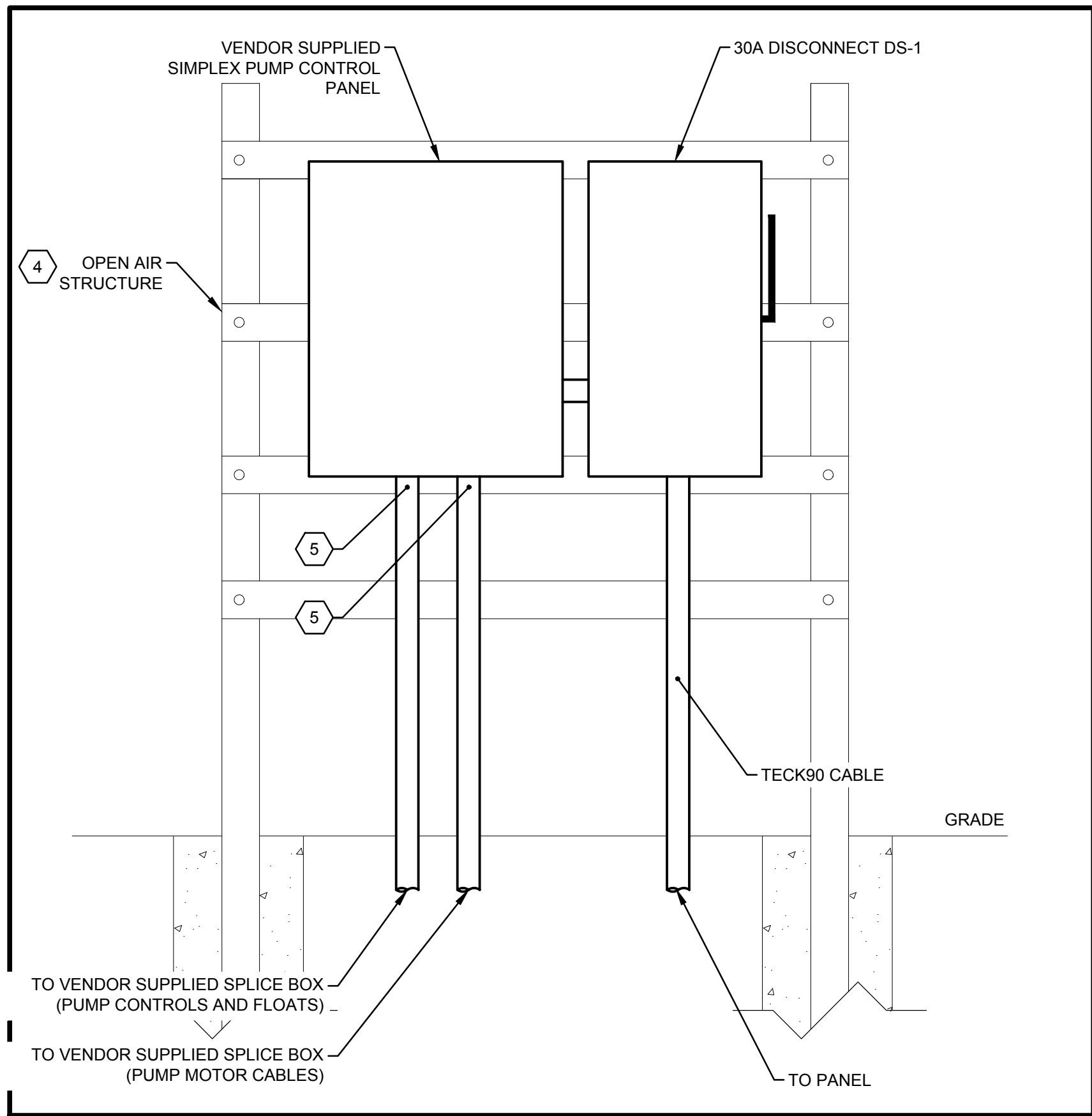




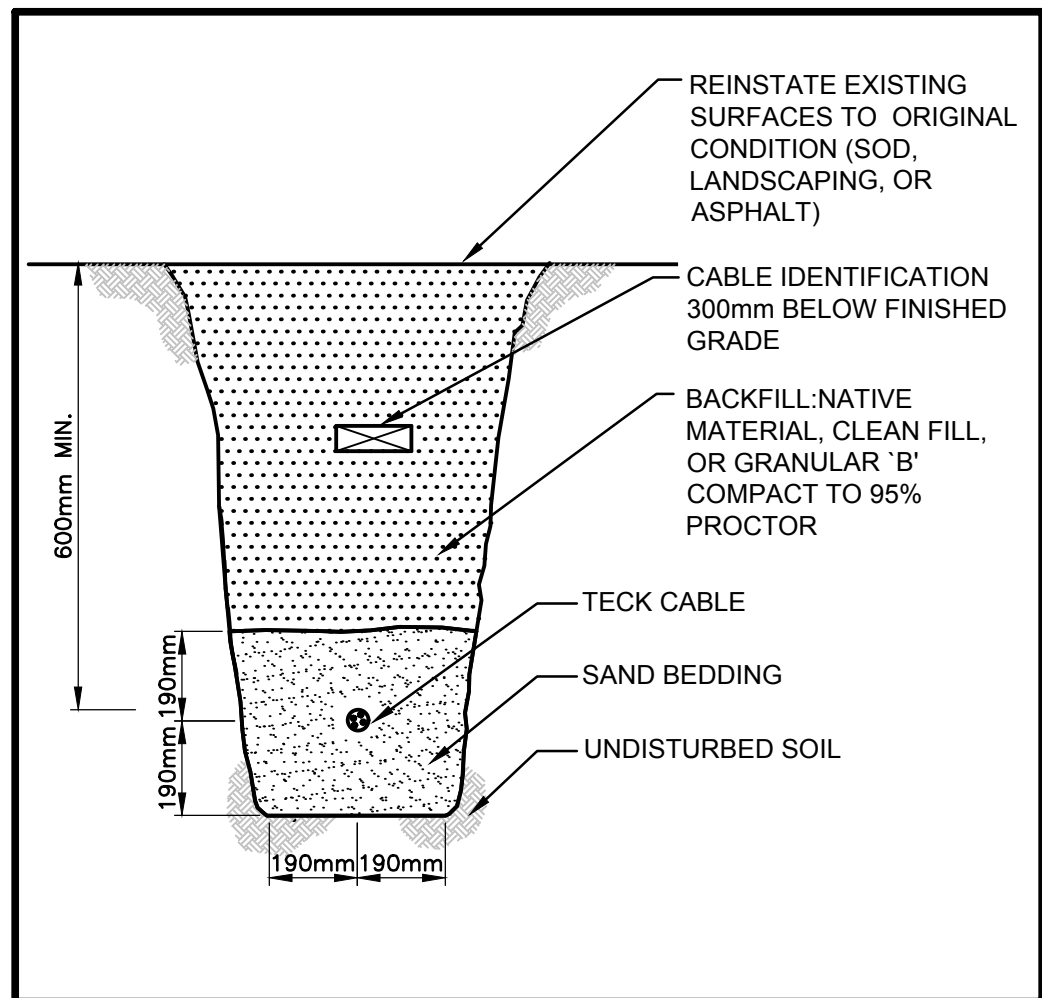
1 ELECTRICAL SITE PLAN  
E-06a 1:10m



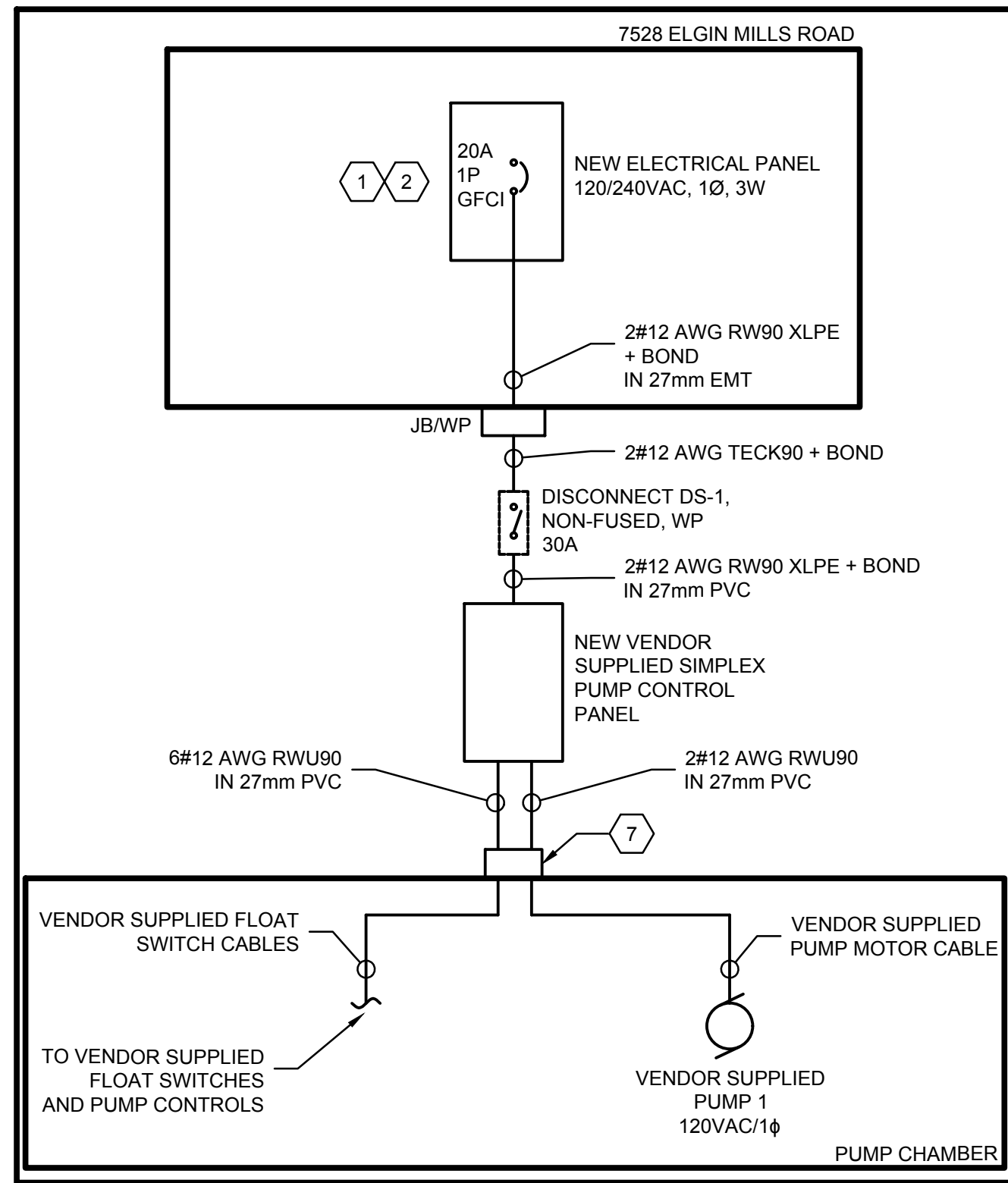
2 ELECTRICAL EQUIPMENT LAYOUT  
E-06a 1:2.5m



3 OUTDOOR STRUCTURE DETAIL  
E-06a NTS



5 TYPICAL DIRECT BURIED DETAIL  
E-06a NTS



4 PARTIAL SINGLE LINE DIAGRAM  
E-06a NTS

#### GENERAL NOTES

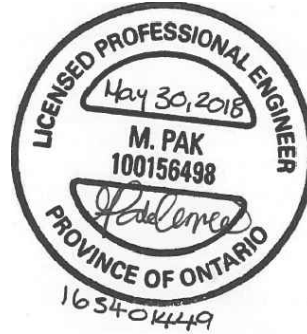
- THE BUILDING AT THIS SITE IS CLASSIFIED HERITAGE. VISIT SITE PRIOR TO SUBMITTING FOR TENDER BID TO DETERMINE SITE CONDITIONS SUCH AS BUT NOT LIMITED TO EXACT LOCATION OF EXISTING PANEL, PENETRATIONS INTO EXISTING BUILDING ETC.
- CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS, INCLUDING BUT NOT LIMITED TO ULTRASONIC SCANNING OR X-RAY SCANNING, TO AVOID DAMAGING OR DEMOLISHING ALL SITE THAT ARE CLASSIFIED AS HERITAGE SITES.

