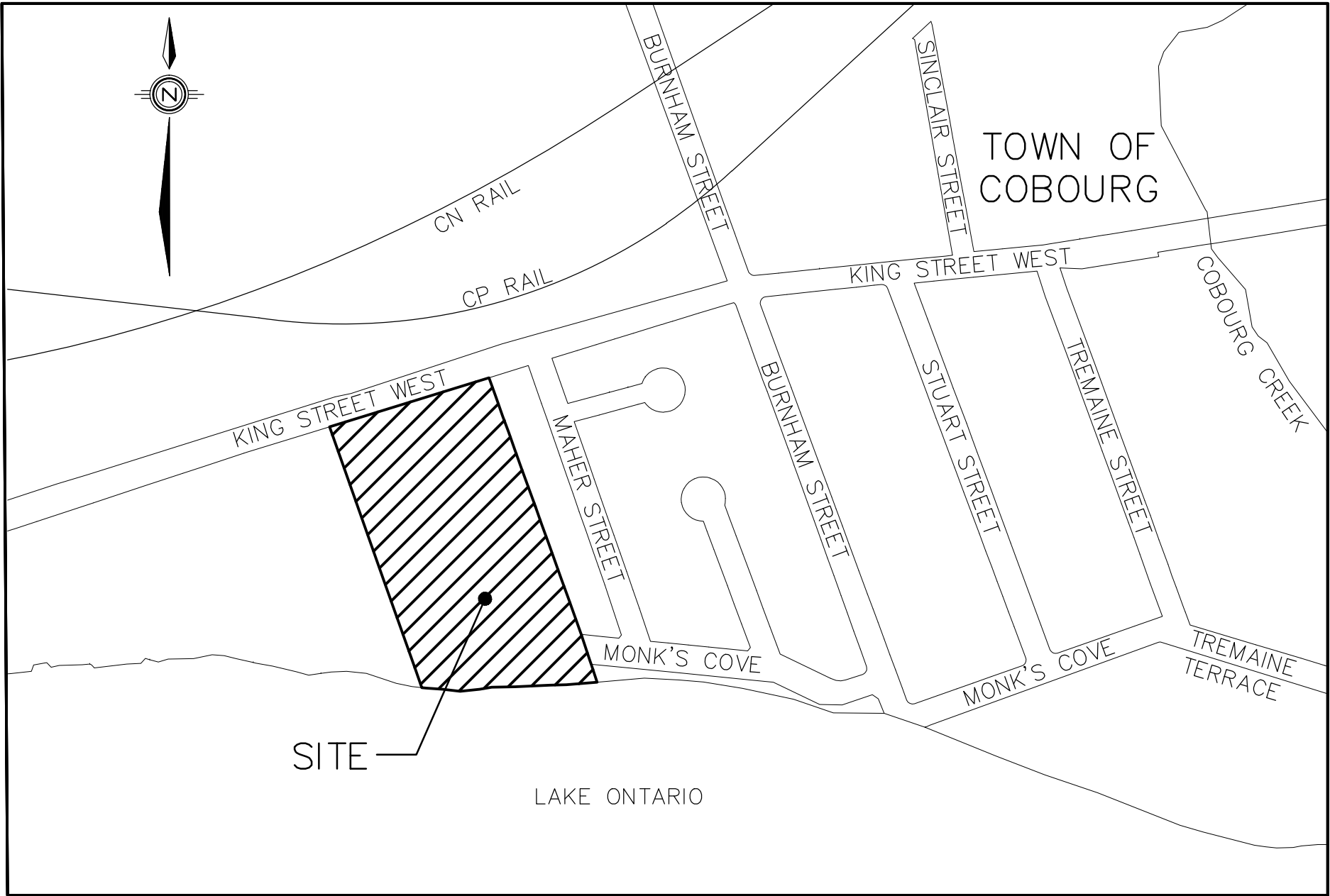


EIE CORPORATION

**CIMA**  
**CEDAR SHORE ESTATES**  
TOWN OF COBOURG  
**PLAN OF SUBDIVISION**  
**(Z-10-15SUB; 14T-150001)**



**KEY MAP**  
N.T.S.

DRAWING LIST

SHEET	DRAWING NO.	TITLE
1.	S-1	GENERAL NOTES
2.	S-2	GENERAL PLAN
3.	ESC	EROSION, SEDIMENT CONTROL PLAN, TREE REMOVAL & TREE PRESERVATION PLAN
4.	G-1	GRADING PLAN
5.	P-1	PLAN AND PROFILE - PATH
6.	P-2	PLAN AND PROFILE - EASEMENT
7.	P-3	PLAN AND PROFILE - STREET 'B'
8.	P-4	PLAN AND PROFILE - STREET 'A'
9.	P-5	PLAN AND PROFILE - STREET 'A'
10.	P-6	PLAN AND PROFILE - KING STREET WEST
11.	P-7	PLAN AND PROFILE - MAHER STREET
12.	C-1	CROSS-SECTIONS - KING STREET
13.	C-2	CROSS-SECTIONS - STORM OUTFALL AND PATHWAY
14.	L-1	LANDSCAPE/SITE/FURNITURE PLAN
15.	L-2	LANDSCAPE DETAILS
16.	E-1	COMPOSITE UTILITY PLAN - NORTH AREA
17.	E-2	COMPOSITE UTILITY PLAN - SOUTH AREA
18.	E-3	COMPOSITE UTILITY PLAN - MISCELLANEOUS DETAILS
19.	E-4	COMPOSITE UTILITY PLAN - SPECIFICATIONS

ISSUED FOR  
THIRD SUBMISSION

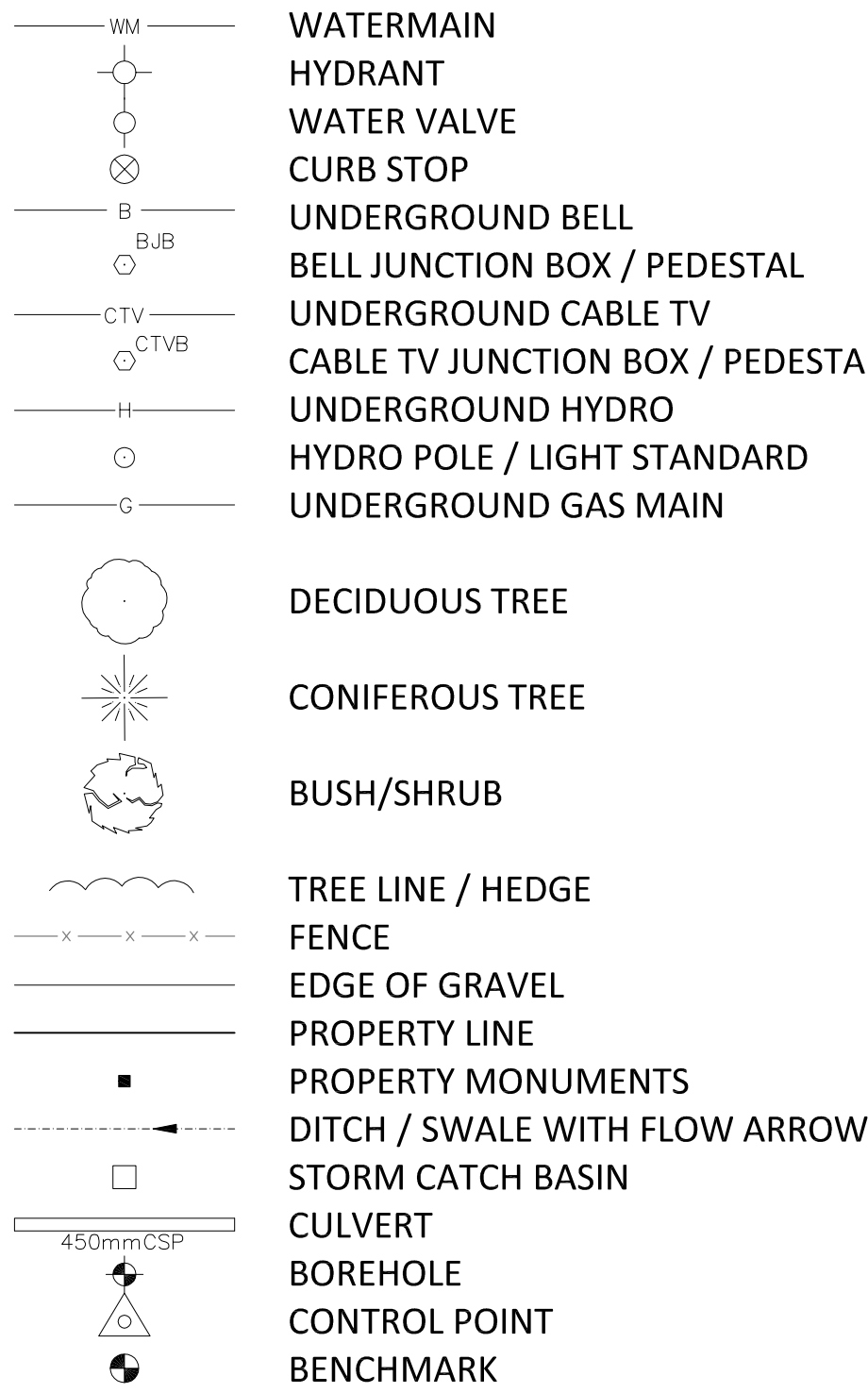


ABBREVIATIONS

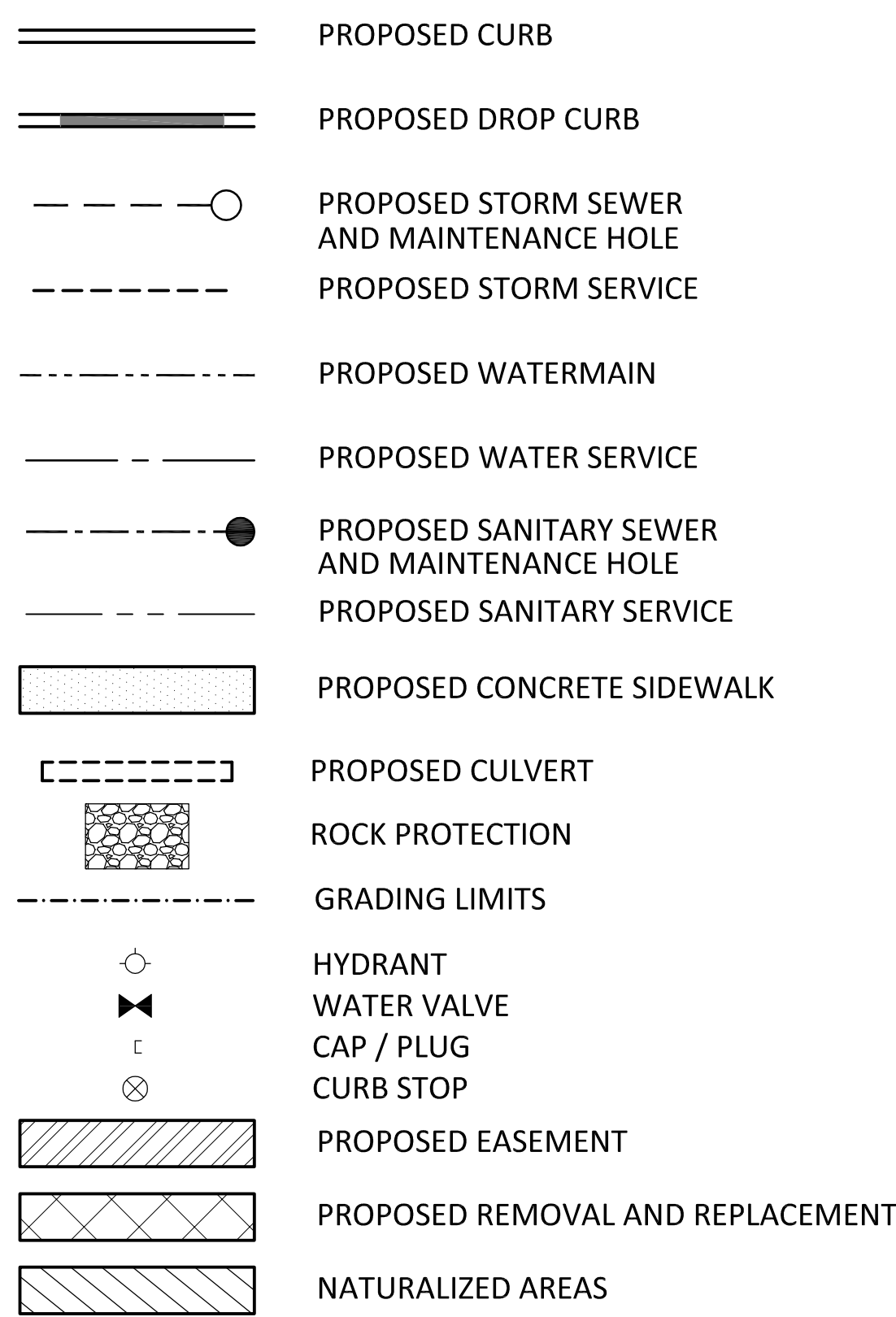
AC	ASBESTOS CEMENT	DMG	DRAWING	IB	IRON BAR	CSW OR SW	SIDEWALK, CONCRETE
ASPH	ASPHALT	D	DITCH INLET / DUCTILE IRON	IP	IRON PIPE	SSW	STONE SIDEWALK
ASW	ASPHALT SIDEWALK	EP	EDGE OF PAVEMENT	LP	LIGHT POLE	STD	STANDARD
AVE	AVENUE	EL	ELEVATION	LS	LIGHT STANDARD	STA	STATION
BH	BOREHOLE	ENT	ENTRANCE	LWL	LOW WATER LEVEL	STM	STORM
BUB	BELL JUNCTION BOX	EXIST OR EX	EXISTING	MH	MAINTENANCE HOLE	STY	STOREY
BP	BELL POLE	GAR	GARAGE	MAX	MAXIMUM	ST	STREET
BRPD	BELL PEDESTAL	GV	GAS VALVE	MJ	MECHANICAL JOINT	TAN	TANGENT
BM	BENCHMARK	GBM	GEODETIC BENCHMARK	MIN	MINIMUM	TV	TELEVISION CABLE
BLVD	BOULEVARD	GRAN	GRANULAR	NTS	NOT TO SCALE	TWP	TOWNSHIP
BR	BROOK	GR	GRAVEL OR GRADE	NO	NUMBER	TC	TRAFFIC CONDUIT
BLDG	BUILDING	GP	GUY POLE	OPSD	ONTARIO PROVINCIAL STANDARD DRAWINGS	TLP	TRAFFIC LIGHT POLE
CB	CATCH BASIN	H	UNDERGROUND HYDRO	PAVT	PAVEMENT	TP	TEST PIT
CBMH	CATCH BASIN MAINTENANCE HOLE	HDPE	HIGH DENSITY POLYETHYLENE	PTP	PERMANENT TURNING POINT	TS	TRAFFIC SIGN
CL	CLASS	HW	HAND WELL	PI	POINT OF INTERSECTION	TRANS	TRANSFORMER
CLF	CHAIN LINK FENCE	HML	HIGH WATER LEVEL	PE	POLYETHYLENE	TYP	TYPICAL
CCNC	CONCRETE	HWY	HIGHWAY	PVC	POLYVINYL CHLORIDE	VERT	VERTICAL
OP	CONCRETE PRESSURE PIPE	HORZ	HORIZONTAL	PROP	PROPOSED	VR	VERTICAL POINT OF INTERSECTION
CP	CONTROL POINT	HSE	HOUSE	REIN	REINFORCED	VC	VITRIFIED CLAY
CRCS	CRESCENT	HOT	HUB ON TANGENT	RC	REINFORCED CONCRETE	WF	WIRE FENCE
CSP	CORRUGATED STEEL PIPE	HYD	HYDRANT	ROW	RIGHT-OF-WAY	WIF	WELDED IRON FENCE
CTVB	CABLE TV BOX	HP	HYDRO POLE	RB	ROUND IRON BAR	WL	WATER LEVEL
CUV	CULVERT	HPU	HYDRO POLE WITH UNDERGROUND	RD	ROAD	WM	WATERMAIN
DEPT	DEPARTMENT	HLP	HYDRO POLE WITH LIGHT	SAN	SANITARY	WS	WATER SERVICE
DA	DIAMETER	HTP	HYDRO POLE WITH TRANSFORMER	SC	SERVICE CONNECTION	WV	WATER VALVE
DOB	DITCH INLET CATCH BASIN	ID	INSIDE DIAMETER	SHLD	SHOULDER		
DCB	DOUBLE CATCH BASIN	INV	INVERT	SB	SQUARE IRON BAR		

LEGEND

EXISTING



PROPOSED



1. MEASUREMENTS:
- A.

ALL MEASUREMENTS IN METRES, PIPE SIZES IN MILLIMETRES, UNLESS OTHERWISE SPECIFIED
- B.