#### PRIMARY DRAWING NOTES

- DEMOLISH AND REMOVE EXISTING 120/240VAC, 100A FUSE ELECTRICAL PANEL AND REPLACE WITH NEW 120/240VAC, 100A BREAKER PANEL. CONTRACTOR TO EXTEND CIRCUITS TO SUIT. CONTRACTOR TO PROVIDE AND INSTALL PANELBOARD WITH ENOUGH CAPACITY AND BREAKERS TO ACCOMMODATE ALL EXISTING CIRCUITS WITHIN BUILDING. SEE DRAWING E-06b FOR DETAILS.
- PROVIDE AND INSTALL 1P, 20A GFCI BREAKER IN NEW PANEL FOR NEW VENDOR SUPPLIED SIMPLEX PANEL LOCATED ON OUTSIDE OF BUILDING.
- ENSURE ALL BUILDING PENETRATIONS ARE SEALED WATER TIGHT. PROVIDE EMT WITHIN BUILDING AND TRANSITION TO TECK FOR OUTDOORS. CONTRACTOR TO DETERMINE BEST POSSIBLE CONDUIT ROUTING. ROUTING SHOWN IS FOR DIAGRAMMATIC PURPOSES ONLY.
- CONTRACTOR TO PROVIDE, FABRICATE AND INSTALL EXTERIOR UNISTRUT OPEN-AIR STRUCTURE SUITABLE FOR MOUNTING OF EXTERIOR EQUIPMENT
- AFTER WIRING, SEAL ENDS OF CONDUIT WITH "DUCT SEAL" OR EQUIVALENT SUITABLE FOR OUTDOOR USE.
- SLOPE HORIZONTAL CONDUIT RUNS SO AS TO DRAIN MOISTURE INTO WELL.
- NEMA 6P RATED SPLICE BOX (BY OTHERS) LOCATED OUTSIDE OF PUMP ACCESS CHIMNEY C/W BEAD OF RTV SEALANT AROUND LID AND ANY OPENINGS.

Canada

Parks Canada Parcs Canada  
Rouge National Urban Park Parc Urbain National de la Rouge



No.	Date	Description	Drawn by Dessiné par	Approved Approuvé
2	05.30.18	ISSUED FOR TENDER	J.C.	M.P.M.
1	04.25.18	ISSUED FOR 90% REVIEW	J.C.	M.P.M.

Revision / Revision		
A	Detail number	A Numéro de détail
B	Sheet number	B Numéro de la feuille

Linear dimensions in millimetres	Dimensions linéaires en millimètres
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Consultant's Name Nom de l'expert-conseil	Eng. Stamp Sceau de l'ingénieur
<b>Stantec</b> Stantec Consulting Ltd. 1531-400, Clyde Avenue Ottawa (Ontario) K2C 7G4 Telephone : 613 722 4420 Fax : 613 722 2799	

Project title/Titre du projet

#### ROUGE NATIONAL URBAN PARK SEPTIC SYSTEM REPLACEMENTS

Drawing title/Titre du dessin  
7528 ELGIN MILLS ROAD  
CITY OF MARKHAM  
ELECTRICAL SITE PLAN AND DETAILS

Designed by/Concept par M. PAK MUNRO	Date
Drawn by/Designé par J. CZYZEWSKI	Date
Checked by/Vérifié par E. LAFLEUR	Date
Project No./N° du projet 163401449	Scale/Échelle AS INDICATED
Drawing Set No./N° de série du dessin	Sheet No./ N° de la feuille E-06a

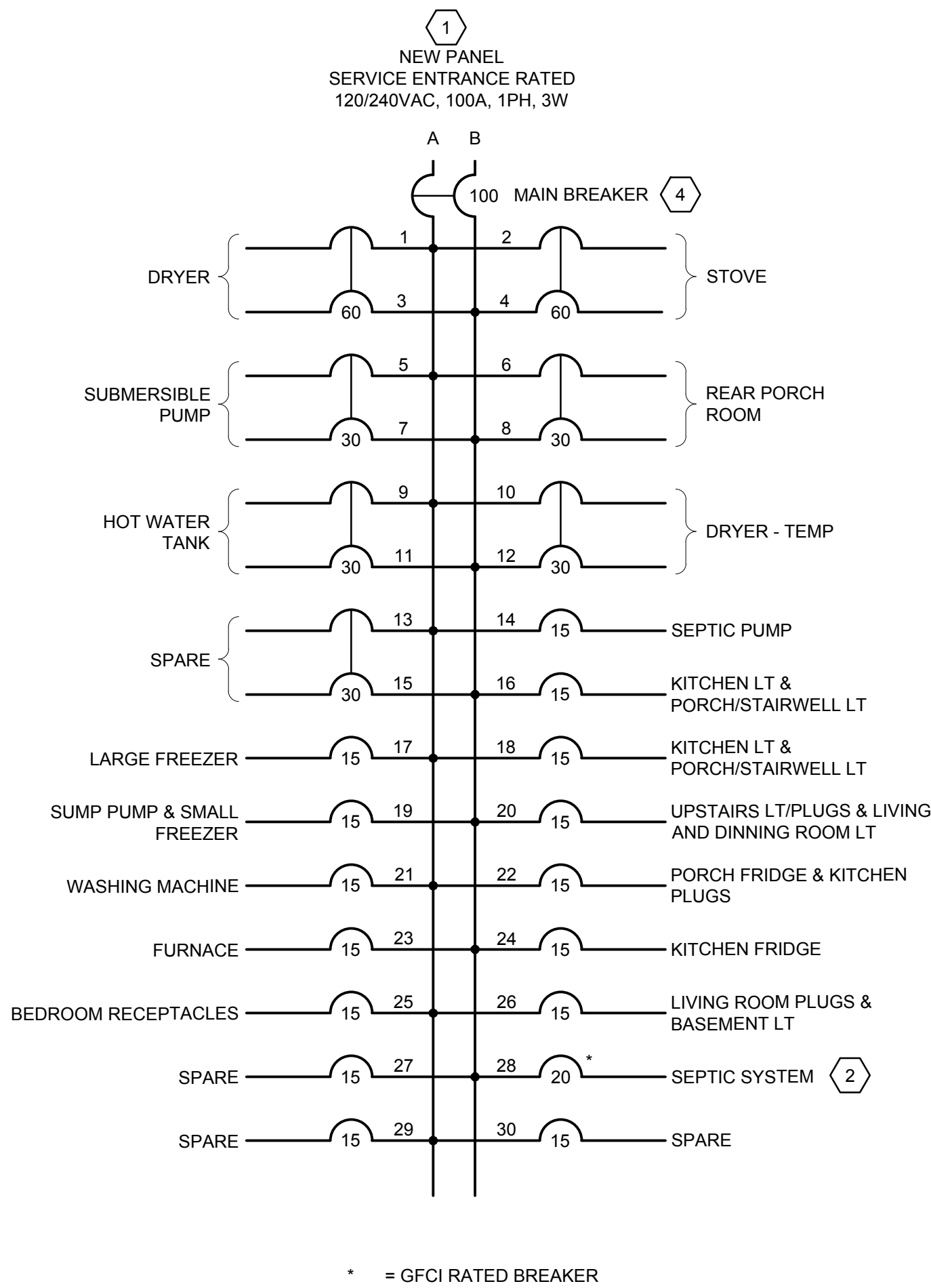




1 EXISTING ELECTRICAL FUSE PANEL  
E-06b NTS



2 EXISTING ELECTRICAL FUSE PANEL SCHEDULE  
E-06b NTS



3 NEW PANEL SCHEDULE  
E-06b NTS

- PRIMARY DRAWING NOTES**
- DEMOLISH AND REMOVE EXISTING 120/240VAC, 100A ELECTRICAL FUSE PANEL AND REPLACE WITH SINGLE NEW 120/240VAC, 100A BREAKER PANEL. MEASURE AVAILABLE SPACE PRIOR TO ORDERING PANEL TO ENSURE NEW PANEL MAY BE PHYSICALLY INSTALLED IN EXISTING LOCATION. CONTRACTOR TO EXTEND ALL EXISTING CIRCUITS TO ENSURE EXISTING LOADS WITHIN BUILDING REMAIN OPERATIONAL. NEW PANELBOARD TO BE COMPLETE WITH QUANTITIES AND SIZES OF BREAKERS TO MATCH EXISTING PANELBOARD TO ACCOMMODATE ALL EXISTING CIRCUITS. VERIFY EXACT BREAKER SIZES AND QUANTITIES ONSITE PRIOR TO ORDERING. RE-LOCATE NEW PANELBOARD TO NEW LOCATION TO PROVIDE 1m CLEARANCE IN FRONT OF NEW PANELBOARD. EXTEND CONDUIT AND WIRING TO SUIT. INCLUDE THE RELOCATION OF MINI LOAD CENTER C/W ASSOCIATED WIRING TO PROVIDE SUFFICIENT PHYSICAL SPACE FOR THE INSTALLATION OF NEW PANELBOARD. INCLUDE IN TENDER PRICE TO PHYSICALLY RELOCATE THE PANELBOARD 1.5m FROM ORIGINAL LOCATION.
  - PROVIDE AND INSTALL 1P, 20A GFCI BREAKER IN NEW PANEL FOR NEW VENDOR SUPPLIED SIMPLEX PANEL LOCATED ON OUTSIDE OF BUILDING.
  - CONTRACTOR TO CONFIRM FUSE SIZES BEFORE RE-FEEDING EXISTING CIRCUITS TO NEW PANELBOARD.
  - CONTRACTOR TO CONFIRM MAIN FUSING BEFORE SIZING MAIN BREAKER AT NEW SERVICE ENTRANCE RATED ELECTRICAL PANEL.

Canada

Parks Canada  
Rouge National Urban Park

Parcs Canada  
Parc Urbain National de la Rouge

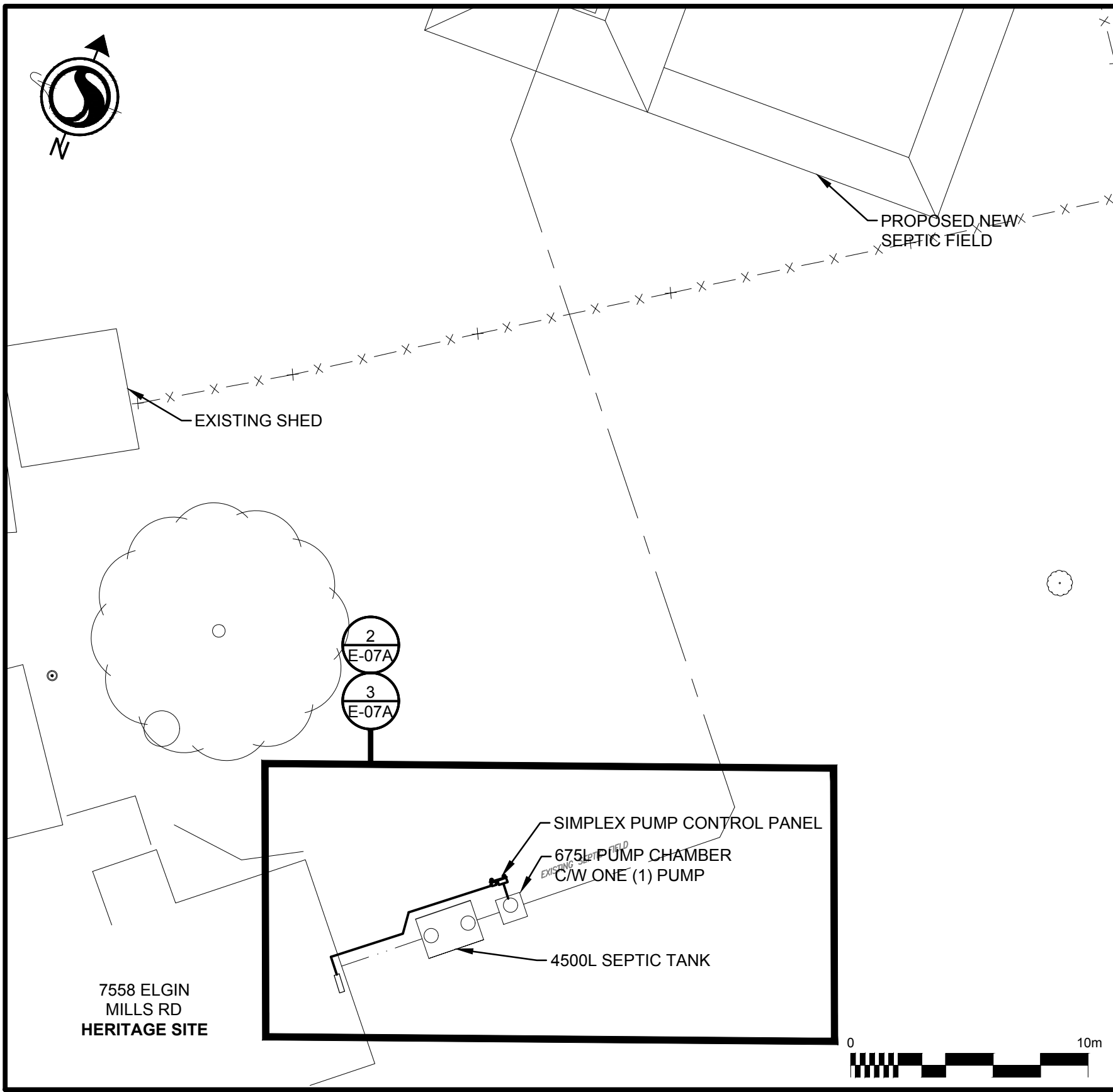


2	05.30.18	ISSUED FOR TENDER	J.C	M.P.M
1	04.25.18	ISSUED FOR 90% REVIEW	J.C	M.P.M
No.	Date	Description	Drawn by Dessiné par	Approved Approuvé

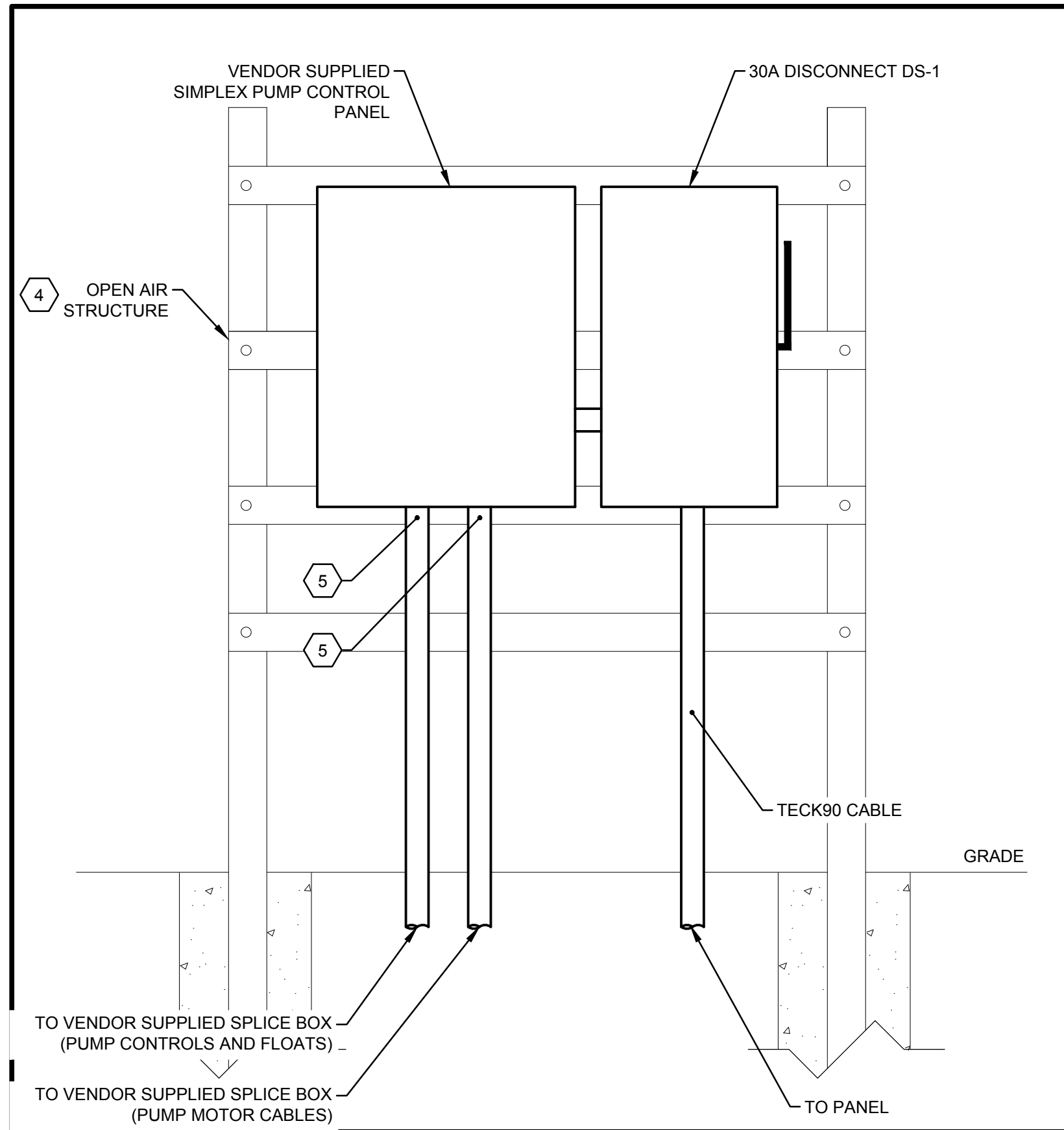
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Linear dimensions in millimetres	
Dimensions linéaires en millimètres	
Consultant's Name Nom de l'expert-conseil	
Eng. Stamp Sceau de l'ingénieur	

Project title/Titre du projet	
ROUGE NATIONAL URBAN PARK SEPTIC SYSTEM REPLACEMENTS	
Drawing title/Titre du dessin	
7528 ELGIN MILLS ROAD CITY OF MARKHAM EXISTING/NEW PANEL SCHEDULES	
Designed by/Concept par	Date
M. PAK MUNRO	
Drawn by/Designé par	Date
J. CZYZEWSKI	
Checked by/Vérifié par	Date
E. LAFLEUR	
Project No./N° du projet	Scale/Échelle
163401449	AS INDICATED
Drawing Set No./N° de série du dessin	Sheet No./ N° de la feuille
	E-06b