EQUIVALENT METRIC UNITS SHALL BE USED FOR ALL STANDARD DRAWINGS, AS APPROVED BY THE MUNICIPALITIES CONCERNED

2. SANITARY SEWERS:
- A.

PIPE

600mm DIAMETER AND SMALLER SHALL BE POLYVINYL CHLORIDE PIPE(PVC) CONFORMING TO C.S.A. SPECIFICATION B182.2 AND B182.4; A.S.T.M. D3034, F 679, F794 AND F 949. 675mm DIAMETER AND LARGER SHALL BE STEEL REINFORCED CONCRETE PIPE CONFORMING TO C.S.A. SPECIFICATION A 257.2-M 1982 OR LATEST REVISION THEREOF UNLESS OTHERWISE NOTED.
- B.

MANHOLES

AS PER STANDARD DRAWINGS, OPSD 401.010, OPSD 404.020, OPSD 405.010, OPSD 405.020, OPSD 701.010 AND OPSD 701.011
- C.

BENCHING

AS PER STANDARD DRAWING OPSD 701.021 AND /OR AS SHOWN ON THE DRAWINGS
- D.

BEDDING

AS PER STANDARD DRAWING OPSD 802.010 FOR P.V.C. PIPES AND PLASTIC SERVICE CONNECTIONS AND OPSD 802.030 CLASS 'B' FOR CONCRETE PIPES
- E.

CONNECTIONS

150mm DIAMETER P.V.C. SDR-28 CONNECTIONS SHALL BE INSTALLED AT A MINIMUM GRADE OF 2% AT THE MID-POINT OF THE LOT FRONTAGE, TO THE LEFT OF THE WATER CONNECTION AND TERMINATING A MINIMUM OF 1.5m BEYOND THE PROPERTY LINE. IT SHALL ALSO BE FITTED WITH A MANUFACTURED WATERTIGHT PLUG.
- F.

INSPECTION

ALL MAINLINE SANITARY SEWERS ARE TO BE INSPECTED BY VIDEO CAMERA PRIOR TO THE INITIAL MAINTENANCE PERIOD

3. STORM SEWERS:
- A.

PIPE

375mm AND SMALLER SHALL BE PVC SDR35 CONFORMING TO C.S.A. SPECIFICATION B182.2 AND B182.4. 450mm DIAMETER AND LARGER SHALL BE STEEL REINFORCED CONCRETE PIPE CONFORMING TO CAN/C.S.A.-A257.2 AND NON-REINFORCED CONCRETE PIPE SHALL CONFORM TO CAN/C.S.A.-A257.1, (LATEST AMENDMENT), CLASS AS SHOWN ON THE DRAWINGS.
- B.

MANHOLES

AS PER STANDARD DRAWING, OPSD 401.010, OPSD 404.020, OPSD 405.010, OPSD 405.020, OPSD 701.010 AND OPSD 701.011, OPSD 701.012, OPSD 701.013 AND OPSD 701.014
- C.

BENCHING

AS PER STANDARD DRAWING OPSD 701.021 AND /OR AS SHOWN ON THE DRAWINGS
- D.

BEDDING

AS PER STANDARD DRAWING OPSD 802.010 FOR P.V.C. PIPES AND PLASTIC SERVICE CONNECTIONS AND OPSD 802.030 CLASS 'B' FOR CONCRETE PIPES
- E.

CONNECTIONS

150mm DIAMETER P.V.C. SDR-28 CONNECTIONS SHALL BE INSTALLED AT A MINIMUM GRADE OF 2% 0.6m TO THE LEFT OF THE SANITARY SEWER SERVICE CONNECTION AND SHALL EXTEND A MINIMUM OF 1.5m BEYOND THE PROPERTY LINE. IT SHALL ALSO BE FITTED WITH A MANUFACTURED WATERTIGHT PLUG.
- F.

CATCHBASINS

AS PER OPSD 705.010 AND 705.020. CATCHBASIN LEADS SHALL BE 300mmØ P.V.C. OR CONCRETE PIPE FOR SINGLE AND DOUBLE CATCHBASINS AND/OR AS SHOWN ON THE DRAWINGS. ALL ROADWAY CATCHBASIN GRATES AS PER OPSD 400.020
- G.

SUBDRAINS

SHALL RUN CONTINUOUS ON BOTH SIDES OF PROPOSED ROADS AS PER TYPICAL CROSS SECTION ON DRAWING S-2
- H.

INSPECTION

ALL STORM SEWERS, INCLUDING REAR LOT CATCHBASIN LEADS, ARE TO BE INSPECTED BY VIDEO CAMERA PRIOR TO THE INITIAL MAINTENANCE PERIOD.

4. WATERMAINS:
- A.

PIPE

300mm DIAMETER WATERMAINS SHALL BE DUCTILE IRON CONFORMING TO THE REQUIREMENTS OF LAKEFRONT UTILITY SERVICES INCORPORATED. 200mm DIAMETER AND SMALLER SHALL BE POLYVINYL CHLORIDE PIPE (P.V.C.) CONFORMING TO A.W.W.A. C900-89 AND C.S.A. CAN3 B 137.3-M86. A MINIMUM CLASS 150 PIPE SHALL BE USED. 400mm DIAMETER AND LARGER SHALL BE PRETENSIONED CONCRETE PRESSURE PIPE STEEL CYLINDER TYPE (C.P.P.) CONFORMING TO A.W.W.A. C303. ALL PIPE SHALL HAVE MINIMUM COVER OF 1.8m.
- B.

VALVES

RESILIENT SEAT VALVES CONFORMING TO A.W.W.A. C509 (LATEST REVISION) SHALL BE USED ON ALL WATERMAINS 300mm IN DIAMETER OR SMALLER. BUTTERFLY VALVES CONFORMING TO A.W.W.A. C509 (LATEST REVISION) SHALL BE USED ON ALL OPERATING UNITS OPENING COUNTER CLOCKWISE. ALL IN-LINE VALVES SHALL BE RESTRAINED.
- C.

BEDDING

AS PER STANDARD DRAWING OPSD 802.010.
- D.

CONNECTIONS

19mm OR 25mm DIAMETER COPPER TYPE 'K' AS PER OPSD 1104.010 AND/OR AS SHOWN ON THE DRAWINGS. CONNECTIONS SHALL TERMINATE WITH CURB STOP AND BOX AT THE PROPERTY LINE, AND SHALL BE INSTALLED 1.5m TO THE RIGHT OF THE SANITARY SEWER SERVICE CONNECTION.
- E.

HYDRANTS

TO BE CLOW CANADA BRIGADIER M-67 DARLING CENTURY WITH TWO (2) - 62mm HOSE COUPLINGS CSA B89-2 ONTARIO FIRE MARSHALL STANDARD THREAD AND ONE (1) - 112mm PUMPER NOZZLE. HYDRANTS TO BE DRAINING WITH 150mm MJ BASE AND ARE TO BE INSTALLED AS PER OPSD 1105.010 ALL HYDRANTS INSTALLED UNDER THIS CONTRACT ARE TO BE PURCHASED BY THE CONTRACTOR FROM THE SUPPLIER AT THE CONTRACTOR'S EXPENSE.
- F.

CATHODIC PROTECTION

AS PER OPSD 1109.010 FOR DUCTILE IRON WATERMAINS AND OPSD 1109.011 FOR P.V.C. WATERMAINS.
- G.

DEFLECTION

AS PER OPSD 1103.010, 1103.020, OR AS SPECIFIED ON DRAWINGS.
- H.

INSPECTION

UPON COMPLETION OF WATERMAIN INSTALLATION AND PRIOR TO INITIAL ACCEPTANCE, WATERMAINS ARE TO SWABBED, FLUSHED, TESTED AND CHLORINATED.

5. ROADS:
- A.

ROAD DESIGN

AS PER TYPICAL CROSS SECTION ON DRAWING S-2.

KEY PLAN:

BENCHMARK:  
**BM 2**  
TOP OF SPIKE IN EAST FACE OF 0.4m CEDAR.

**80.681**

BENCHMARK:  
**BM 3**  
TOP OF SOUTH HUB OF HYDRANT ON THE NORTH SIDE OF KING ST.W. APPROXIMATELY 24m WEST OF HYDRO POLE MARKED S4-60.

**81.305**

55 King Street East  
Bownville ON L1C 1M4  
Phone: 905 697-4464  
Fax: 905 697-0443  
www.cima.ca

CLIENT:

EIE CORPORATION

PROJECT NAME:

STAMPS:

4.	03/16/2018	ISSUED FOR 3RD SUBMISSION	RC
3.	12/08/2017	ISSUED FOR 2ND SUBMISSION	RC
2.	05/17/2017	ISSUED FOR 1ST SUBMISSION	RC
1.	01/25/2017	PRE-CONSULTATION MEETING	RC
No.	Date	Description	By

SHEET TITLE:

GENERAL NOTES

DISCIPLINE:

INFRASTRUCTURE

SCALE:

PROJECT No:  
C14-0011

CLIENT File No:

DRAFTER:  
K.ALLEN

DESIGNER:  
P. MERRETT

DRAWING No:

APPROVER:  
R. CRESSMAN

APPROVER:  
W. McCRAE

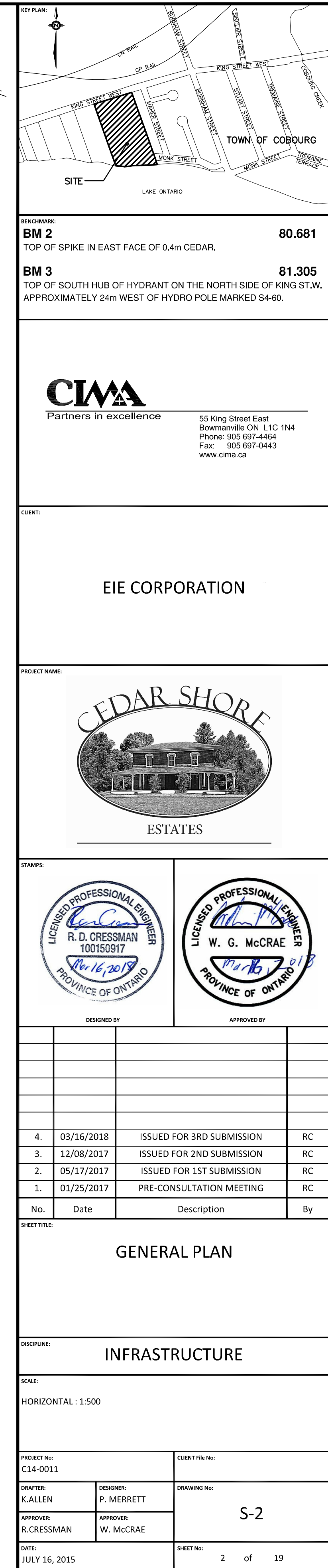
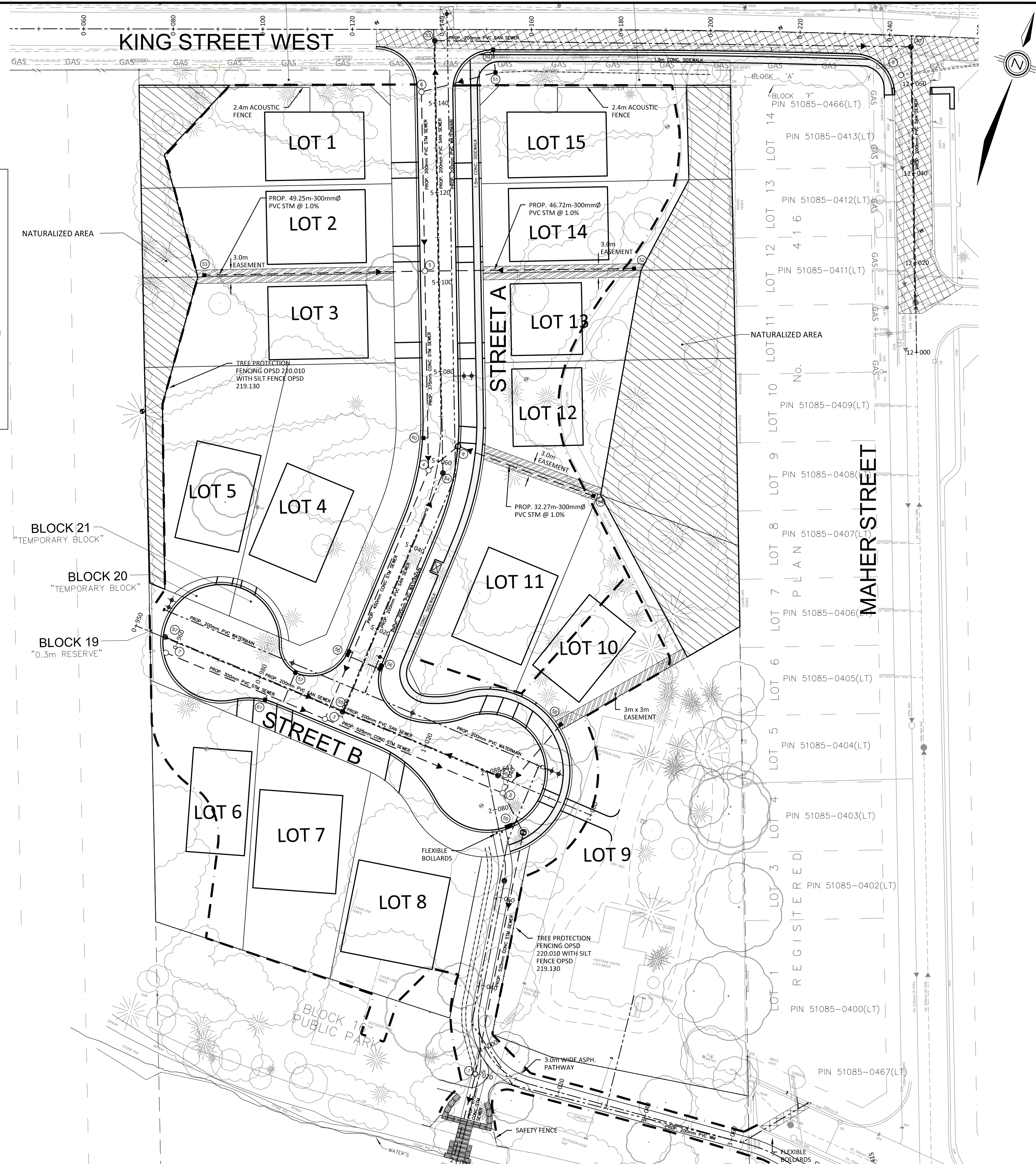
**S-1**