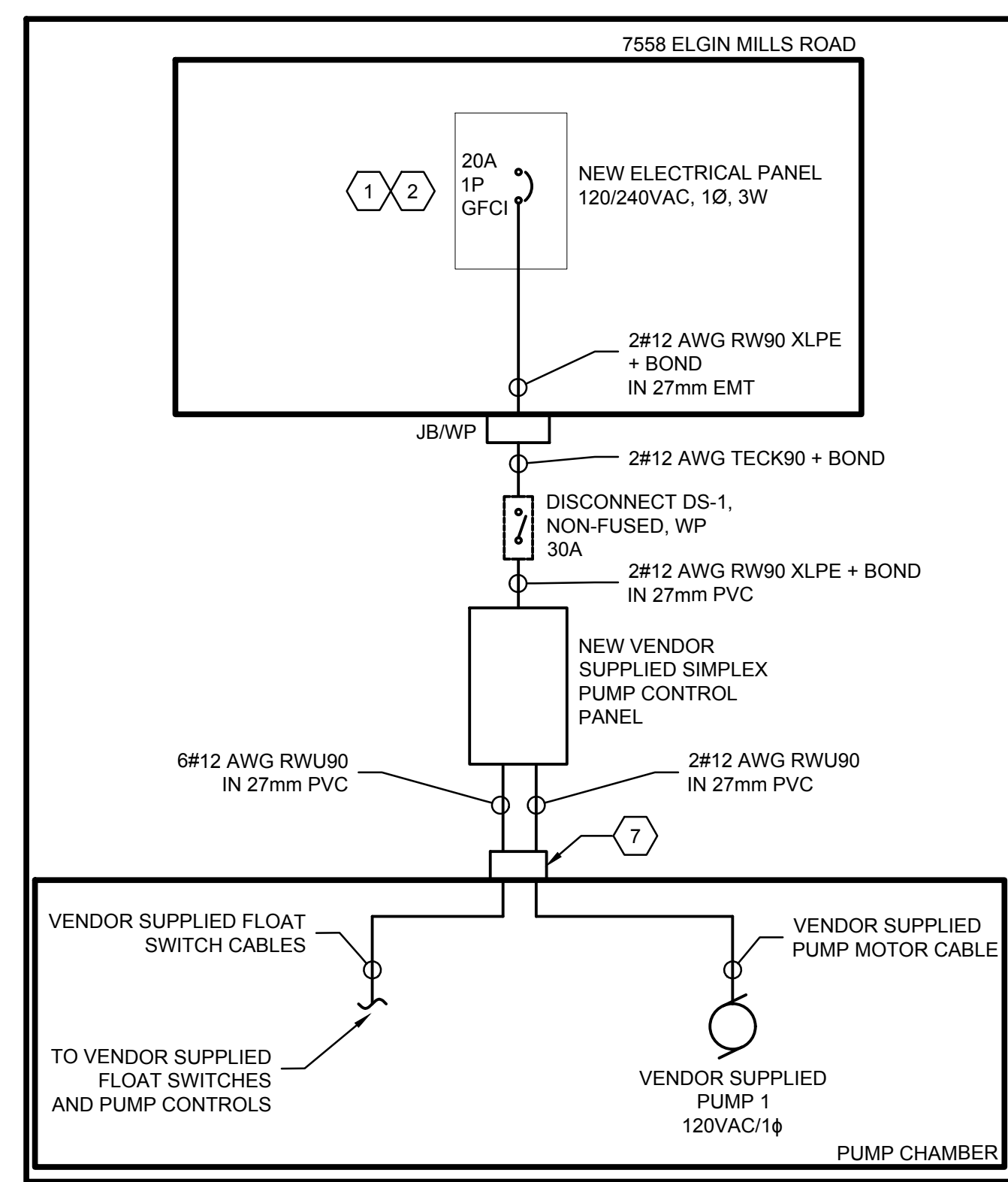




1 ELECTRICAL SITE PLAN  
E-07a 1:10m



3 OUTDOOR STRUCTURE DETAIL  
E-07a NTS



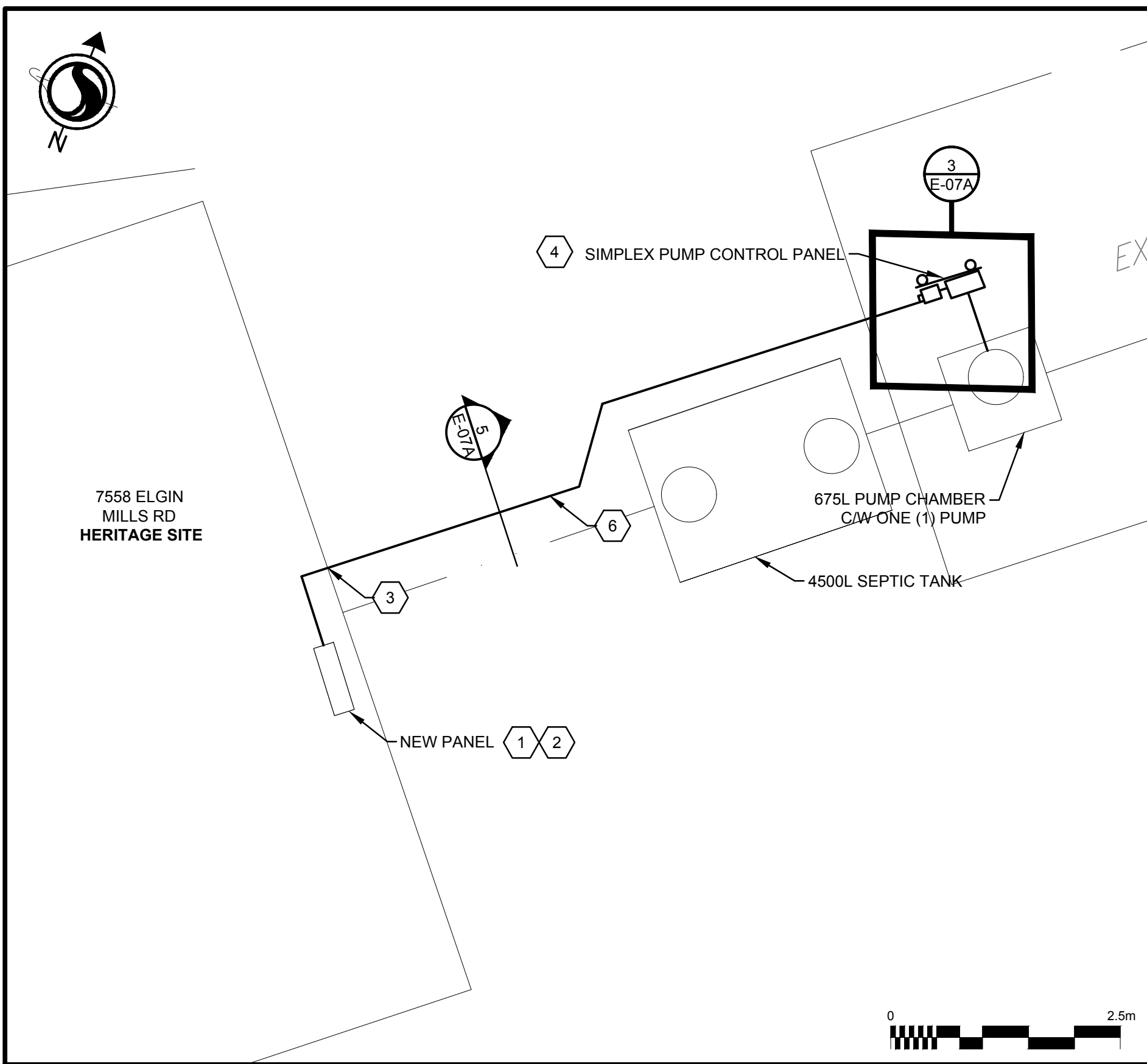
4 PARTIAL SINGLE LINE DIAGRAM  
E-07a NTS

#### GENERAL NOTES

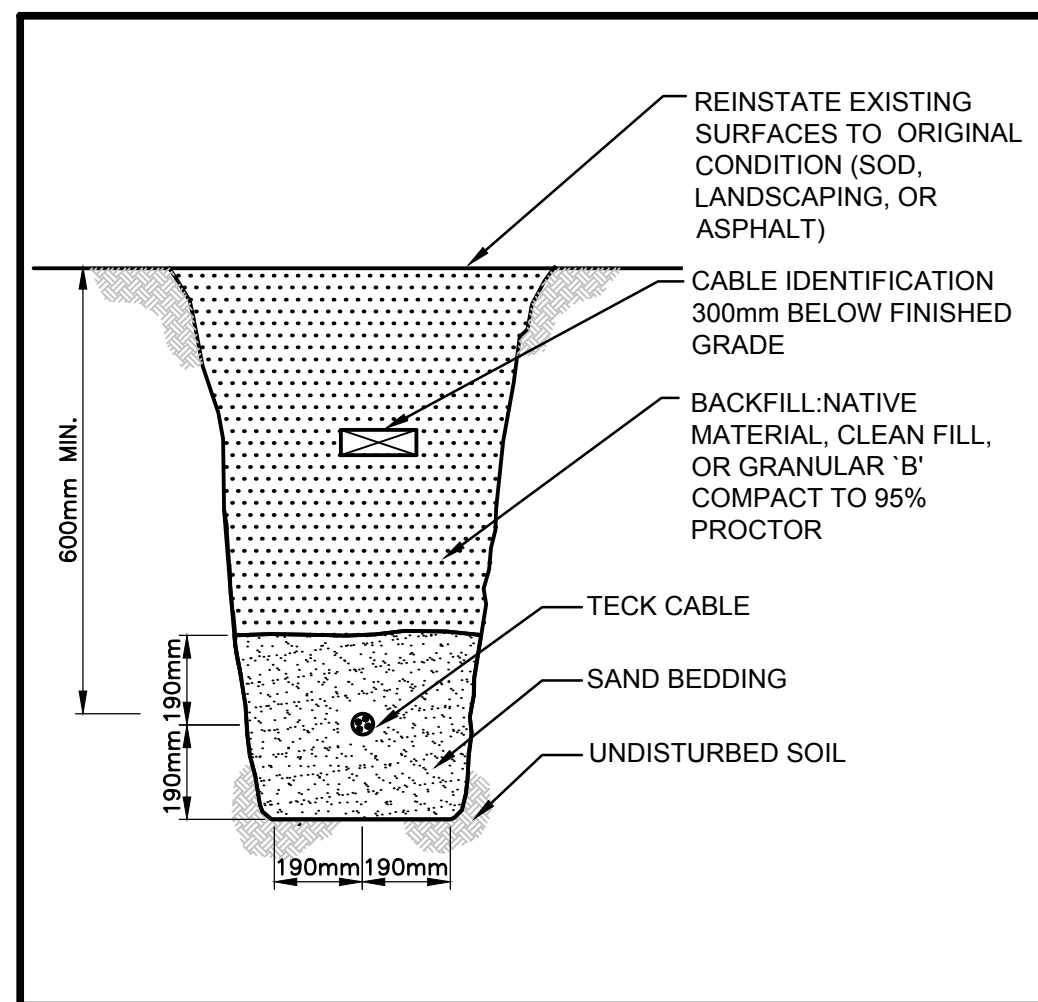
- THE BUILDING AT THIS SITE IS CLASSIFIED HERITAGE. VISIT SITE PRIOR TO SUBMITTING FOR TENDER BID TO DETERMINE SITE CONDITIONS SUCH AS BUT NOT LIMITED TO EXACT LOCATION OF EXISTING PANEL, PENETRATIONS INTO EXISTING BUILDING ETC.
- CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS, INCLUDING BUT NOT LIMITED TO ULTRASONIC SCANNING OR X-RAY SCANNING, TO AVOID DAMAGING OR DEMOLISHING ALL SITE THAT ARE CLASSIFIED AS HERITAGE SITES.

#### PRIMARY DRAWING NOTES

- EXISTING 120/240VAC, 100A ELECTRICAL PANEL. CONTRACTOR TO DETERMINE EXACT LOCATION.
- PROVIDE AND INSTALL NEW 1P, 20A GFCI BREAKER IN NEW PANEL FOR NEW VENDOR SUPPLIED SIMPLEX PANEL LOCATED ON OUTSIDE OF BUILDING.
- ENSURE ALL BUILDING PENETRATIONS ARE SEALED WATER TIGHT. PROVIDE EMT WITHIN BUILDING AND TRANSITION TO TECK FOR OUTDOORS. CONTRACTOR TO DETERMINE BEST POSSIBLE CONDUIT ROUTING. ROUTING SHOWN IS FOR DIAGRAMMATIC PURPOSES ONLY.
- CONTRACTOR TO PROVIDE, FABRICATE AND INSTALL EXTERIOR UNISTRUT OPEN-AIR STRUCTURE SUITABLE FOR MOUNTING OF EXTERIOR EQUIPMENT
- AFTER WIRING, SEAL ENDS OF CONDUIT WITH "DUCT SEAL" OR EQUIVALENT SUITABLE FOR OUTDOOR USE.
- SLOPE HORIZONTAL CONDUIT RUNS SO AS TO DRAIN MOISTURE INTO WELL.
- SPLCE BOX (BY OTHERS) LOCATED OUTSIDE OF PUMP ACCESS CHIMNEY C/W BEAD OF RTV SEALANT AROUND LID AND ANY OPENINGS.



2 ELECTRICAL EQUIPMENT LAYOUT  
E-07a 1:2.5m



5 TYPICAL DIRECT BURIED DETAIL  
E-07a NTS

Canada

Parks Canada Parcs Canada  
Rouge National Urban Park Parc Urbain National de la Rouge

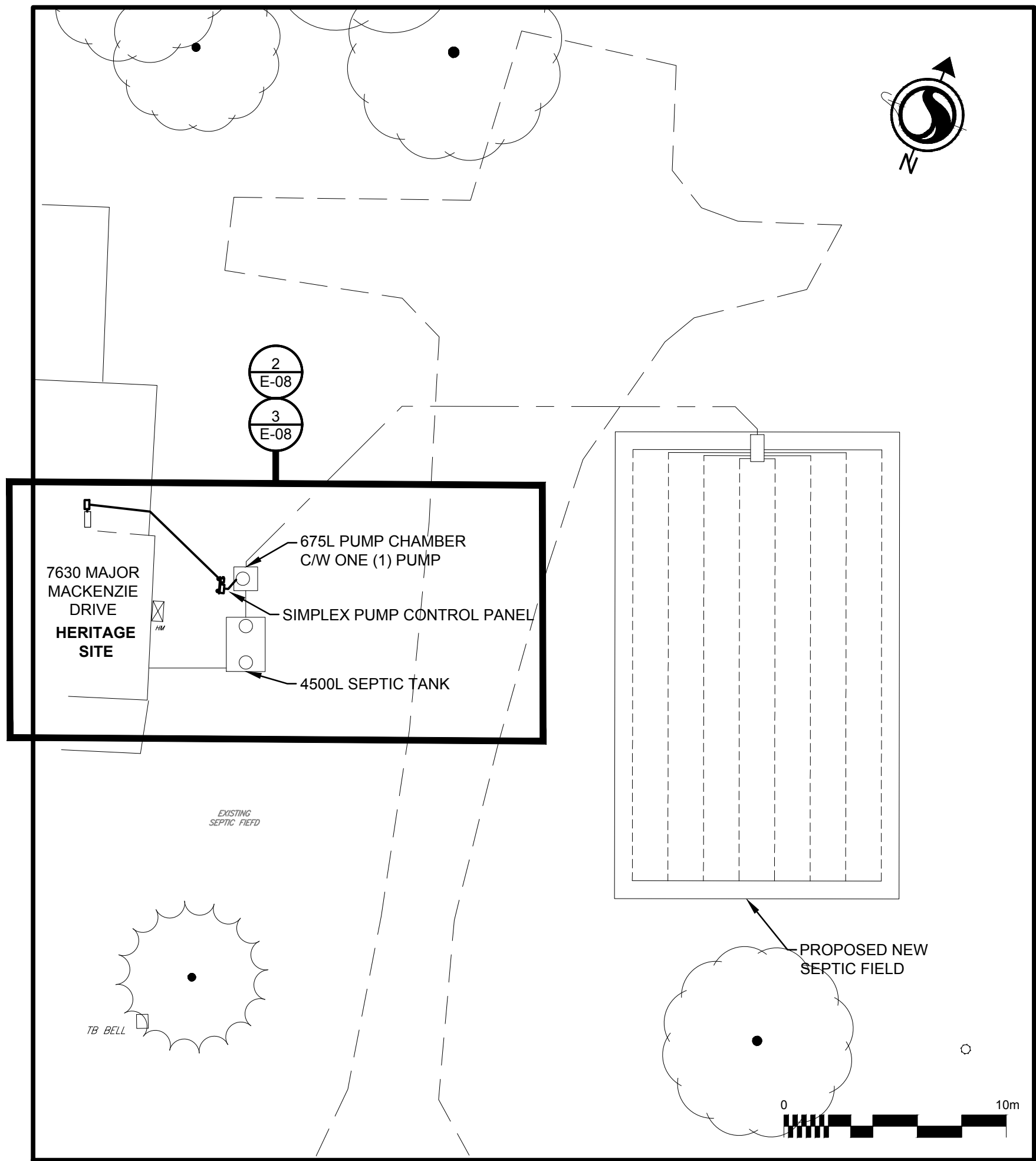


1	04.25.18	ISSUED FOR 90% REVIEW	J.C.	M.P.M.	
No.	Date	Description	Drawn by Dessiné par	Approved Approuvé	

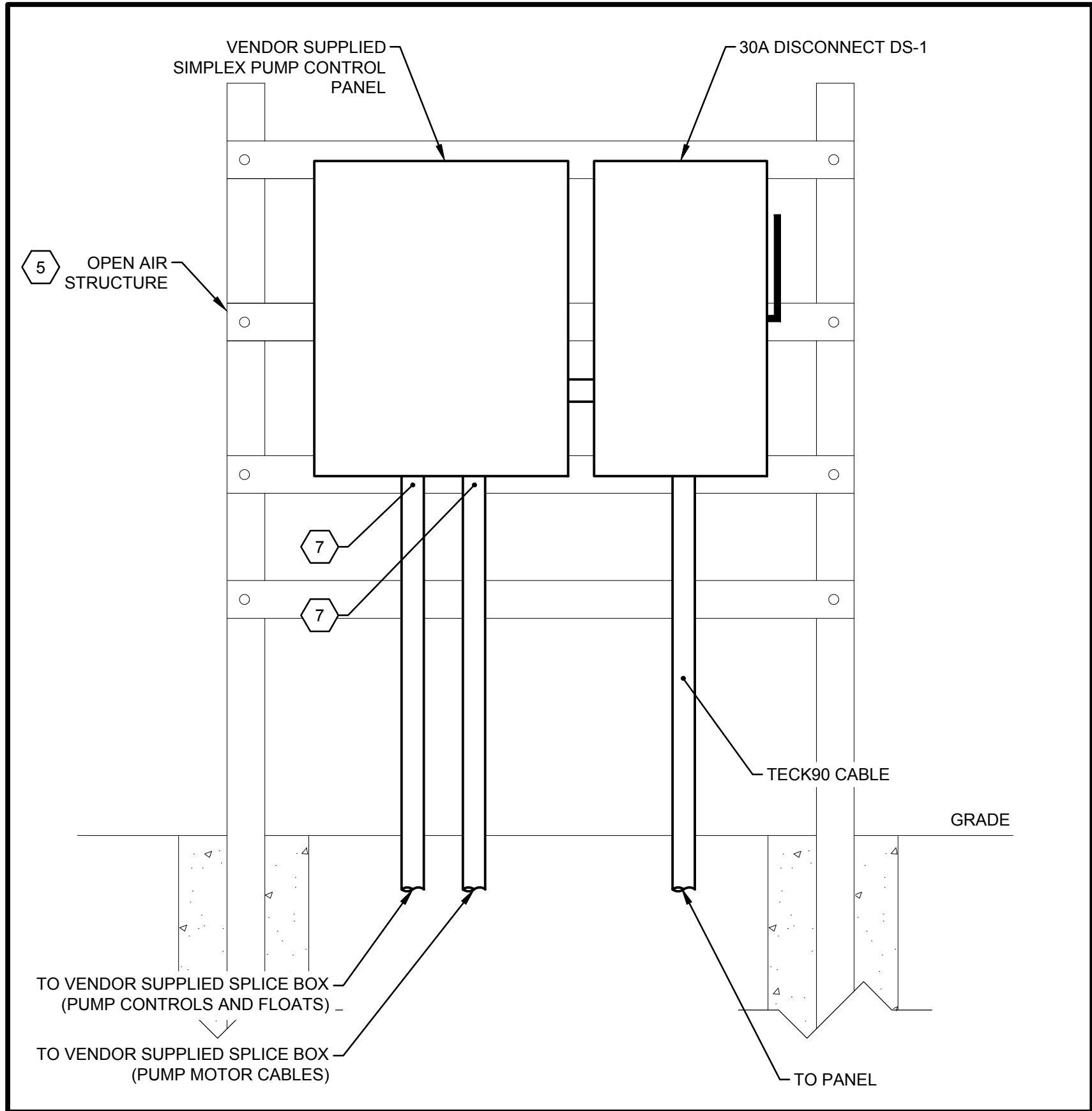
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Linear dimensions in millimetres	
Dimensions linéaires en millimètres	
Consultant's Name Nom de l'expert-conseil	
Eng. Stamp Sceau de l'ingénieur	

Project title/Titre du projet	
ROUGE NATIONAL URBAN PARK SEPTIC SYSTEM REPLACEMENTS	
Drawing title/Titre du dessin	
7558 ELGIN MILLS ROAD CITY OF MARKHAM ELECTRICAL SITE PLAN AND DETAILS	
Designed by/Concept par	Date
M. PAK MUNRO	
Drawn by/Designé par	Date
J. CZYZEWSKI	
Checked by/Vérifié par	Date
E. LAFLEUR	
Project No./N° du projet	Scale/Échelle
163401449	AS INDICATED
Drawing Set No./N° de série du dessin	Sheet No./ N° de la feuille
	E-07a