DATE:  
JULY 16, 2015

SHEET No:  
1 of 19

Z:\Cine-C14-Projects\C14-0011 - King Street West Village Development (EIE Corporation)\400-Drawings and Sketches\410-WP-AutoCAD\C14-0011-C-General Plan.dwg, 03/16/2018 09:51:21







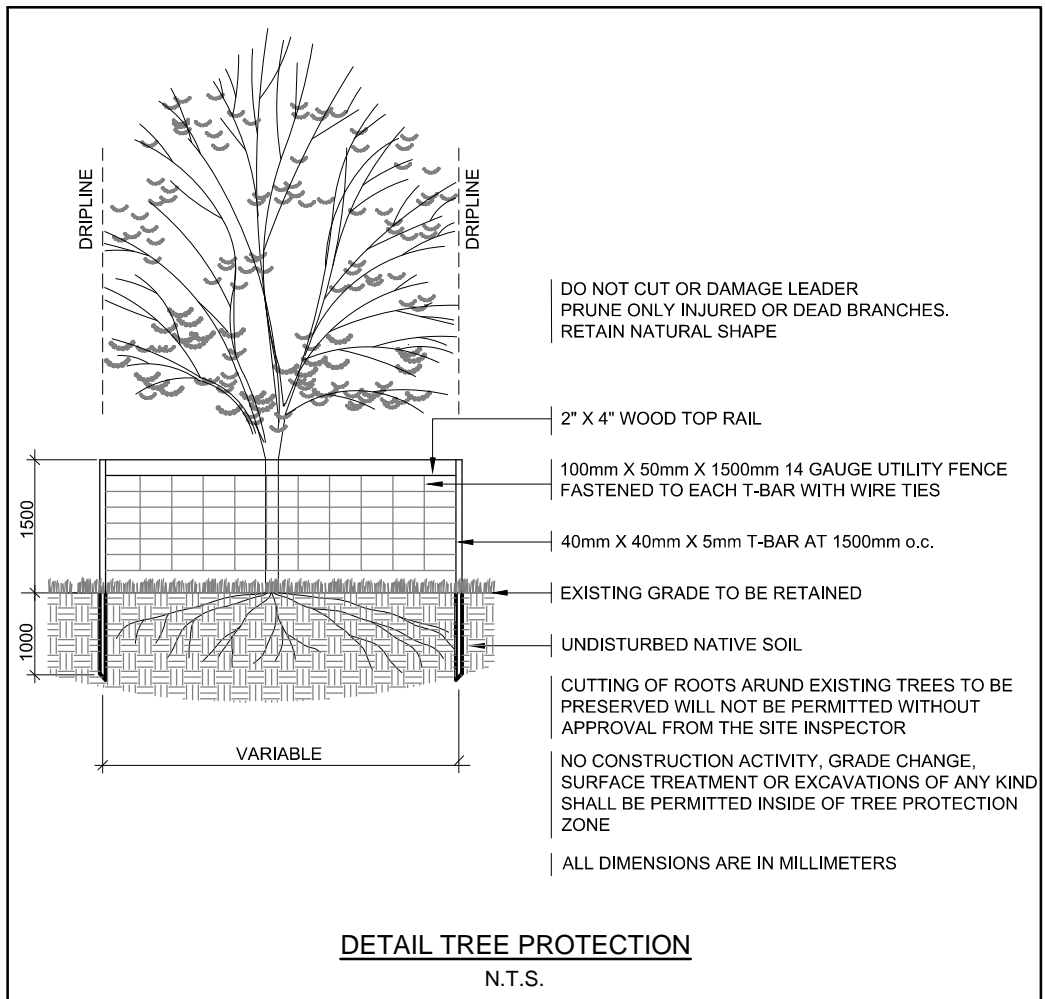
KING STREET WEST

STAGING:

1. INSTALL MUD MAT, SEDIMENT FENCE AND TREE PROTECTION FENCE PRIOR TO ANY CLEARING, GRUBBING, GRADING OR EXCAVATION.
2. COMPLETE STAGE ONE CLEARING AND GRUBBING AS SHOWN.
3. CONSTRUCT TEMPORARY SWALES, SEDIMENT POND AND ROCK CHECK DAMS AS PER OPSD 219.210.
4. INSTALL STORM OUTFALL AND OIL GRIT SEPARATOR (HGB) EARLY IN CONSTRUCTION. OUTFALL IS TO BE RESTORED UPON COMPLETION.
5. AT THE COMPLETION OF ROADWAY AND STORM SEWER CONSTRUCTION CATCH BASIN FILTERS ARE TO BE INSTALLED AT ALL DITCH INLETS AND CATCH BASINS. THESE CB FILTERS ARE TO REMAIN OPERATIONAL DURING CONSTRUCTION PERIOD, UNTIL THE LOTS HAVE BEEN SODDED.
6. COMPLETE STAGE 2 CLEARING AND GRUBBING PENDING REVIEW OF EXISTING TREES AGAINST INDIVIDUAL SITE PLANS AND GRADING DETAILS.

ENVIRONMENTAL NOTES:

1. NO CONSTRUCTION EQUIPMENT OR ACTIVITY SHALL PROCEED BEYOND THE LIMITS OF THE SEDIMENT CONTROL FENCE.
2. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE LEFT IN PLACE UNTIL ALL DISTURBED AREAS HAVE STABILIZED.
3. EROSION AND SEDIMENT CONTROL SHALL BE INSPECTED ON A REGULAR BASIS AND IMMEDIATELY AFTER RAINFALL EVENTS TO ENSURE THEY ARE FUNCTIONING PROPERLY AND ARE MAINTAINED AND/OR UPGRADED AS REQUIRED.
4. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM ALL ESC MEASURES AT THE DIRECTION OF THE CONTRACT ADMINISTRATOR OR AFTER EACH RAINFALL EVENT.
5. ALL TREE CLEARING TO OCCUR WITHIN TIMING WINDOW (AUGUST 1 TO MAY 1)



Tree Protection Signs:

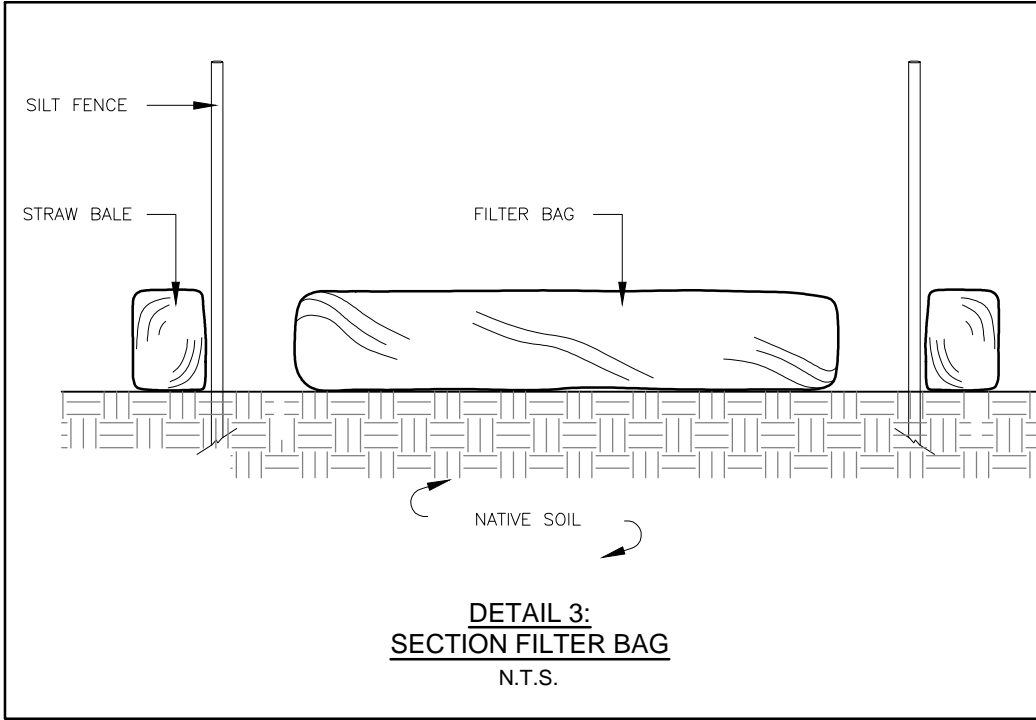
Tree protection signs shall be installed on the Tree Protection Fence. Sign must be 40cm x 60cm, installed on the fence with a maximum spacing of 25m. Sign shall read as follows:

Tree Protection Zone (TPZ)

All construction related activities, including grade alteration, excavation, soil compaction, any materials or equipment storage, disposal of liquid and vehicular traffic are NOT permitted within this TPZ.

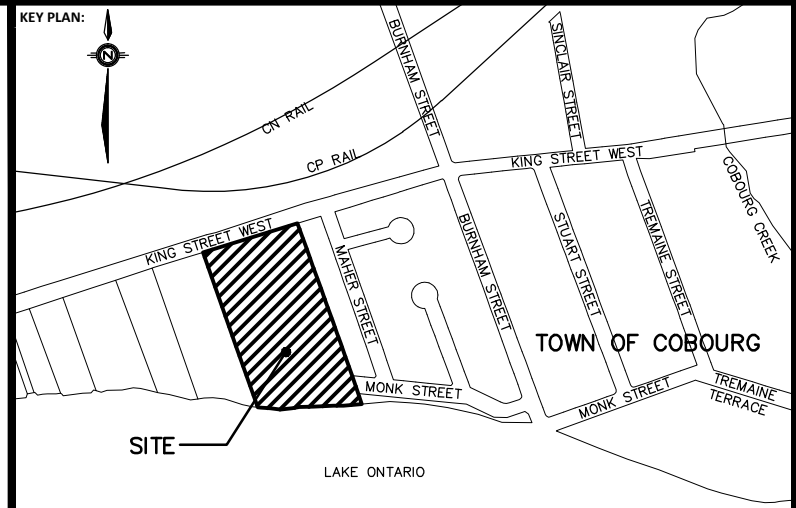
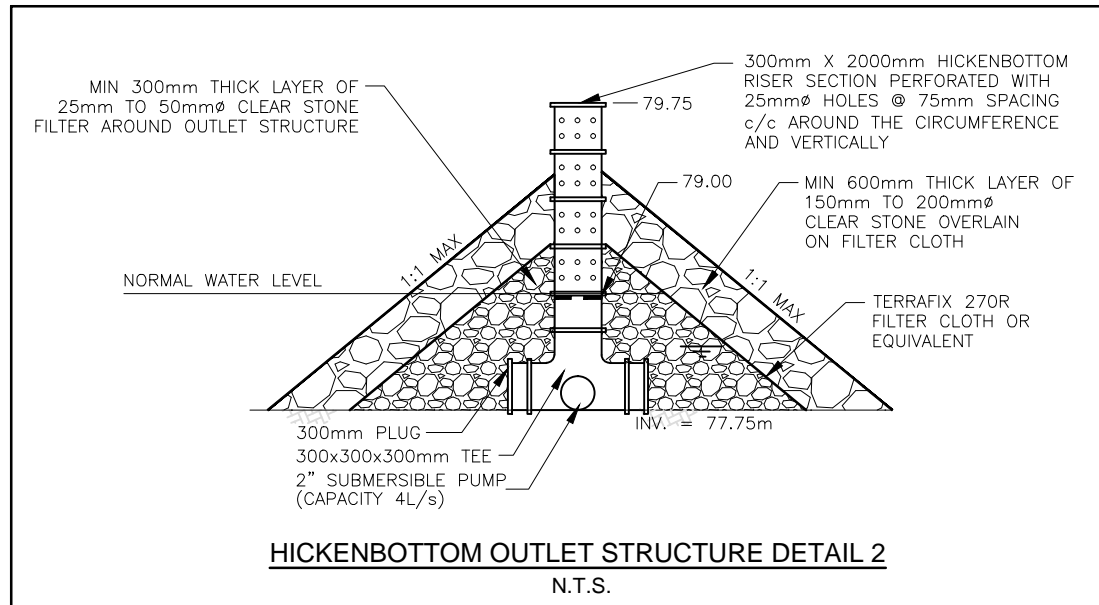
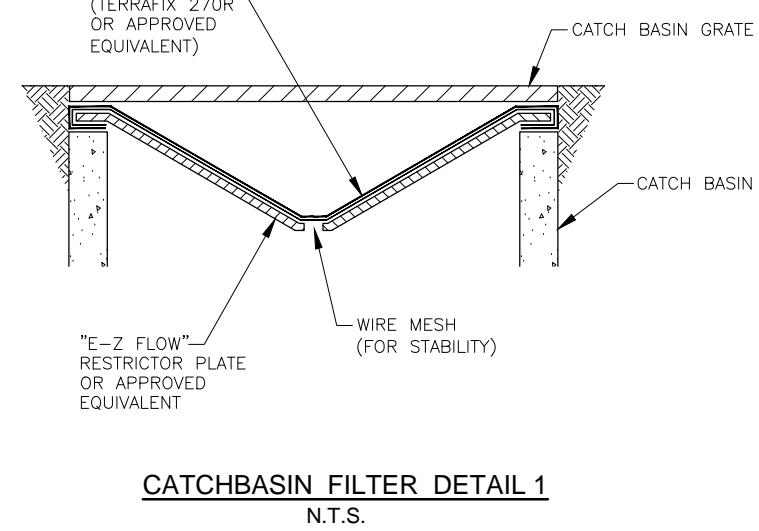
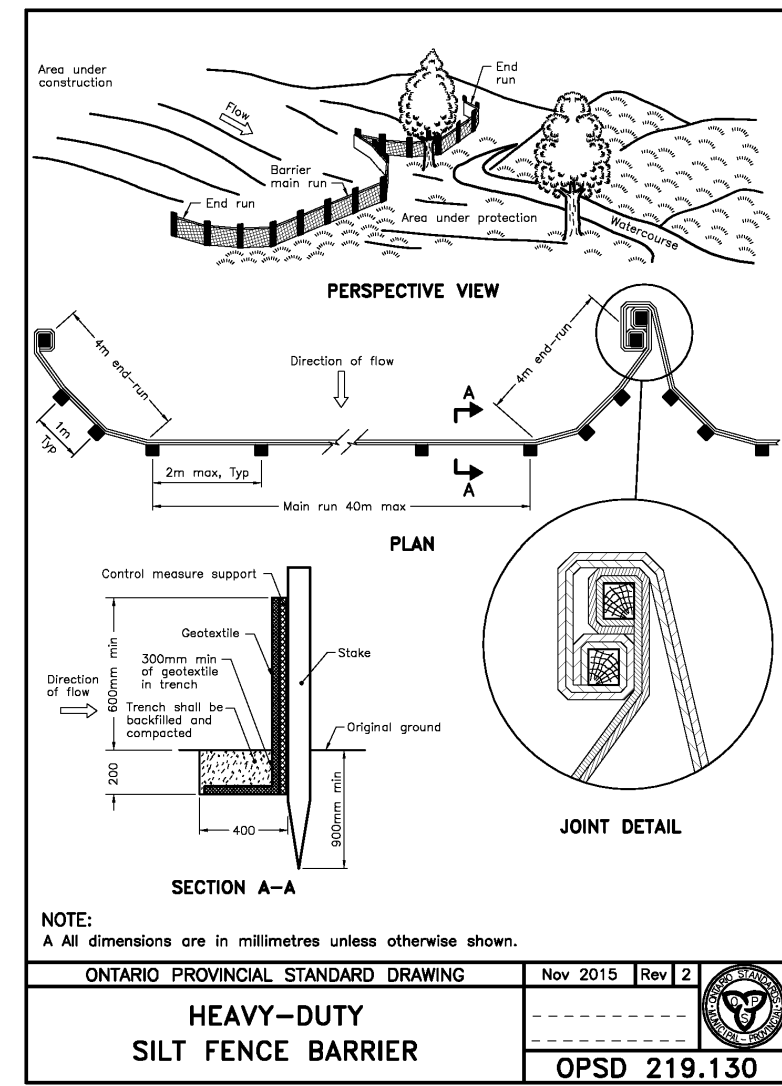
This tree protection barrier must remain in good condition and must not be removed or altered without authorization of Town of Cobourg, Parks Department - Forestry Section.

Concerns or inquiries regarding this TPZ can be directed to: 905-372-9641



LEGEND

- PROPERTY LINE
- TREE PROTECTION FENCING OPSD 220.010
- TREE PROTECTION FENCING OPSD 220.010 WITH SILT FENCE OPSD 219.130
- CATCHBASIN FILTER BUFFER SEE DETAIL 1
- ROCK CHECK DAM
- MUD MAT
- HICKENBOTTOM SEE DETAIL 2
- EXISTING TREE/TREE GROUP TO REMAIN
- STAGE 1 CLEARING AND GRUBBING
- STAGE 2 CLEARING AND GRUBBING
- TREE REMOVAL STAGE 1
- EXISTING ASH TREE TO BE REMOVED STAGE 1
- GROUP OF TREES STAGE 1 (ASH TREES WITHIN GROUP TO BE REMOVED)
- TEMPORARY SWALE



BENCHMARK: **BM 2** 80.681  
TOP OF SPIKE IN EAST FACE OF 0.4m CEDAR.

BENCHMARK: **BM 3** 81.305  
TOP OF SOUTH HUB OF HYDRANT ON THE NORTH SIDE OF KING ST. W. APPROXIMATELY 24m WEST OF HYDRO POLE MARKED S4-60.

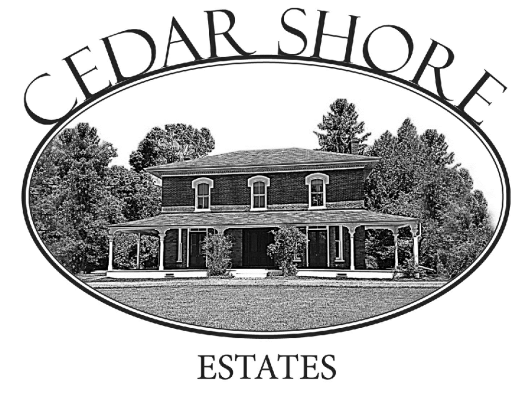


55 King Street East  
Bowmanville ON L1C 1N4  
Phone: 905 697-4464  
Fax: 905 697-0443  
www.cima.ca

CLIENT:

EIE CORPORATION

PROJECT NAME:



STAMPS:



No.	Date	Description	By
4.	03/16/2018	ISSUED FOR 3RD SUBMISSION	RC
3.	12/08/2017	ISSUED FOR 2ND SUBMISSION	RC
2.	05/17/2017	ISSUED FOR 1ST SUBMISSION	RC
1.	01/25/2017	PRE-CONSULTATION MEETING	RC

SHEET TITLE:

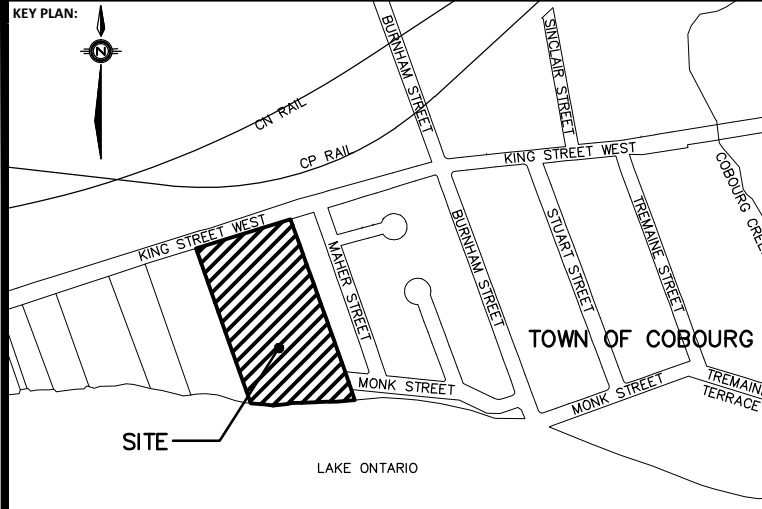
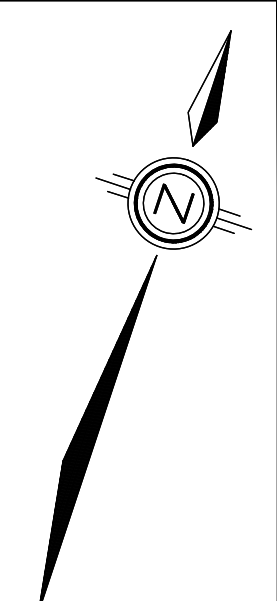
EROSION, SEDIMENT  
CONTROL, TREE  
REMOVAL & TREE  
PRESERVATION PLAN

DESCRIPTION:  
INFRASTRUCTURE

SCALE:  
HORIZONTAL : 1:500

PROJECT No: C14-0011	CLIENT File No:	DRAWING No: ESC
DRAWER: K. ALLEN	DESIGNER: P. MERRETT	APPROVER: W. McCRAE
APPROVER: R. CRESSMAN	DATE: JULY 16, 2015	SHEET No: 3 of 19





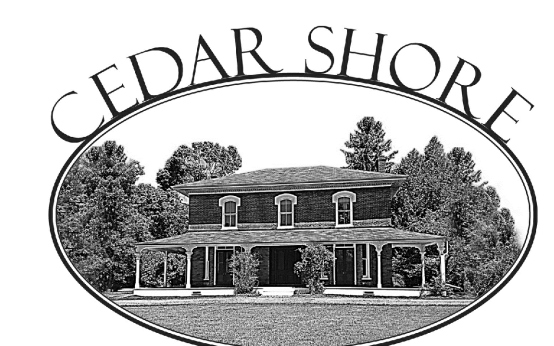
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[www.cima.ca](http://www.cima.ca)

CUENT:



STAMPS:	
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DESIGNED BY		APPROVED BY	
4.	03/16/2018	ISSUED FOR 3RD SUBMISSION	RC
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2.	05/17/2017	ISSUED FOR 1ST SUBMISSION	RC
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SHEET TITLE:

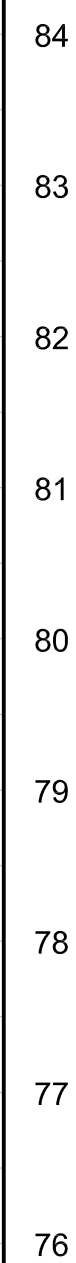
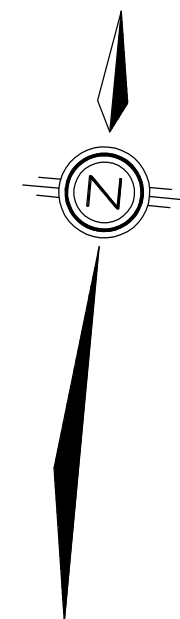
DISCIPLINE: INFRASTRUCTURE

SCALE:

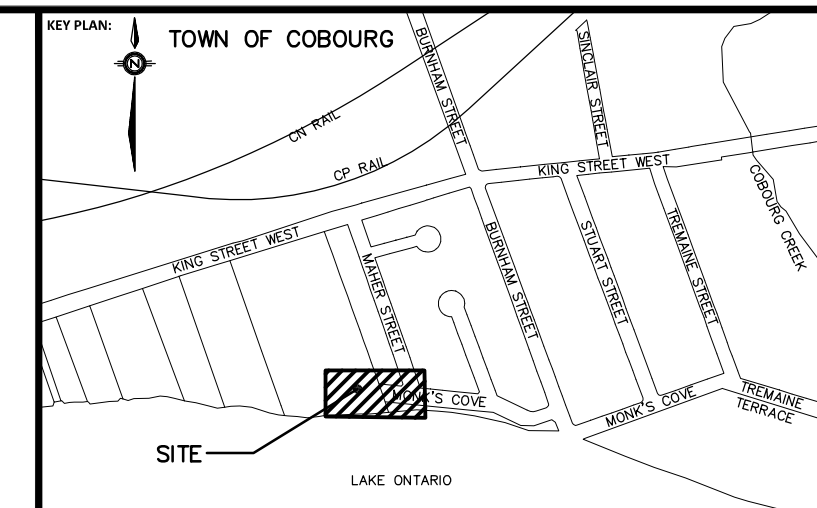
HORIZONTAL : 1:500

PROJECT No: C14-0011		CLIENT File No:
DRAFTER: K.ALLEN	DESIGNER: P. MERRETT	DRAWING No:  G-1
APPROVER: R.CRESSMAN	APPROVER: W. McCRAE	
DATE: DECEMBER 13, 2016		SHEET No:  4 of 19





PROPOSED											PROPOSED	HORIZONTAL : 1:250 VERTICAL : 1:50		
PROPOSED											PROPOSED	PROJECT No: C14-0011	CLIENT File No:	
											DRAFTER: K.ALLEN	DESIGNER: P. MERRETT	DRAWING No:	
CHAINAGE	3+000	3+020	3+040	3+060	3+080	3+100					CHAINAGE	APPROVER: R. CRESSMAN	APPROVER: W. McCRAE	P-1
											DATE: JULY 16, 2015		SHEET No: 5 of 19	



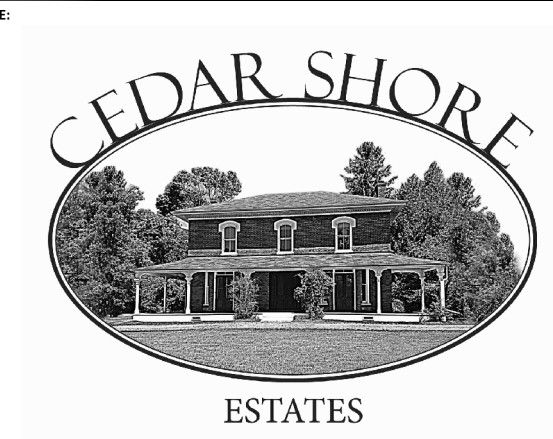
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[www.cima.ca](http://www.cima.ca)

CLIENT: \_\_\_\_\_

EIE CORPORATION



STAMPS:

DESIGNED BY: \_\_\_\_\_

CHECKED BY: \_\_\_\_\_

APPROVED BY: \_\_\_\_\_

Work Item #		Work Item Description	
5.	03/16/2018	ISSUED FOR 3RD SUBMISSION	RC
4.	02/23/2018	MOECC ECA SUBMISSION	RC
3.	12/08/2017	ISSUED FOR 2ND SUBMISSION	RC
2.	05/17/2017	ISSUED FOR 1ST SUBMISSION	RC
1.	01/25/2017	PRE-CONSULTATION MEETING	RC
No.	Date	Description	By

SHEET TITLE:

PROPOSED PLAN AND  
PROFILE  
PATH

DISCIPLINE: INFRASTRUCTURE

SCALE: \_\_\_\_\_

HORIZONTAL : 1:250

VERTICAL : 1:50

PROJECT No: C14-0011	CLIENT File No:
-------------------------	-----------------

DRAFTER: K.ALLEN	DESIGNER: P. MERRETT	DRAWING No:
APPROVER:	APPROVER:	

P-1

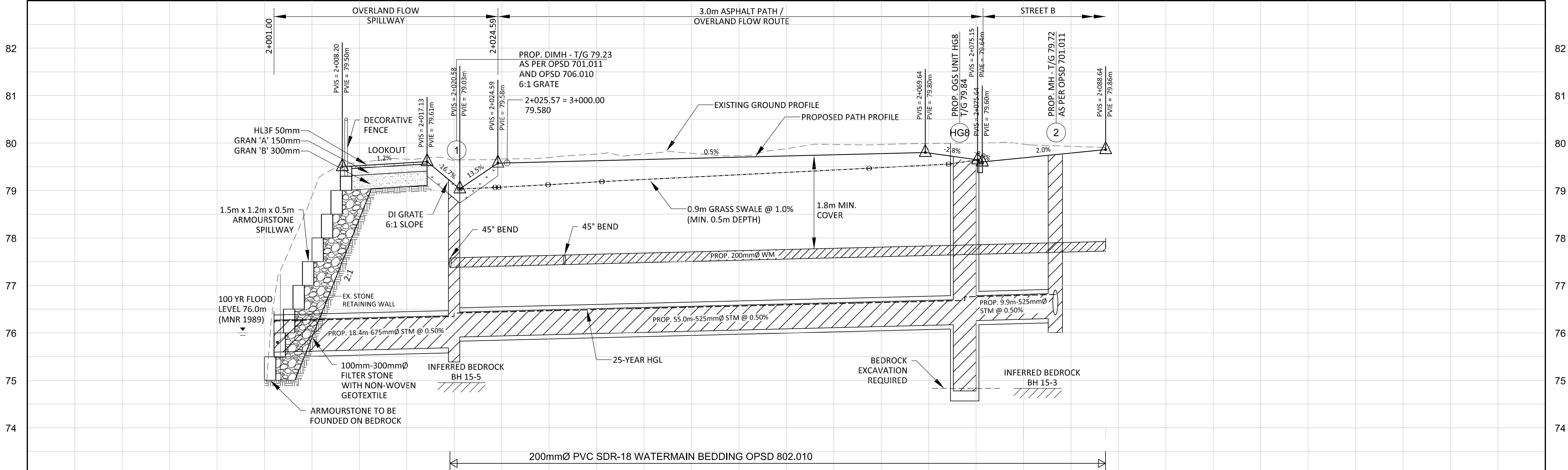
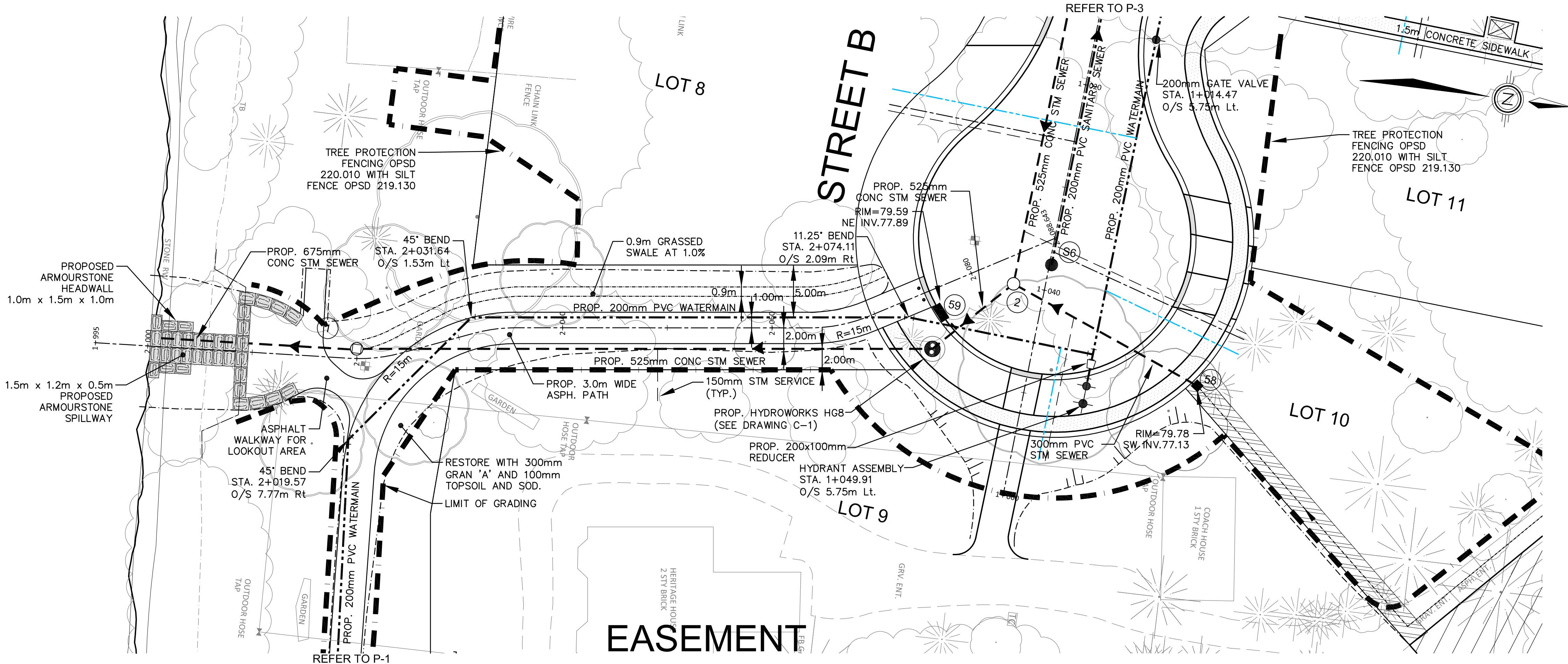
R. CRESSMAN	W. McCRAE	
DATE: 11/11/1991		SHEET No: 5 of 10