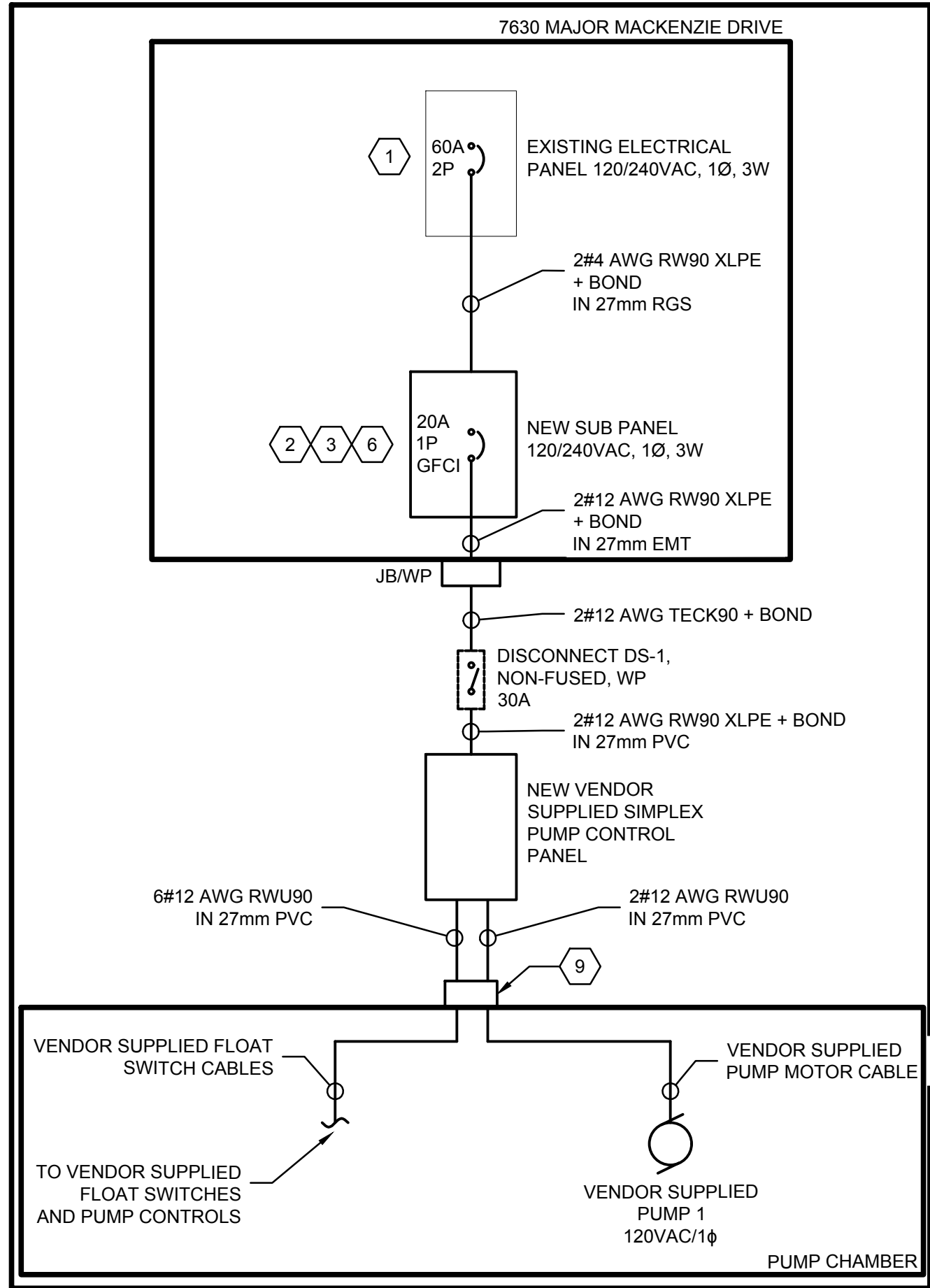




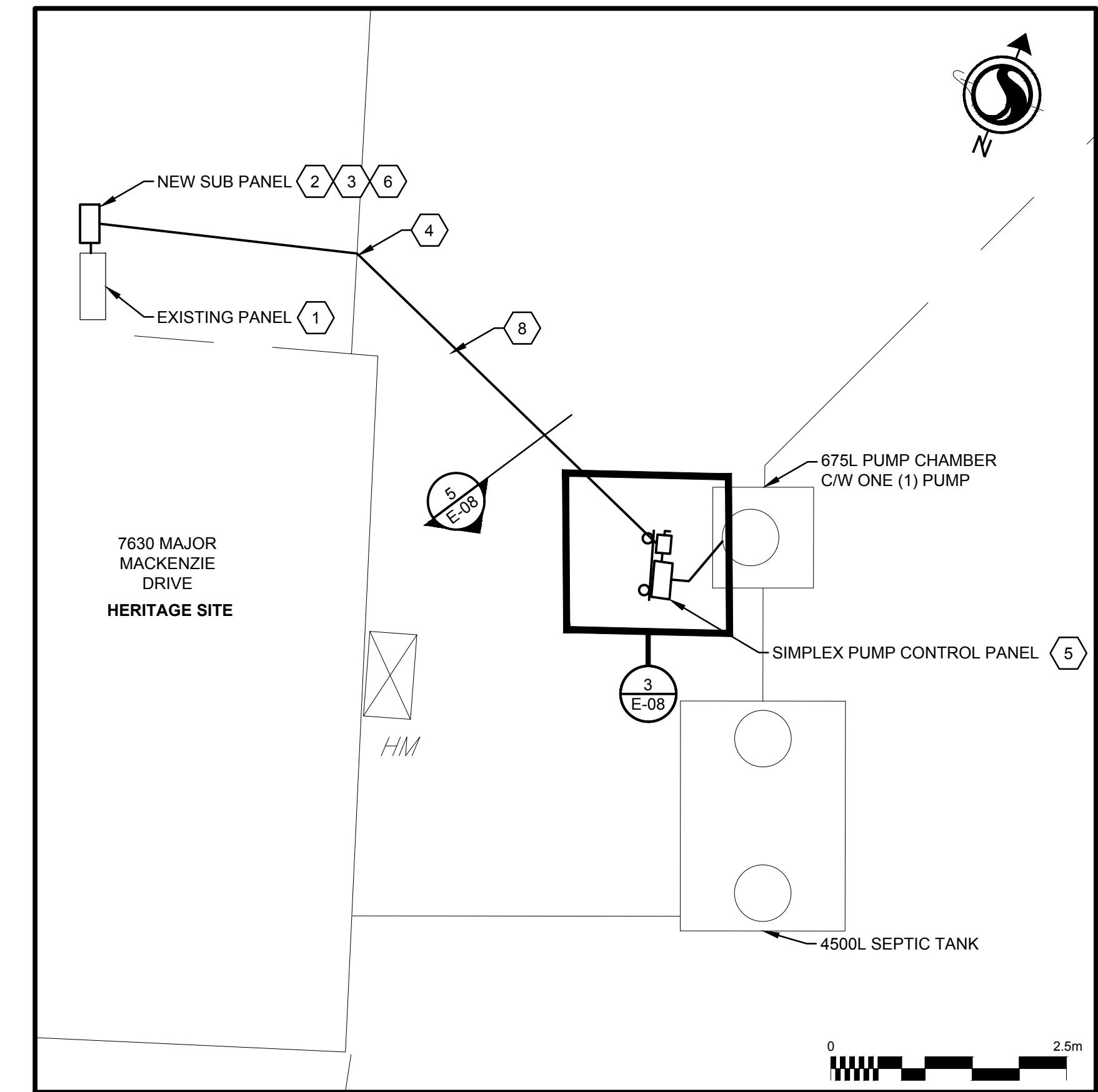
1 ELECTRICAL SITE PLAN  
E-08 1:10m



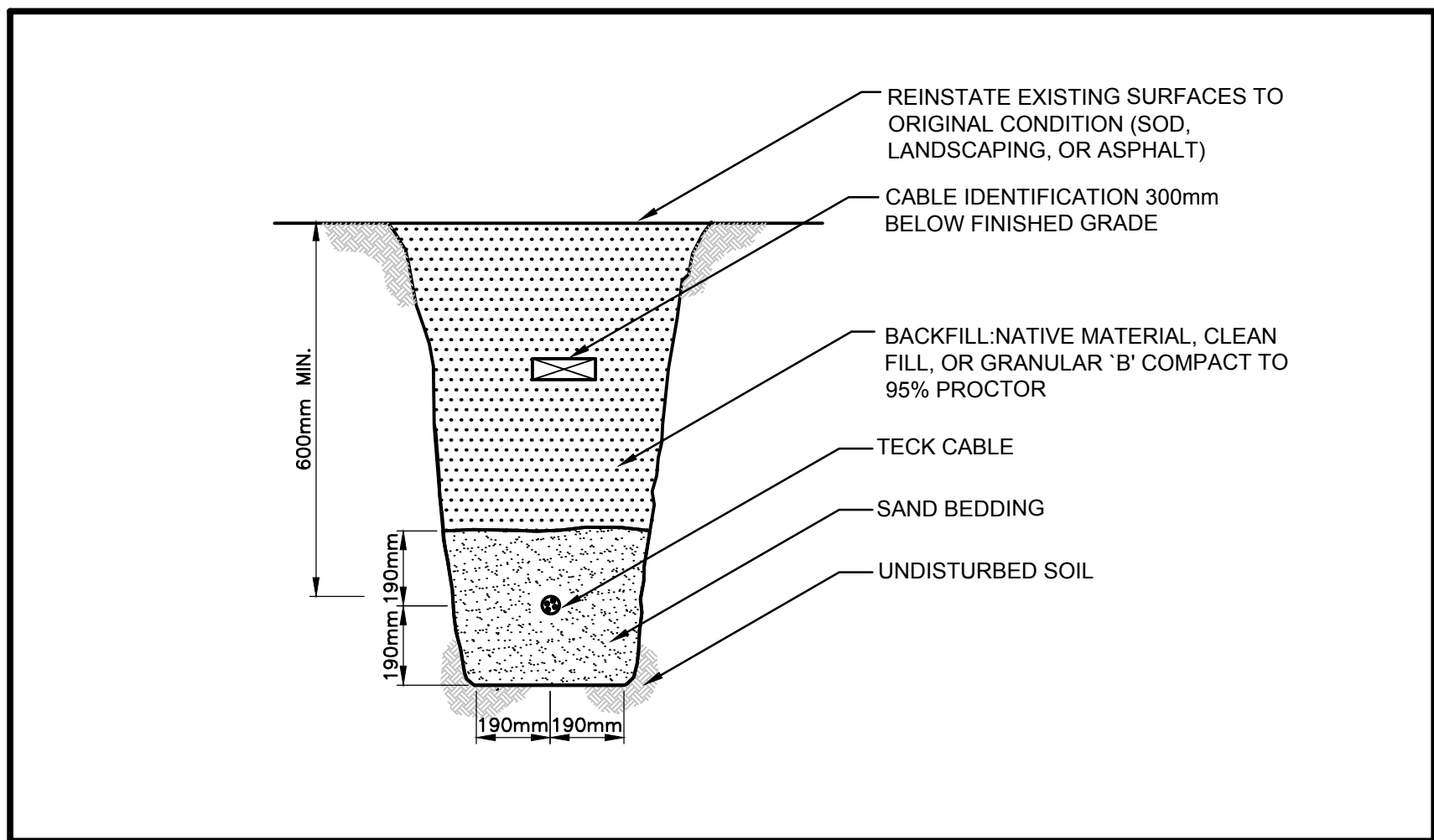
3 OUTDOOR STRUCTURE DETAIL  
E-08 NTS



4 PARTIAL SINGLE LINE DIAGRAM  
E-08 NTS



2 ELECTRICAL EQUIPMENT LAYOUT  
E-08 1:2.5m



5 TYPICAL DIRECT BURIED DETAIL  
E-08 NTS

#### GENERAL NOTES

1. THE BUILDING AT THIS SITE IS CLASSIFIED HERITAGE. VISIT SITE PRIOR TO SUBMITTING FOR TENDER BID TO DETERMINE SITE CONDITIONS SUCH AS BUT NOT LIMITED TO EXACT LOCATION OF EXISTING PANEL, PENETRATIONS INTO EXISTING BUILDING ETC.
2. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS, INCLUDING BUT NOT LIMITED TO ULTRASONIC SCANNING OR X-RAY SCANNING, TO AVOID DAMAGING OR DEMOLISHING ALL SITE THAT ARE CLASSIFIED AS HERITAGE SITES.

#### PRIMARY DRAWING NOTES

- 1 EXISTING 120/240VAC, 225A ELECTRICAL PANEL. CONTRACTOR TO DETERMINE EXACT LOCATION.
- 2 PROVIDE AND INSTALL NEW SUB PANEL FED FROM NEW 2P, 60A BREAKER AT EXISTING ELECTRICAL PANEL. SEE PARTIAL SINGLE LINE DIAGRAM FOR DETAILS.
- 3 PROVIDE AND INSTALL 1P, 20A GFCI BREAKER IN NEW SUB PANEL FOR NEW VENDOR SUPPLIED SIMPLEX PANEL LOCATED ON OUTDOOR STRUCTURE.
- 4 ENSURE ALL BUILDING PENETRATIONS ARE SEALED WATER TIGHT. PROVIDE EMT WITHIN BUILDING AND TRANSITION TO TECK FOR OUTDOORS. CONTRACTOR TO DETERMINE BEST POSSIBLE CONDUIT ROUTING. ROUTING SHOWN IS FOR DIAGRAMMATIC PURPOSES ONLY.
- 5 CONTRACTOR TO PROVIDE, FABRICATE AND INSTALL EXTERIOR UNISTRUT OPEN-AIR STRUCTURE SUITABLE FOR MOUNTING OF EXTERIOR EQUIPMENT
- 6 PROVIDE NEW PANEL AND BREAKERS AS INDICATED AND INSTALL ADJACENT PANEL. PROVIDE ADDITIONAL SIX (6) 15A/1P SPARE BREAKERS. RE-FEED TWO CIRCUITS FROM EXISTING PANEL TO PROVIDE SPACE FOR NEW BREAKER IN EXISTING PANEL. EXTENDING WIRING AND CONDUIT TO SUIT.
- 7 AFTER WIRING, SEAL ENDS OF CONDUIT WITH "DUCT SEAL" OR EQUIVALENT SUITABLE FOR OUTDOOR USE.
- 8 SLOPE HORIZONTAL CONDUIT RUNS SO AS TO DRAIN MOISTURE INTO WELL.
- 9 NEMA 6P RATED SPLICE BOX (BY OTHERS) LOCATED OUTSIDE OF PUMP ACCESS CHIMNEY C/W BEAD OF RTV SEALANT AROUND LID AND ANY OPENINGS.

Canada

Parks Canada Parcs Canada  
Rouge National Urban Park Parc Urbain National de la Rouge



No.	Date	Description	Drawn by Dessiné par	Approved Approuvé
2	05.30.18	ISSUED FOR TENDER	J.C.	M.P.M.
1	04.25.18	ISSUED FOR 90% REVIEW	J.C.	M.P.M.