JULY 16, 2015 3 of 19

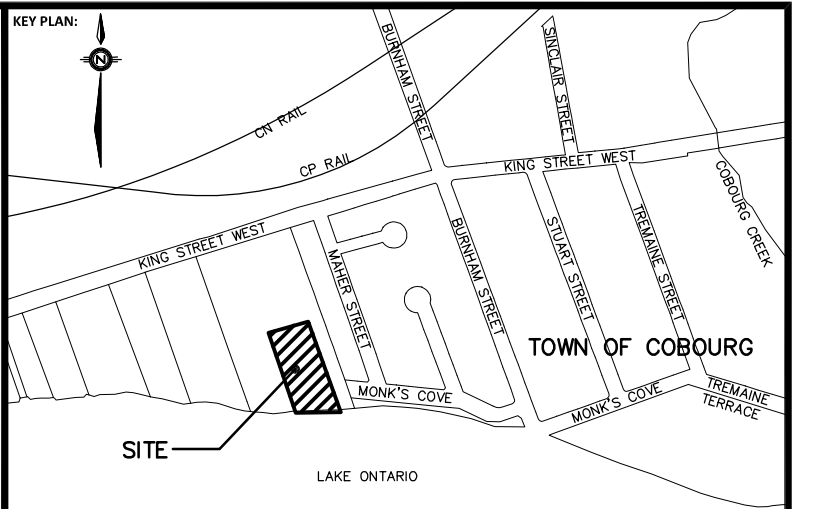


LAKE ONTARIO

ROAD DESIGN	
STREET 'B'	
HL3	40mm
HL8	50mm
GRAN 'A'	150mm
GRAN 'B'	400mm



PROPOSED STM	N 75.60	18.4m-675mmØ CONC STM @ 0.50%	S 75.69	N 75.90	55.0m-525mmØ CONC STM @ 0.50%	S 76.18	NW 76.25	SE 76.30	W 76.38	N 76.59	9.9m-525mmØ CONC STM @ 0.50%	PROPOSED STM
PROPOSED SAN												PROPOSED SAN
CHAINAGE	2+000	2+001.0	2+020	2+040	2+060	2+073.8	2+080	2+083.3				CHAINAGE

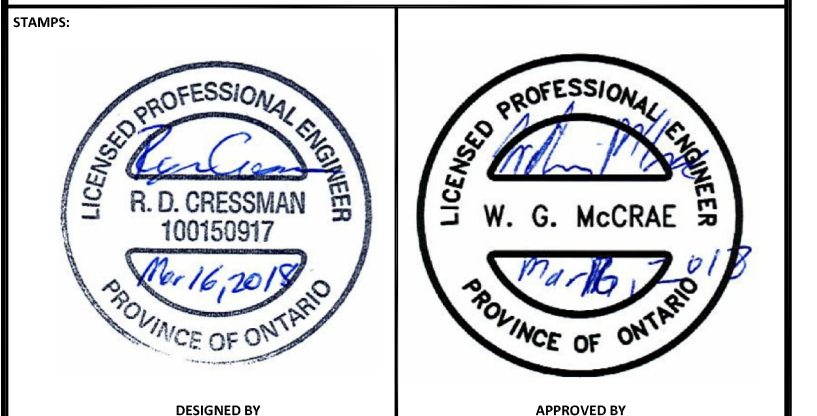
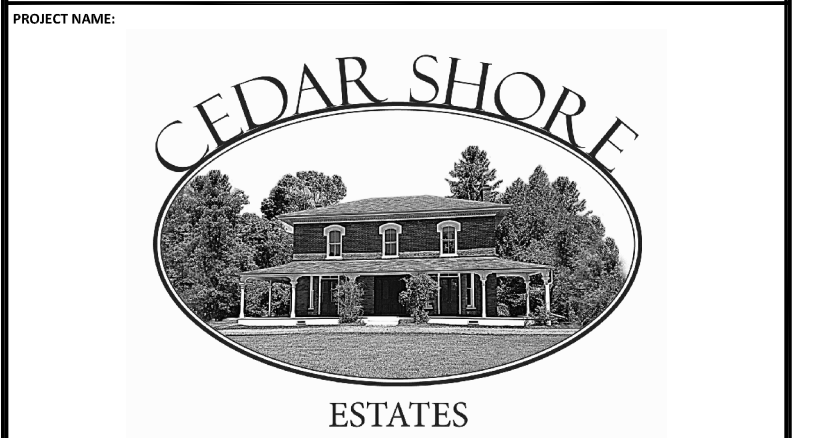


BENCHMARK	80.681
BM 2	TOP OF SPIKE IN EAST FACE OF 0.4m CEDAR.
BM 3	TOP OF SOUTH HUB OF HYDRANT ON THE NORTH SIDE OF KING ST.W. APPROXIMATELY 24m WEST OF HYDRO POLE MARKED S4-60.



55 King Street East  
Bowmanville ON L7C 1N4  
Phone: 905 697-4464  
Fax: 905 697-0443  
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EIE CORPORATION



No.	Date	Description	By
5.	03/16/2018	ISSUED FOR 3RD SUBMISSION	RC
4.	02/23/2018	MOECC ECA SUBMISSION	RC
3.	12/08/2017	ISSUED FOR 2ND SUBMISSION	RC
2.	05/17/2017	ISSUED FOR 1ST SUBMISSION	RC
1.	01/25/2017	PRE-CONSULTATION MEETING	RC

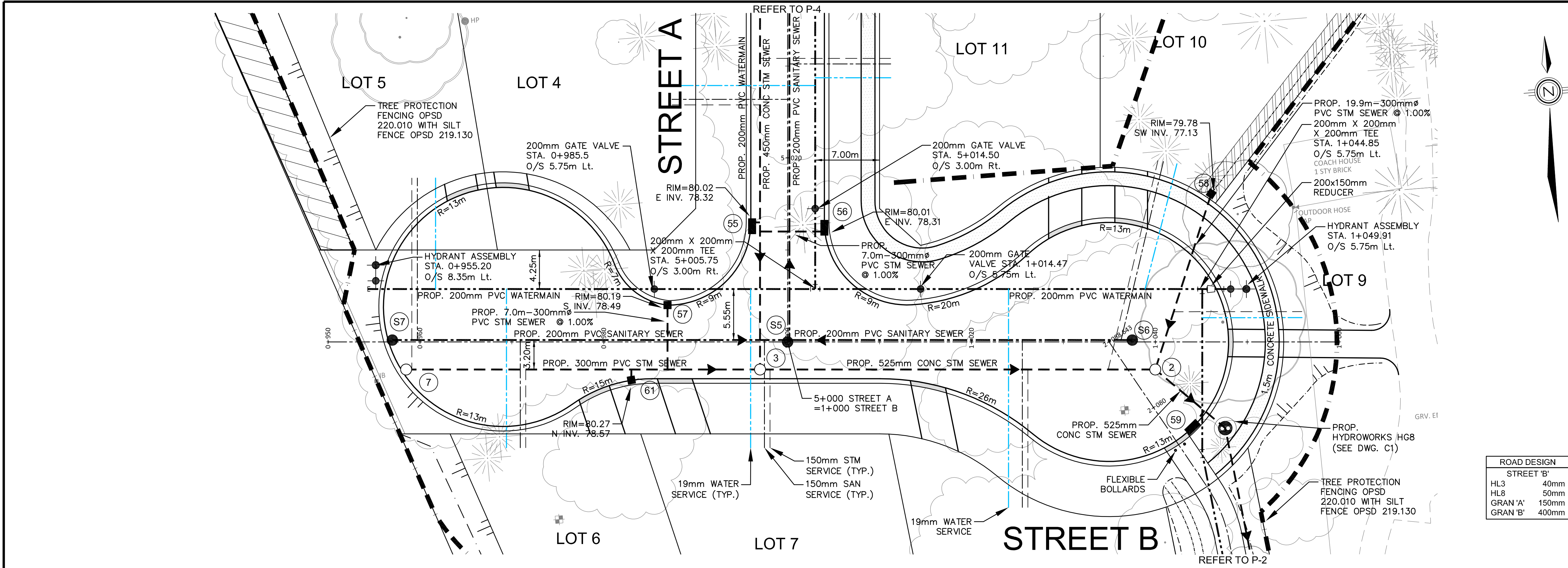
PROPOSED PLAN AND PROFILE EASEMENT

INFRASTRUCTURE

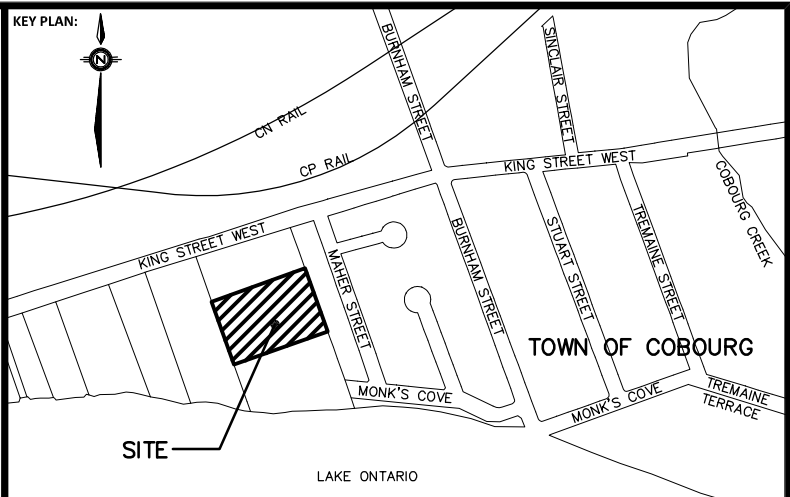
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VERTICAL : 1:50

PROJECT No:	C14-0011	CLIENT File No:	
DRAWN:	K. ALLEN	DESIGNED:	P. MERRETT
APPROVED:	R. CRESSMAN	APPROVED:	W. McCRAE
DATE:	JULY 16, 2015	SHEET No:	6 of 19





ROAD DESIGN	
STREET 'B'	
HL3	40mm
HL8	50mm
GRAN 'A'	150mm
GRAN 'B'	400mm



BENCHMARK	80.681
BM 2	TOP OF SPIKE IN EAST FACE OF 0.4m CEDAR.
BM 3	TOP OF SOUTH HUB OF HYDRANT ON THE NORTH SIDE OF KING ST.W. APPROXIMATELY 24m WEST OF HYDRO POLE MARKED S4-60.
81.305	



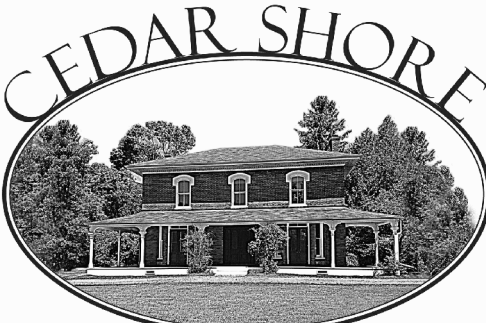
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CIENT:

EIE CORPORATION

PROJECT NAME:



ESTATES

STAMPS:	
	
DESIGNED BY	APPROVED BY

No.	Date	Description	By
5.	03/16/2018	ISSUED FOR 3RD SUBMISSION	RC
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2.	05/17/2017	ISSUED FOR 1ST SUBMISSION	RC
1.	01/25/2017	PRE-CONSULTATION MEETING	RC

SHEET TITLE:

PROPOSED PLAN AND PROFILE  
STREET B  
FROM STA.: 0+950 TO STA.: 1+060

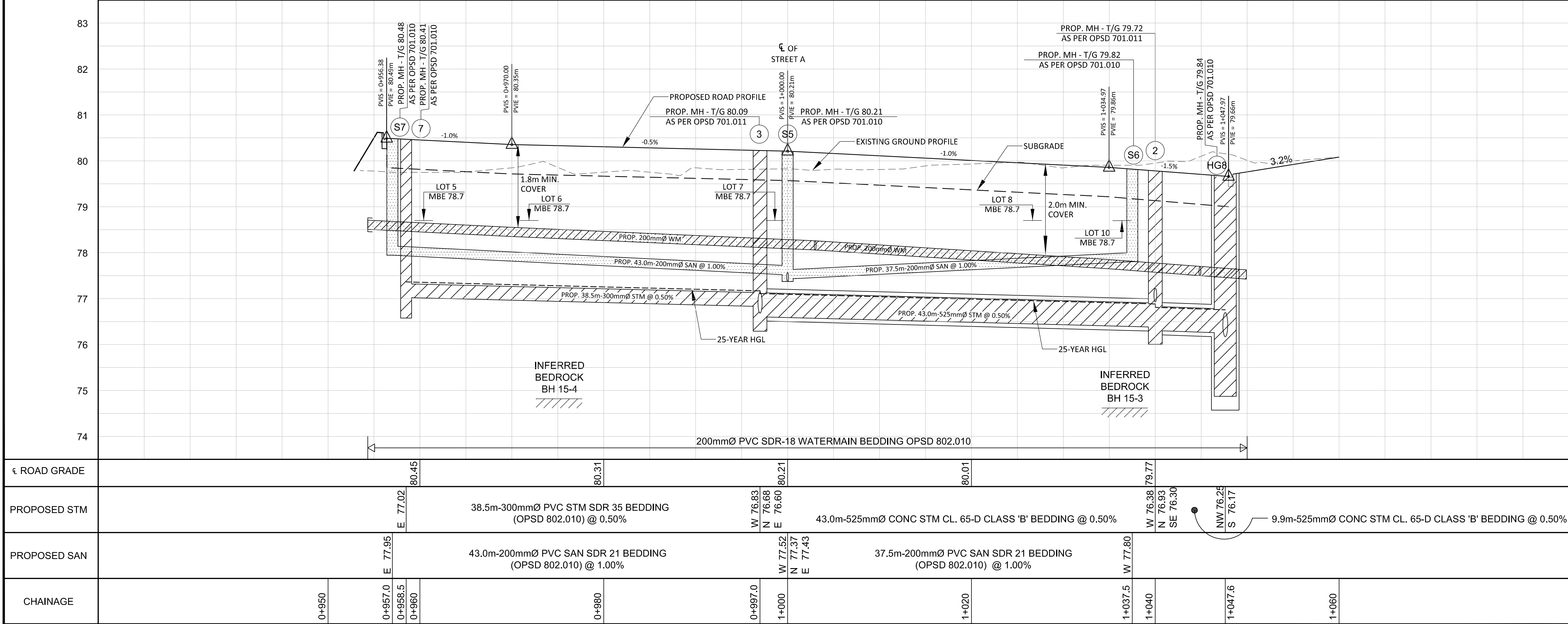
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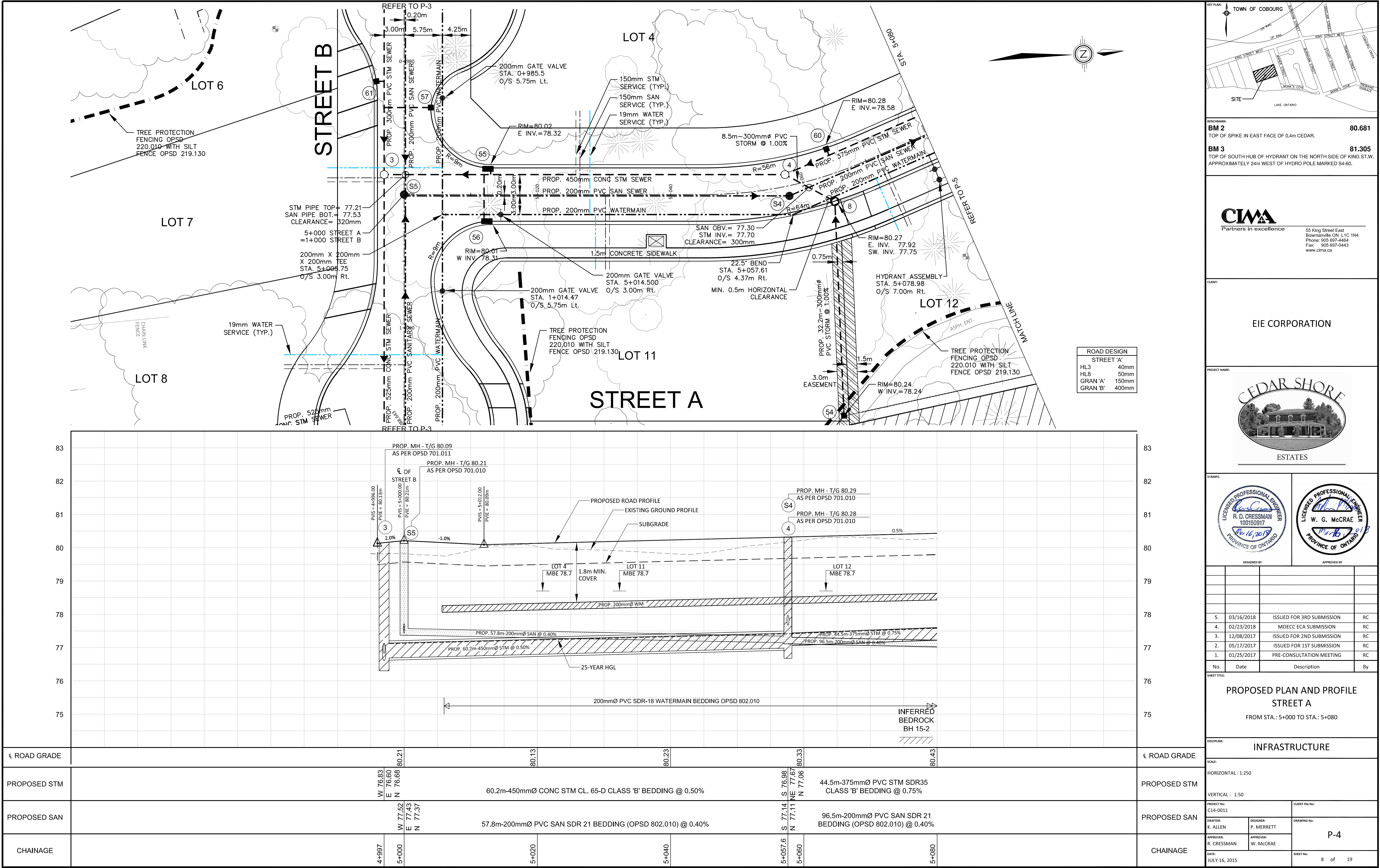
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HORIZONTAL : 1: 250  
VERTICAL : 1: 50

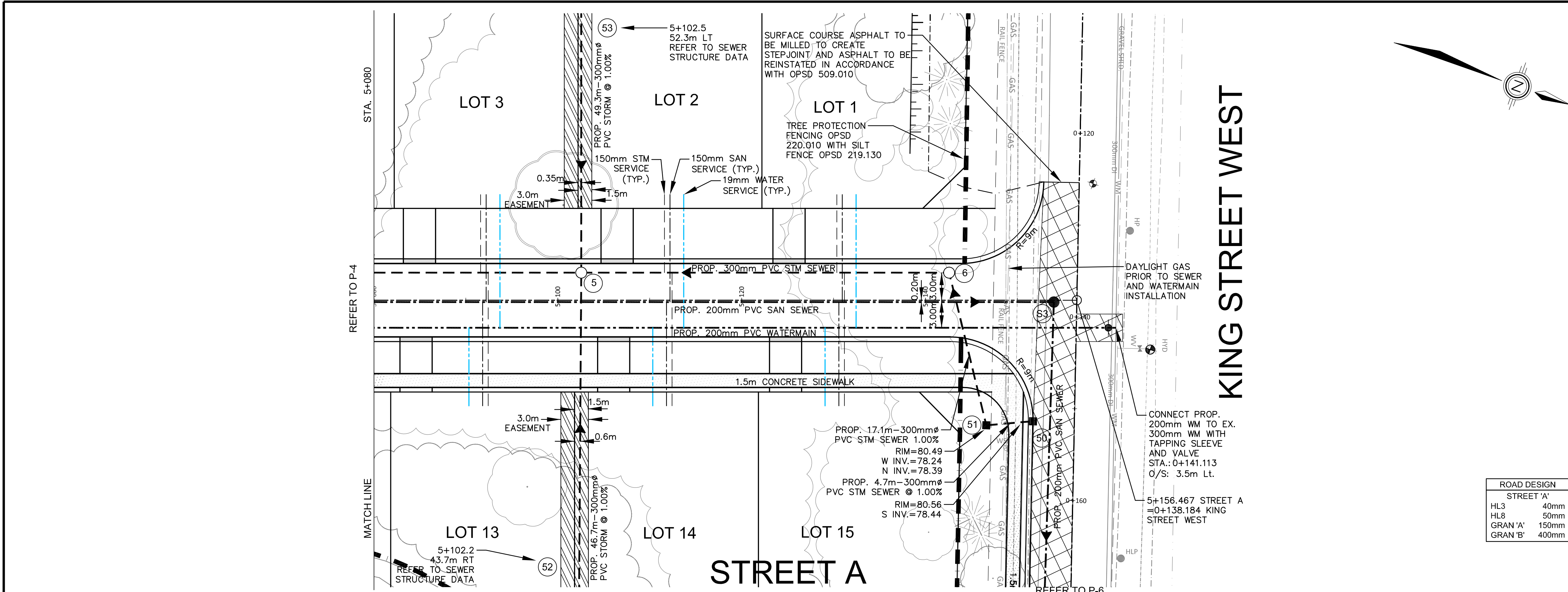
PROJECT No: C14-0011	CLIENT File No:
DRAWN: K. ALLEN	DESIGNER: P. MERRETT
APPROVER: R. CRESSMAN	APPROVER: W. McCRAE
DATE: JULY 16, 2015	SHEET No: 7 of 19



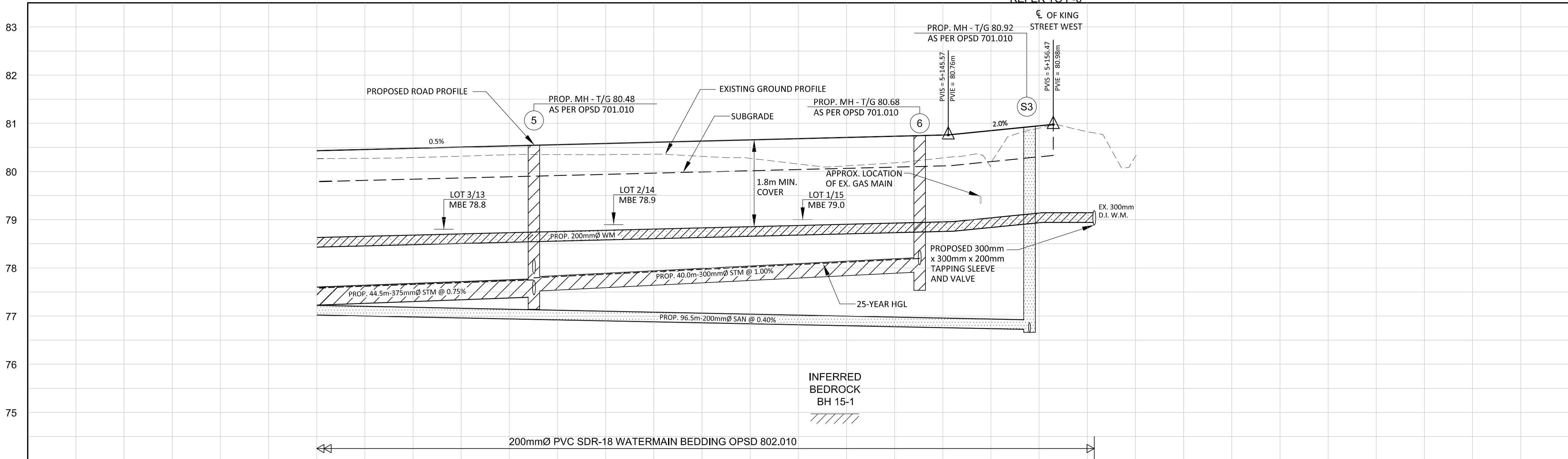
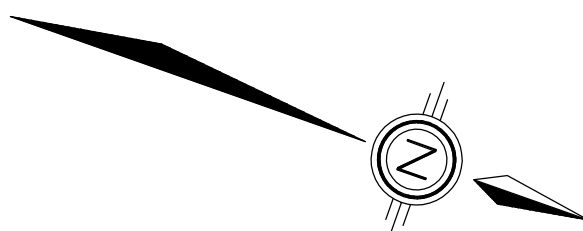




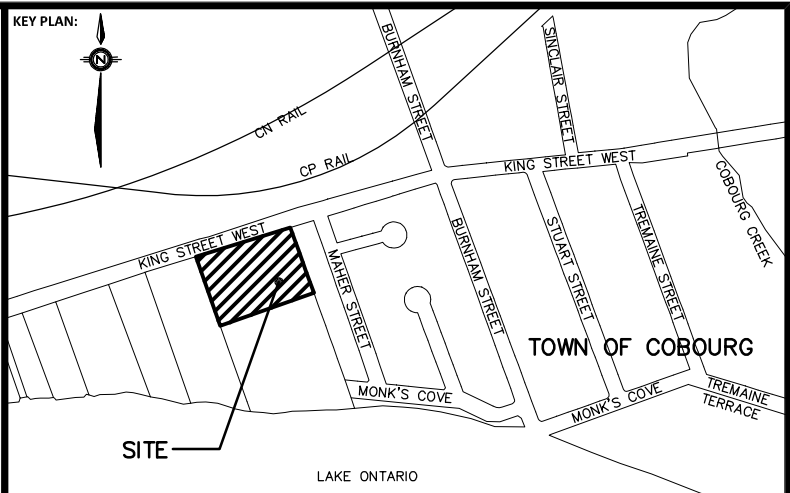




ROAD DESIGN	
STREET 'A'	
HL3	40mm
HL8	50mm
GRAN 'A'	150mm
GRAN 'B'	400mm



€ ROAD GRADE	80.43	80.53	80.63	80.73	80.92	80.92
PROPOSED STM	44.5m-375mmØ PVC STM SDR35 CLASS 'B' BEDDING @ 0.75% S 77.39 W 77.44 E 77.88 N 77.52					
PROPOSED SAN	96.5m-200mmØ PVC SAN SDR 21 BEDDING (OPSD 802.010) @ 0.40%					
CHAINAGE	5+080	5+100	5+102.6	5+120	5+140	5+160



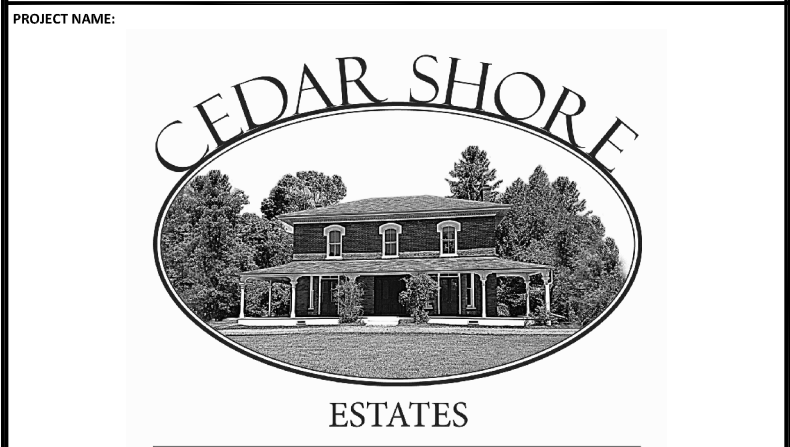
BENCHMARK	80.681
TOP OF SPIKE IN EAST FACE OF 0.4m CEDAR.	
B.M. 3	81.305
TOP OF SOUTH HUB OF HYDRANT ON THE NORTH SIDE OF KING ST.W. APPROXIMATELY 24m WEST OF HYDRO POLE MARKED S4-60.	