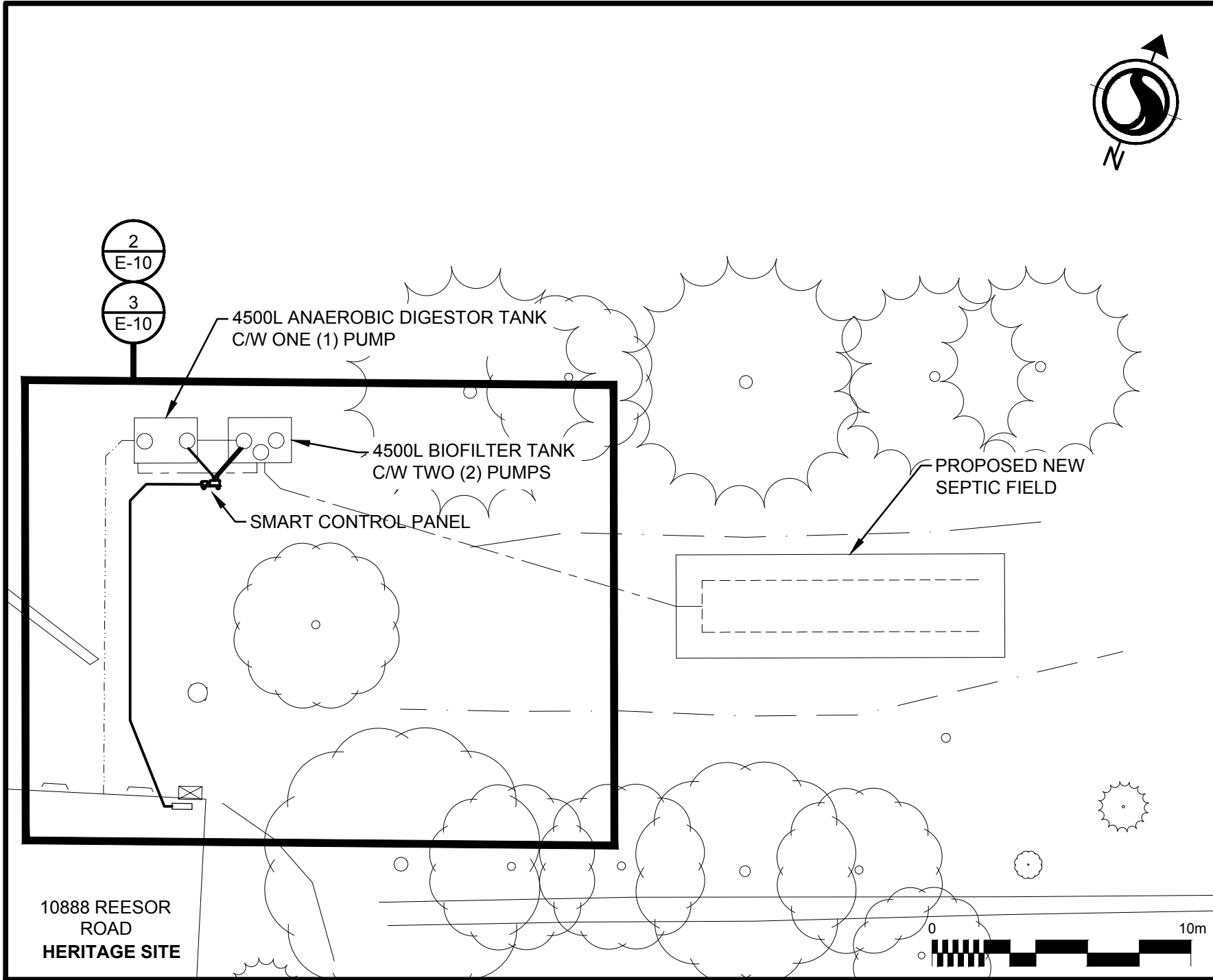
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A	Detail number	B	Numéro de la feuille
B	Sheet number		
Linear dimensions in millimetres		Dimensions linéaires en millimètres	
Consultant's Name Nom de l'expert-conseil		Eng. Stamp Sceau de l'ingénieur	
Stantec Stantec Consulting Ltd. 1331-400, Clyde Avenue Ottawa (Ontario) K2C 1G4 Telephone : 613 722 4420 Fax : 613 722 2799			

Project Title/Titre du projet  
**ROUGE NATIONAL URBAN PARK  
SEPTIC SYSTEM REPLACEMENTS**

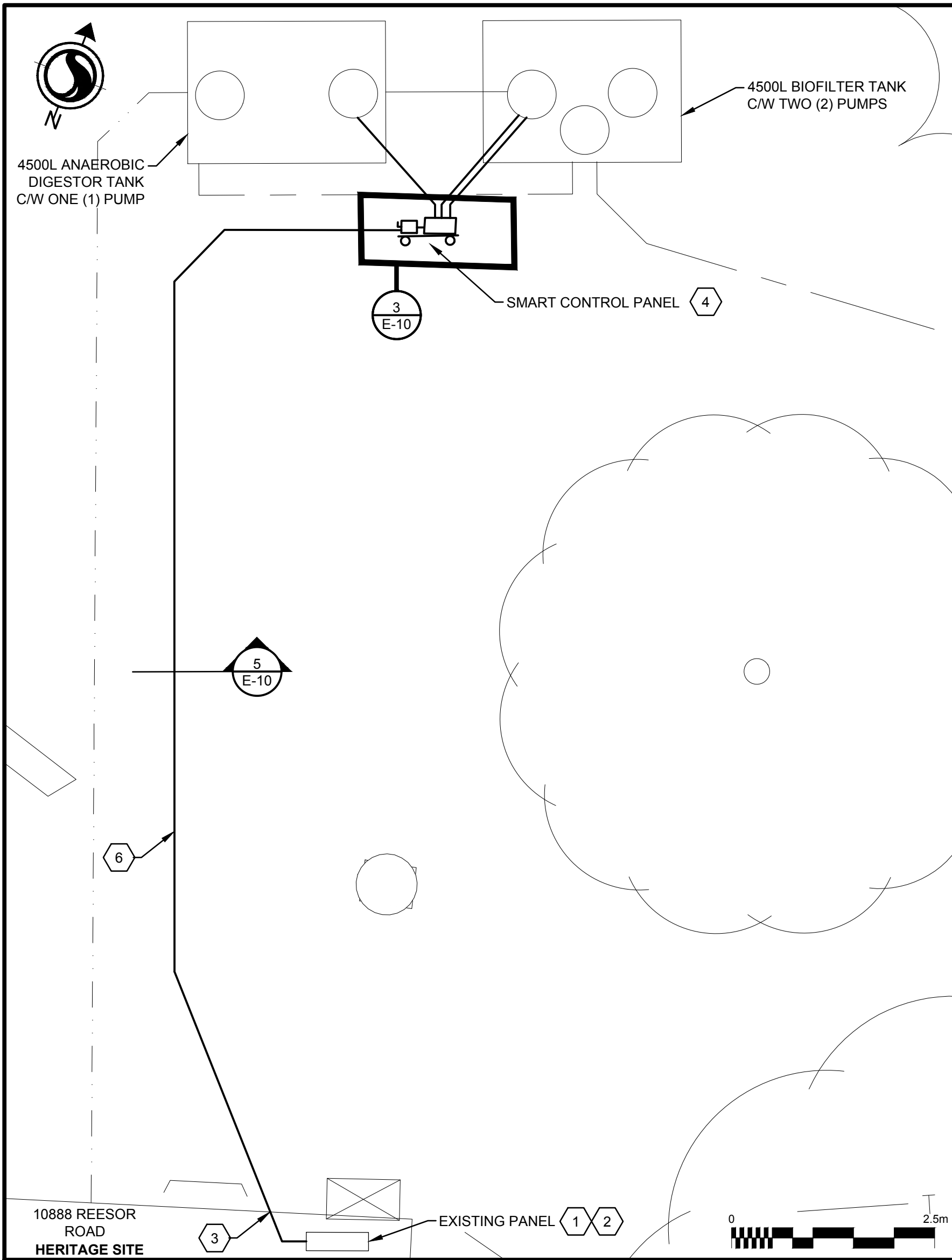
Drawing Title/Titre du dessin  
**7630 MAJOR MACKENZIE DR. E.  
CITY OF MARKHAM  
ELECTRICAL SITE PLAN AND DETAILS**

Designed by/Concept par M. PAK MUNRO	Date
Drawn by/Designé par J. CZYZEWSKI	Date
Checked by/Vérifié par E. LALEUR	Date
Project No./N° du projet 163401449	Scale/Échelle AS INDICATED
Drawing Set No./N° de série du dessin	Sheet No./ N° de la feuille E-08