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2.	05/17/2017	ISSUED FOR 1ST SUBMISSION	RC
1.	01/25/2017	PRE-CONSULTATION MEETING	RC

PROPOSED PLAN AND PROFILE  
STREET A  
FROM STA.: 5+080 TO STA.: 5+156.67

INFRASTRUCTURE

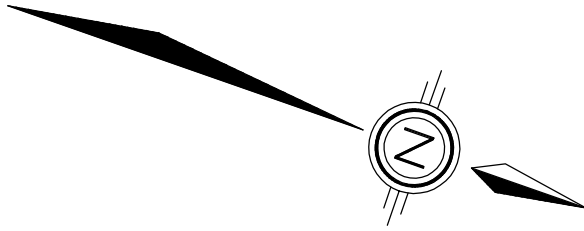
HORIZONTAL : 1:250  
VERTICAL : 1:50

PROJECT No: C14-0011	CLIENT File No:
DRAWN BY: K. ALLEN	DESIGNED BY: P. MERRETT
APPROVED BY: R. CRESSMAN	APPROVED BY: W. McCRAE
DATE: JULY 16, 2015	SHEET No: 9 of 19

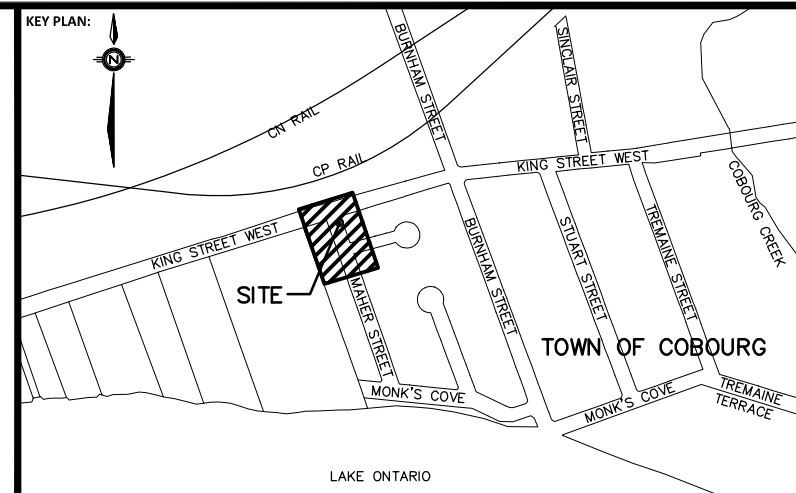








ROAD DESIGN	
MAHER STREET	
HL3	40mm
HL8	50mm
GRAN 'A'	150mm
GRAN 'B'	300mm



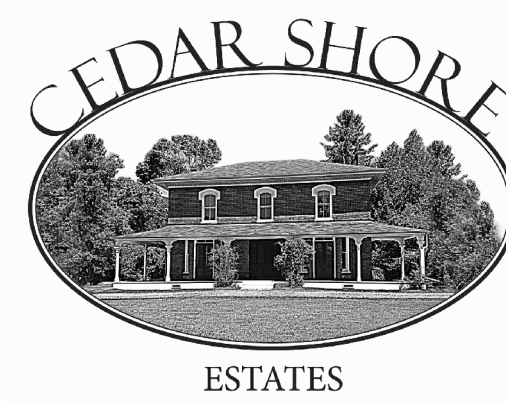
BENCHMARK:	
<b>BM 2</b>	<b>80.681</b>
TOP OF SPIKE IN EAST FACE OF 0.4m CEDAR.	
<b>BM 3</b>	<b>81.305</b>
TOP OF SOUTH HUB OF HYDRANT ON THE NORTH SIDE OF KING ST.W. APPROXIMATELY 24m WEST OF HYDRO POLE MARKED S4-60.	



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CIENT:

EIE CORPORATION



STAMPS:

DESIGNED BY

APPROVED BY

5.	03/16/2018	ISSUED FOR 3RD SUBMISSION		RC
4.	02/23/2018	MOECC ECA SUBMISSION		RC
3.	12/08/2017	ISSUED FOR 2ND SUBMISSION		RC
2.	05/17/2017	ISSUED FOR 1ST SUBMISSION		RC
1.	01/25/2017	PRE-CONSULTATION MEETING		RC
No.	Date	Description		By

SHEET TITLE:

PROPOSED PLAN AND PROFILE  
MAHER STREET  
FROM STA.: 12+000 TO STA.: 12+076

DISCIPLINE: INFRASTRUCTURE

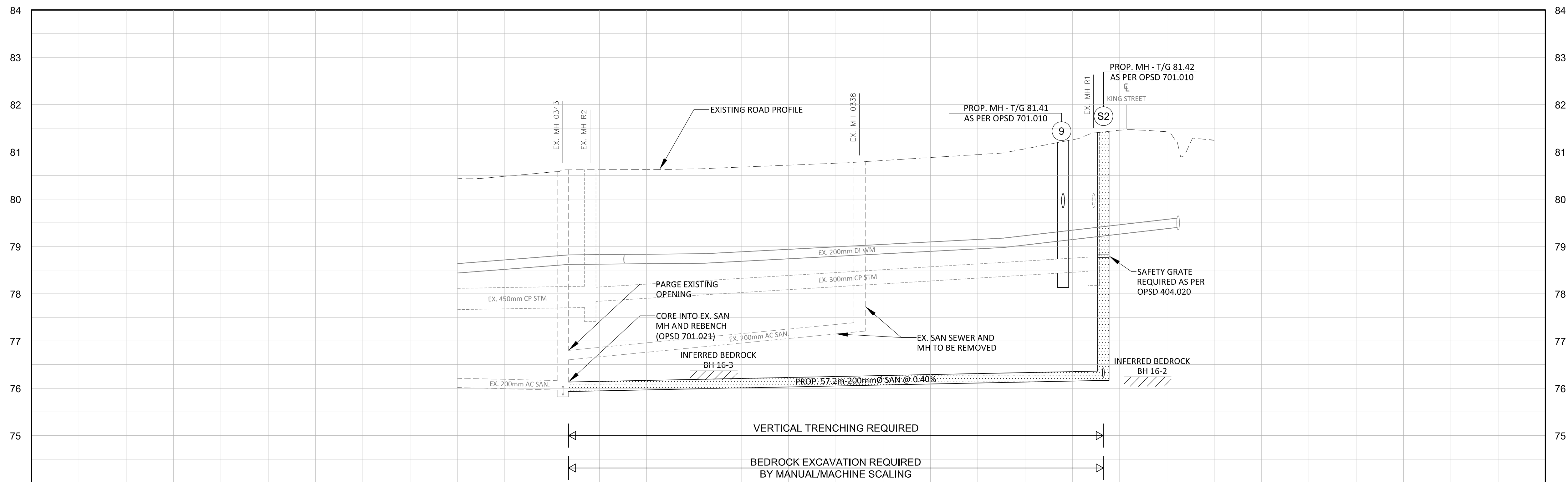
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VERTICAL : 1:50

PROJECT No: C14-0011	CLIENT File No:
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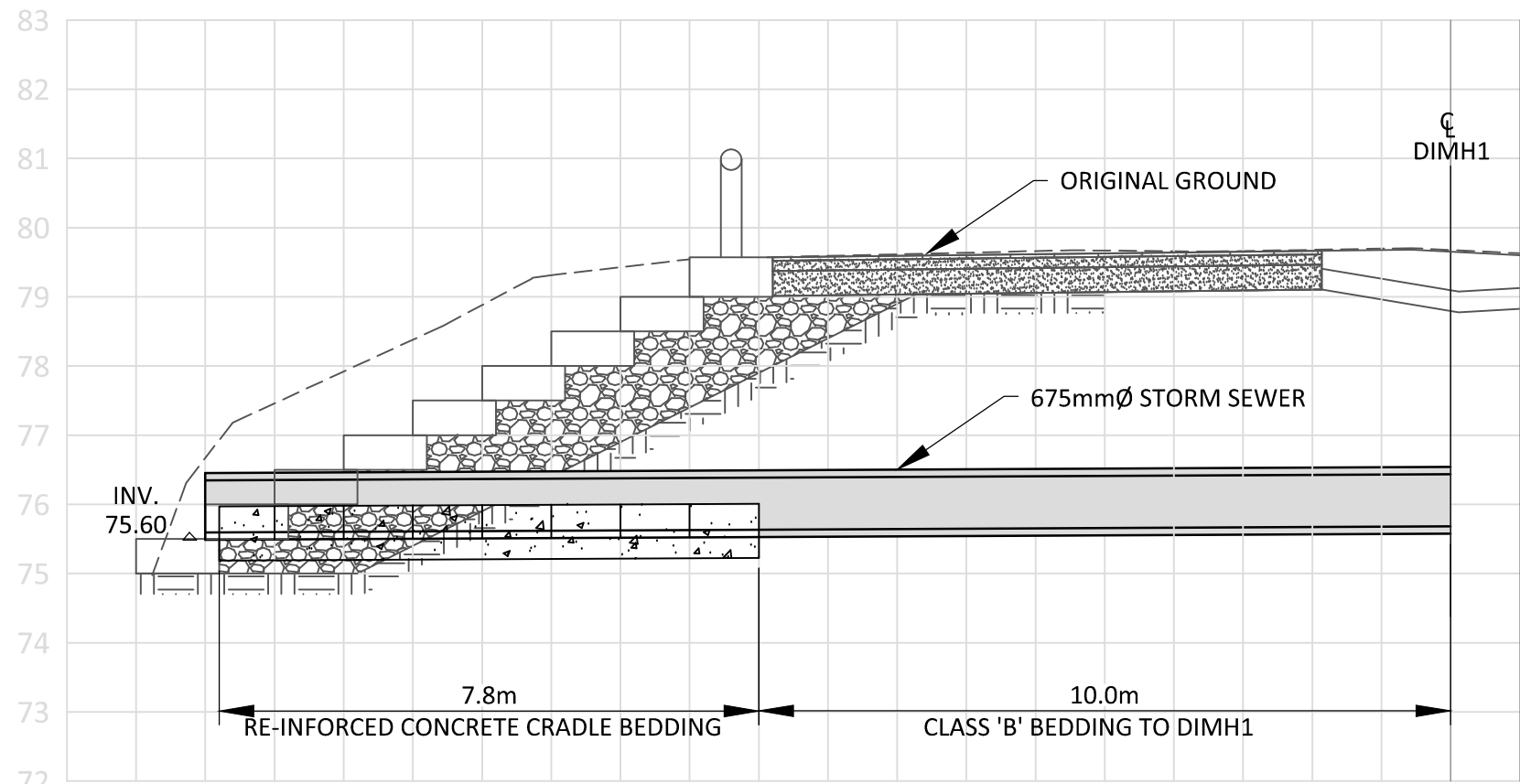
DRAFTER: K.ALLEN	DESIGNER: P. MERRETT	DRAWING No:  P-7
APPROVER:	APPROVER:	

APPROVER: R. CRESSMAN	APPROVER: W. McCRAE	
DATE:		SHEET No:

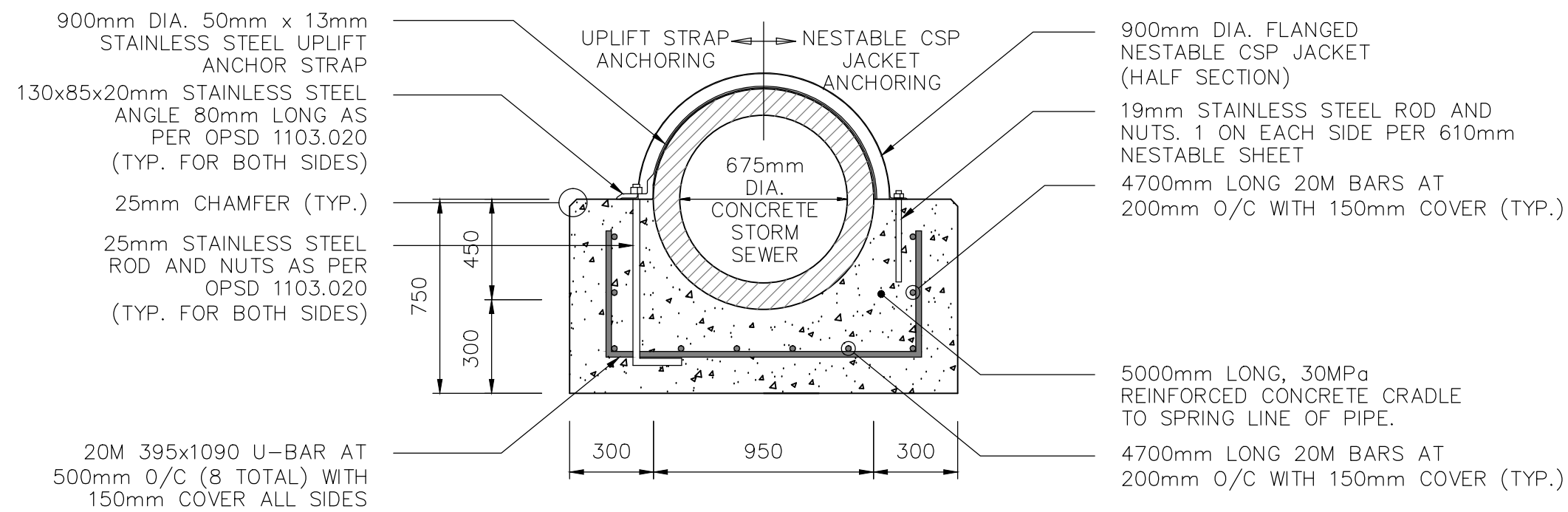


PROPOSED STM											S 78.48 E 78.82	PROPOSED STM	HORIZONTAL : 1:250  VERTICAL : 1:50		
PROPOSED SAN	57.2m-200mmØ PVC SAN SDR 21 BEDDING (OPSD 802.010) @ 0.40%										S 76.00 E 75.65 N 78.94	S 76.17 W 76.23	PROPOSED SAN	PROJECT No: C14-0011	CLIENT File No:
CHAINAGE	12+000	12+011.1	12+020	12+040	12+060	12+064.0	12+068.3	12+076	CHAINAGE	DESIGNER: K. ALLEN	DESIGNER: P. MERRETT	DRAWING No:  P-7			
										APPROVER: R. CRESSMAN	APPROVER: W. McCRAE				
										DATE: JULY 16, 2015	SHEET No: 11 of 19				