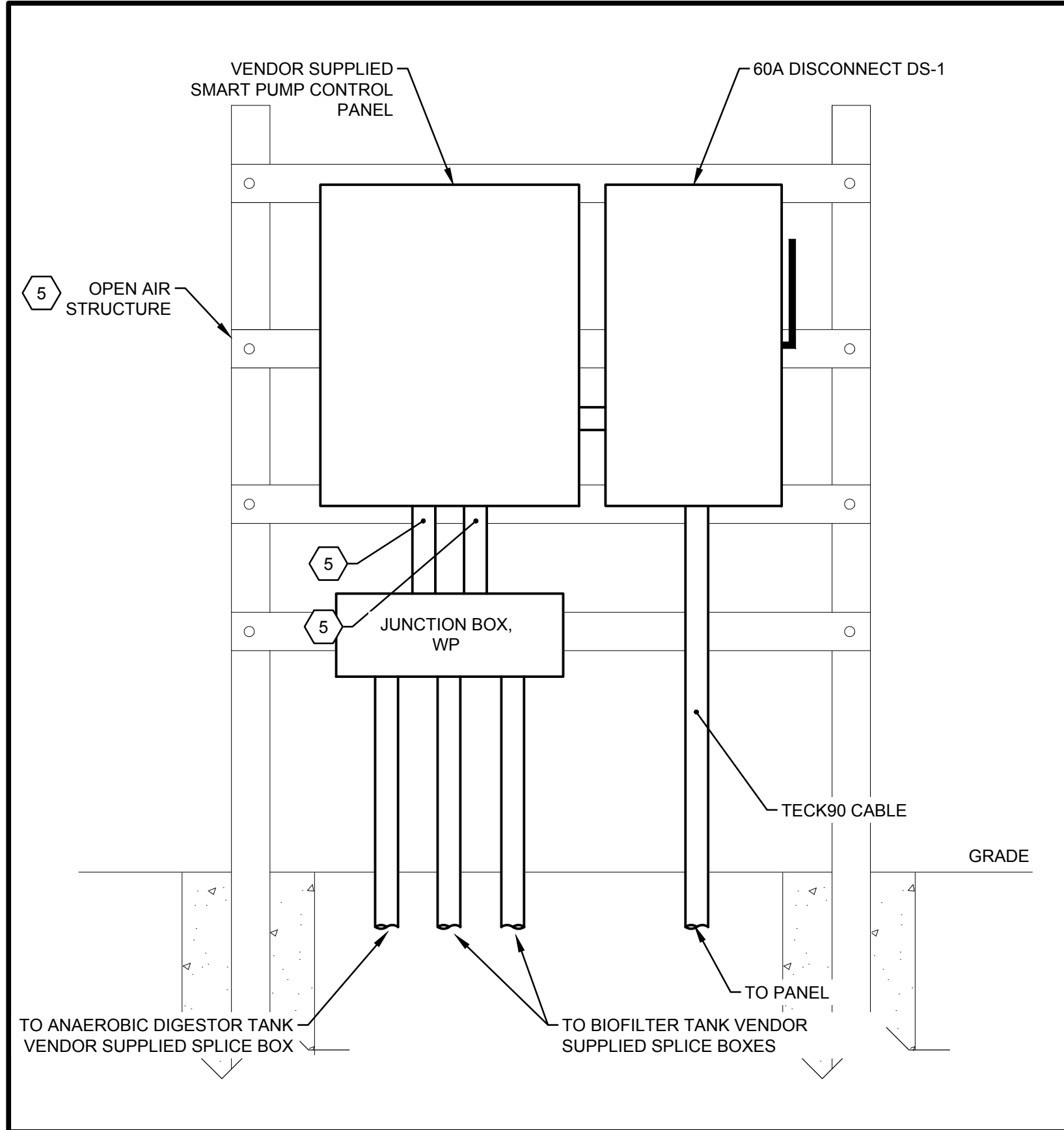




1 ELECTRICAL SITE PLAN  
E-10 1:10m



2 ELECTRICAL EQUIPMENT LAYOUT  
E-10 1:2.5m



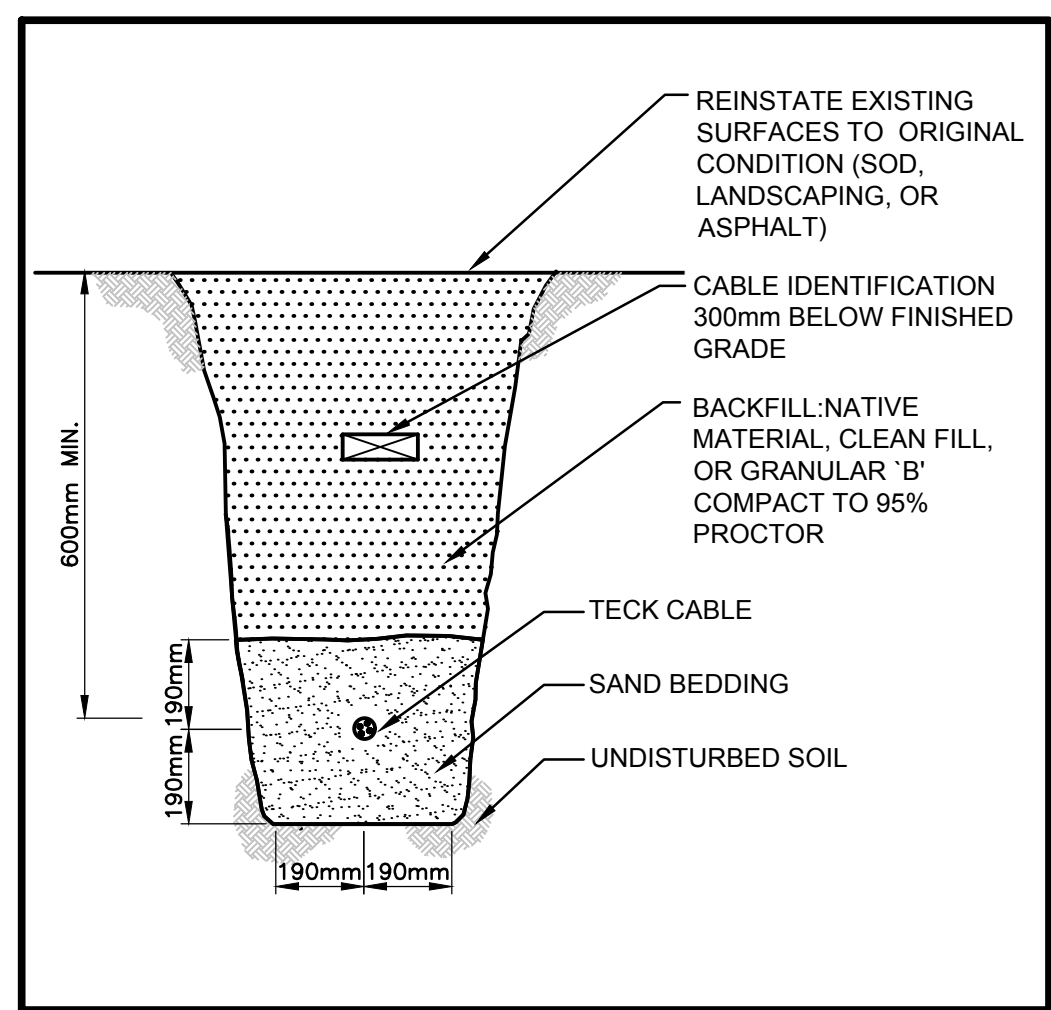
3 OUTDOOR STRUCTURE DETAIL  
E-10 NTS

#### GENERAL NOTES

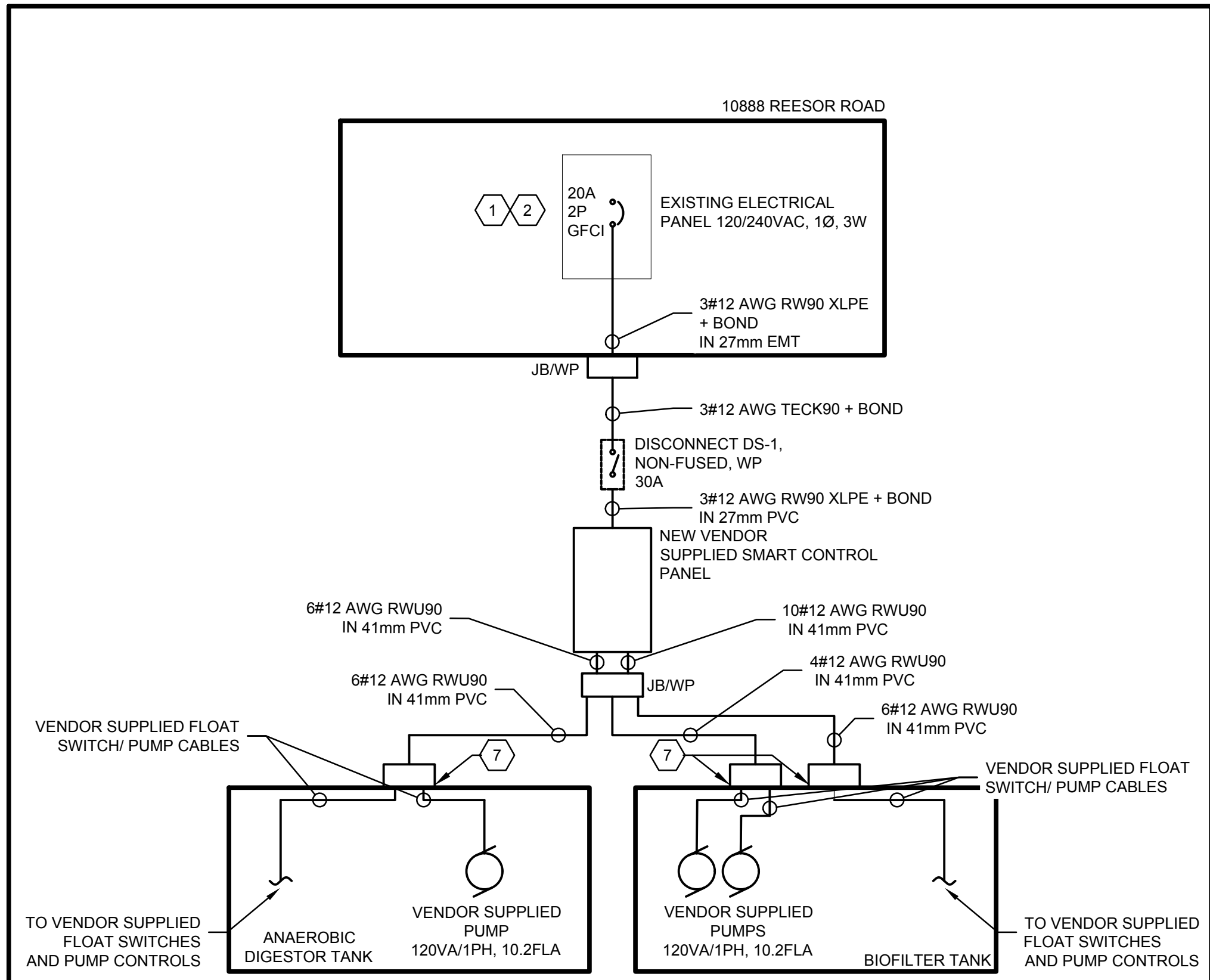
1. THE BUILDING AT THIS SITE IS CLASSIFIED HERITAGE. VISIT SITE PRIOR TO SUBMITTING FOR TENDER BID TO DETERMINE SITE CONDITIONS SUCH AS BUT NOT LIMITED TO EXACT LOCATION OF EXISTING PANEL, PENETRATIONS INTO EXISTING BUILDING ETC.
2. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS, INCLUDING BUT NOT LIMITED TO ULTRASONIC SCANNING OR X-RAY SCANNING, TO AVOID DAMAGING OR DEMOLISHING ALL SITE THAT ARE CLASSIFIED AS HERITAGE SITES.

#### PRIMARY DRAWING NOTES

1. EXISTING 120/240VAC, 100A ELECTRICAL PANEL. CONTRACTOR TO DETERMINE EXACT LOCATION.
2. PROVIDE AND INSTALL NEW 2P, 20A GFCI BREAKER IN EXISTING PANEL FOR NEW VENDOR SUPPLIED SMART CONTROL PANEL LOCATED ON OUTDOOR STRUCTURE.
3. ENSURE ALL BUILDING PENETRATIONS ARE SEALED WATER TIGHT. PROVIDE EMT WITHIN BUILDING AND TRANSITION TO TECK FOR OUTDOORS. CONTRACTOR TO DETERMINE BEST POSSIBLE CONDUIT ROUTING. ROUTING SHOWN IS FOR DIAGRAMMATIC PURPOSES ONLY.
4. CONTRACTOR TO PROVIDE, FABRICATE AND INSTALL EXTERIOR UNISTRUT OPEN-AIR STRUCTURE SUITABLE FOR MOUNTING OF EXTERIOR EQUIPMENT
5. AFTER WIRING, SEAL ENDS OF CONDUIT WITH "DUCT SEAL" OR EQUIVALENT SUITABLE FOR OUTDOOR USE.
6. SLOPE HORIZONTAL CONDUIT RUNS SO AS TO DRAIN MOISTURE INTO WELL.
7. NEMA 6P RATED SPLICE BOX (BY OTHERS) LOCATED OUTSIDE OF PUMP ACCESS CHIMNEY C/W BEAD OF RTV SEALANT AROUND LID AND ANY OPENINGS.



5 TYPICAL DIRECT BURIED DETAIL  
E-10 NTS



4 PARTIAL SINGLE LINE DIAGRAM  
E-10 NTS

Canada

Parks Canada  
Rouge National Urban Park

Parcs Canada  
Parc Urbain National de la Rouge



No.	Date	Description	Drawn by Dessiné par	Approved Approuvé
2	05.30.18	ISSUED FOR TENDER	J.C.	M.P.M.
1	04.25.18	ISSUED FOR 90% REVIEW	J.C.	M.P.M.

Revision / Revision
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A	Detail number	A Numéro de detail
B	Sheet number	B Numéro de la feuille

Linear dimensions in millimetres	Dimensions linéaires en millimètres
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Consultant's Name Nom de l'expert-conseil	Eng. Stamp Sceau de l'ingénieur
<b>Stantec</b> Stantec Consulting Ltd. 1331-400, Clyde Avenue Ottawa (Ontario) K2C 1G4 Telephone : 613 722 4420 Fax : 613 722 2799	

Project title/Titre du projet

**ROUGE NATIONAL URBAN PARK  
SEPTIC SYSTEM REPLACEMENTS**

Drawing title/Titre du dessin

**10888 REESOR ROAD  
CITY OF MARKHAM  
ELECTRICAL SITE PLAN AND DETAILS**

Designed by/Concept par M. PAK MURO	Date
Drawn by/Designé par J. CZYZEWSKI	Date
Checked by/Vérifié par E. LALEUR	Date
Project No./N° du projet 163401449	Scale/Échelle AS INDICATED
Drawing Set No./N° de série du dessin	Sheet No./ N° de la feuille E-09