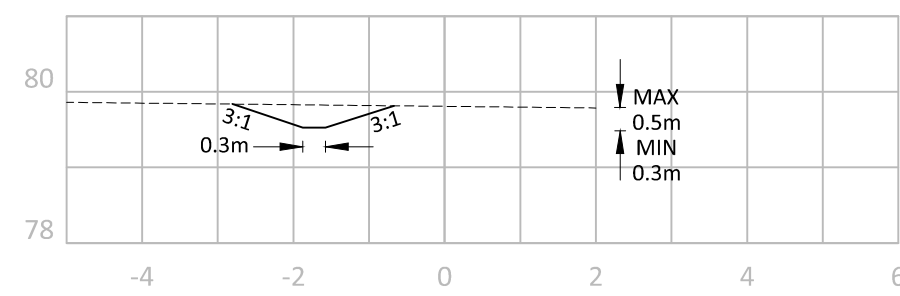
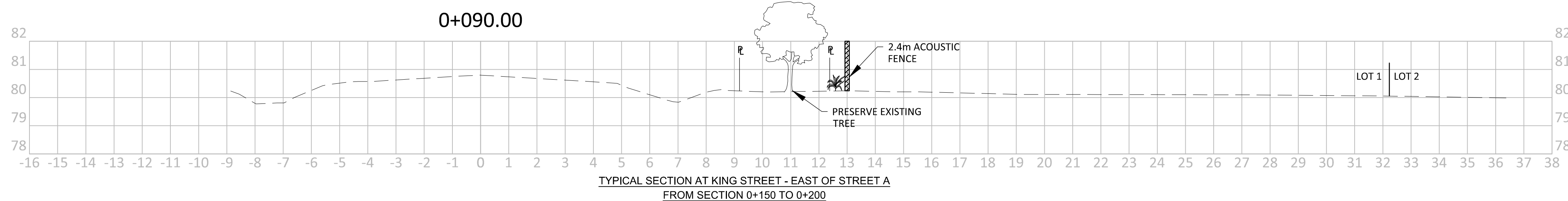
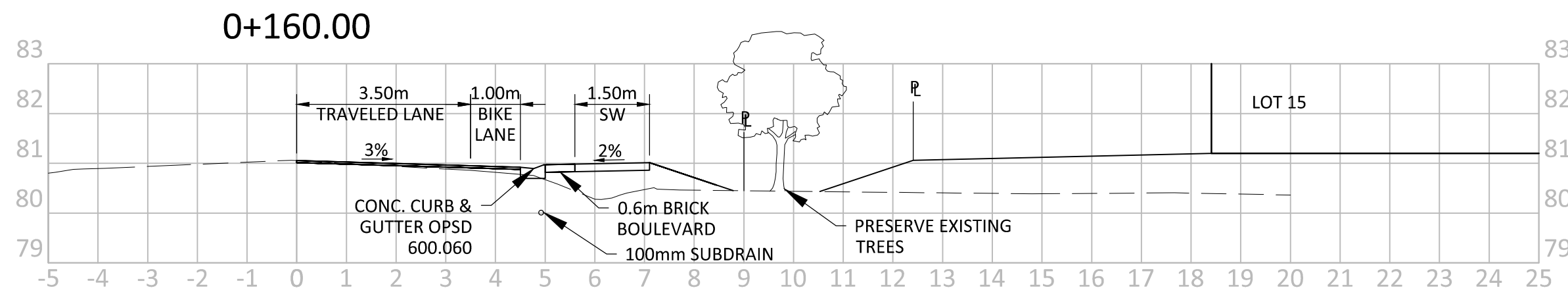
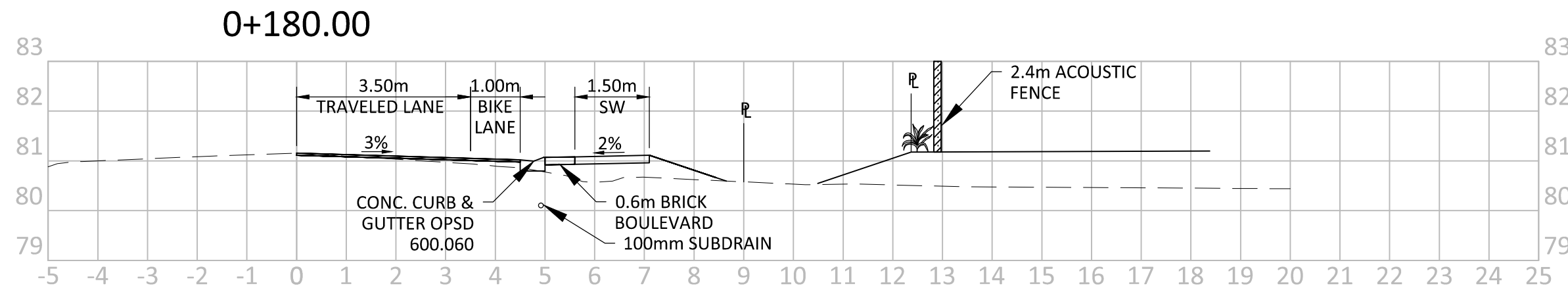
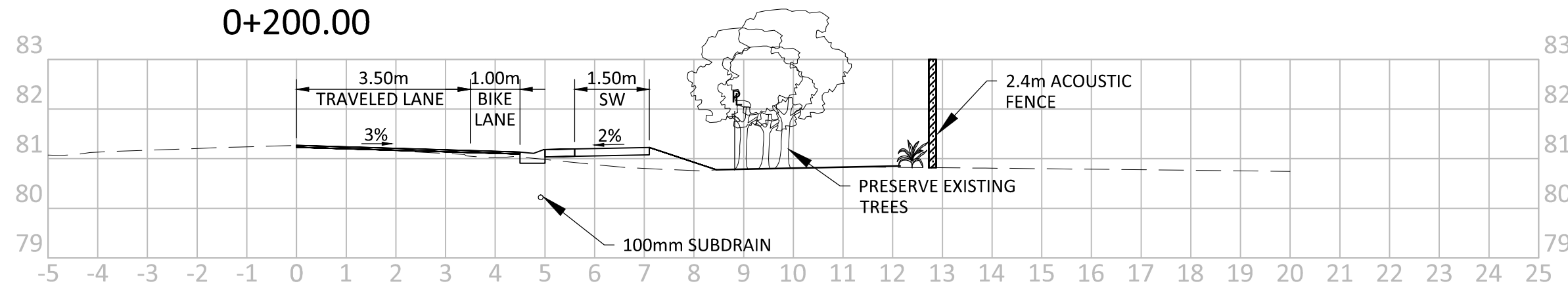
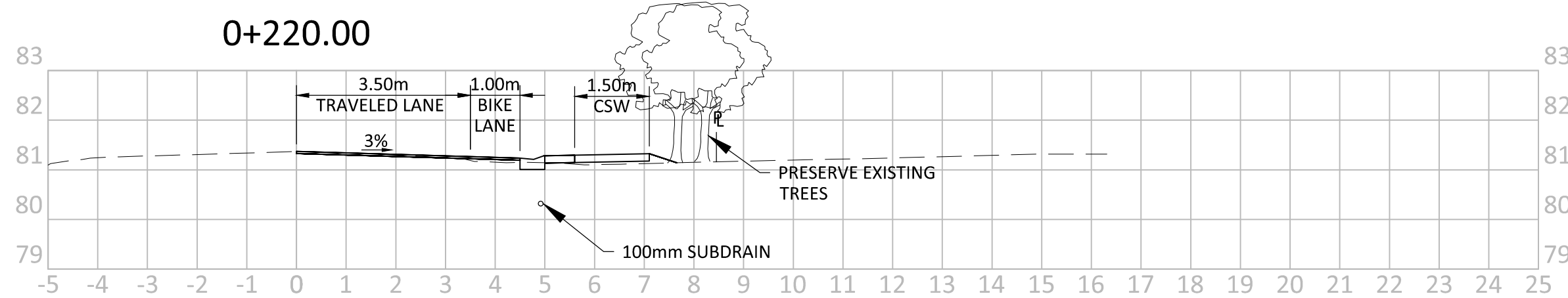




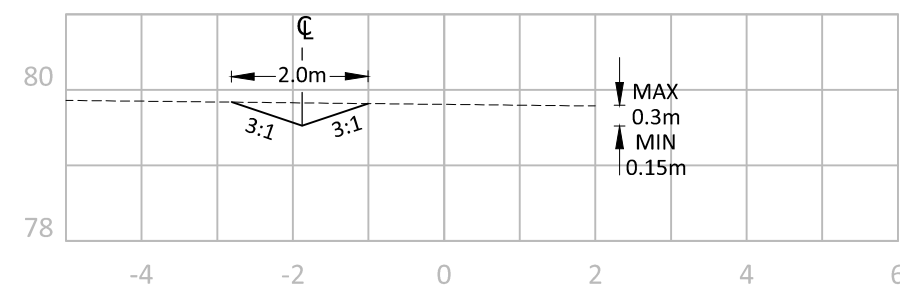
PROFILE: STORM OUTLET AT SHORE REVETMENT  
SCALE = 1:100



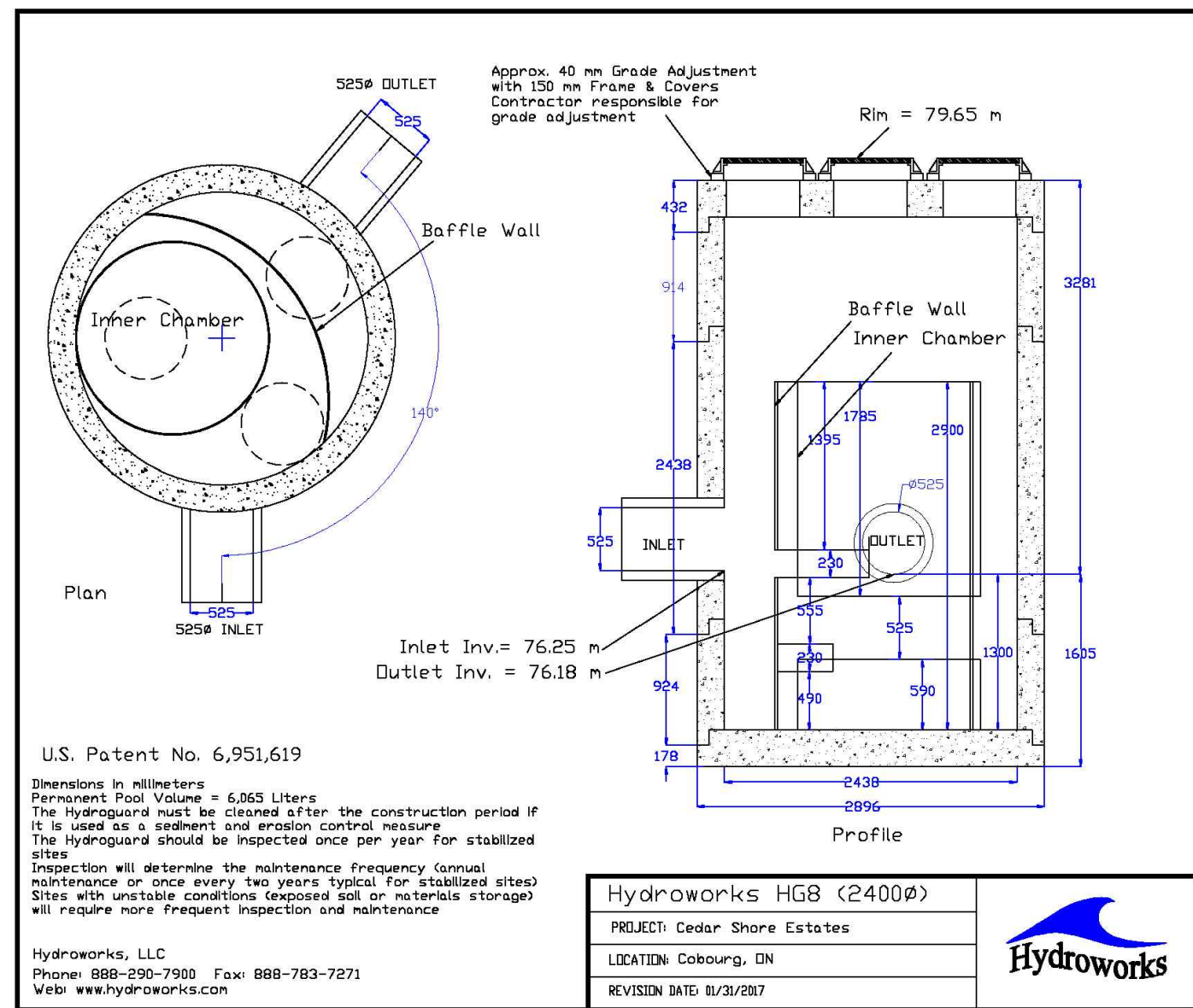
DETAIL: STORM OUTLET AT SHORE REVETMENT  
N.T.S.



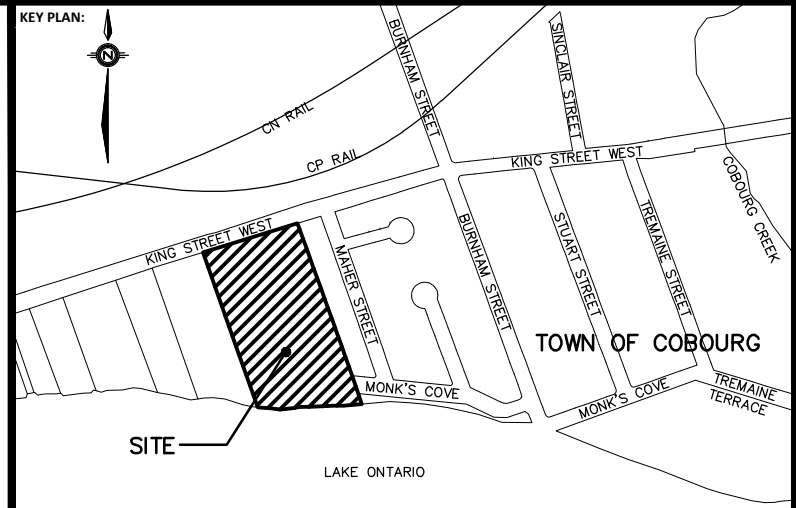
REAR YARD SWALE X-SECTION  
SCALE = 1:100



SIDE YARD SWALE X-SECTION  
SCALE = 1:100



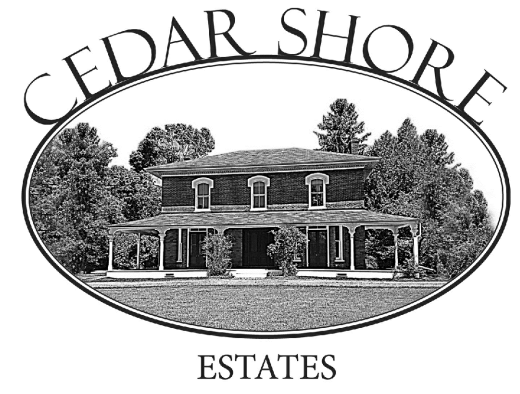
Hydroworks HGB (2400#)  
PROJECT: Cedar Shore Estates  
LOCATION: Cobourg, ON  
REVISION DATE: 01/28/2017



BM 2  
TOP OF SPIKE IN EAST FACE OF 0.4m CEDAR.  
80.681  
BM 3  
TOP OF SOUTH HUB OF HYDRANT ON THE NORTH SIDE OF KING ST. W.  
APPROXIMATELY 24m WEST OF HYDRO POLE MARKED S4-60.  
81.305

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55 King Street East  
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EIE CORPORATION



DESIGNED BY  
APPROVED BY  
R. D. CRESSMAN  
W. G. McCRAE  
PROVINCE OF ONTARIO

No.	Date	Description	By
5.	03/16/2018	ISSUED FOR 3RD SUBMISSION	RC
4.	02/23/2018	MOECC ECA SUBMISSION	RC
3.	12/08/2017	ISSUED FOR 2ND SUBMISSION	RC
2.	05/17/2017	ISSUED FOR 1ST SUBMISSION	RC
1.	01/25/2017	PRE-CONSULTATION MEETING	RC

CROSS-SECTIONS  
KING STREET

INFRASTRUCTURE

SCALE  
HORIZONTAL : 1:100  
PROJECT No:  
C14-0011  
CLIENT File No:  
DRAFTER:  
K. ALLEN  
DESIGNER:  
P. MERRETT  
DRAWING No:  
APPROVER:  
R. CRESSMAN  
APPROVER:  
W. McCRAE  
DATE:  
JULY 16, 2015  
SHEET No:  
12 of 19







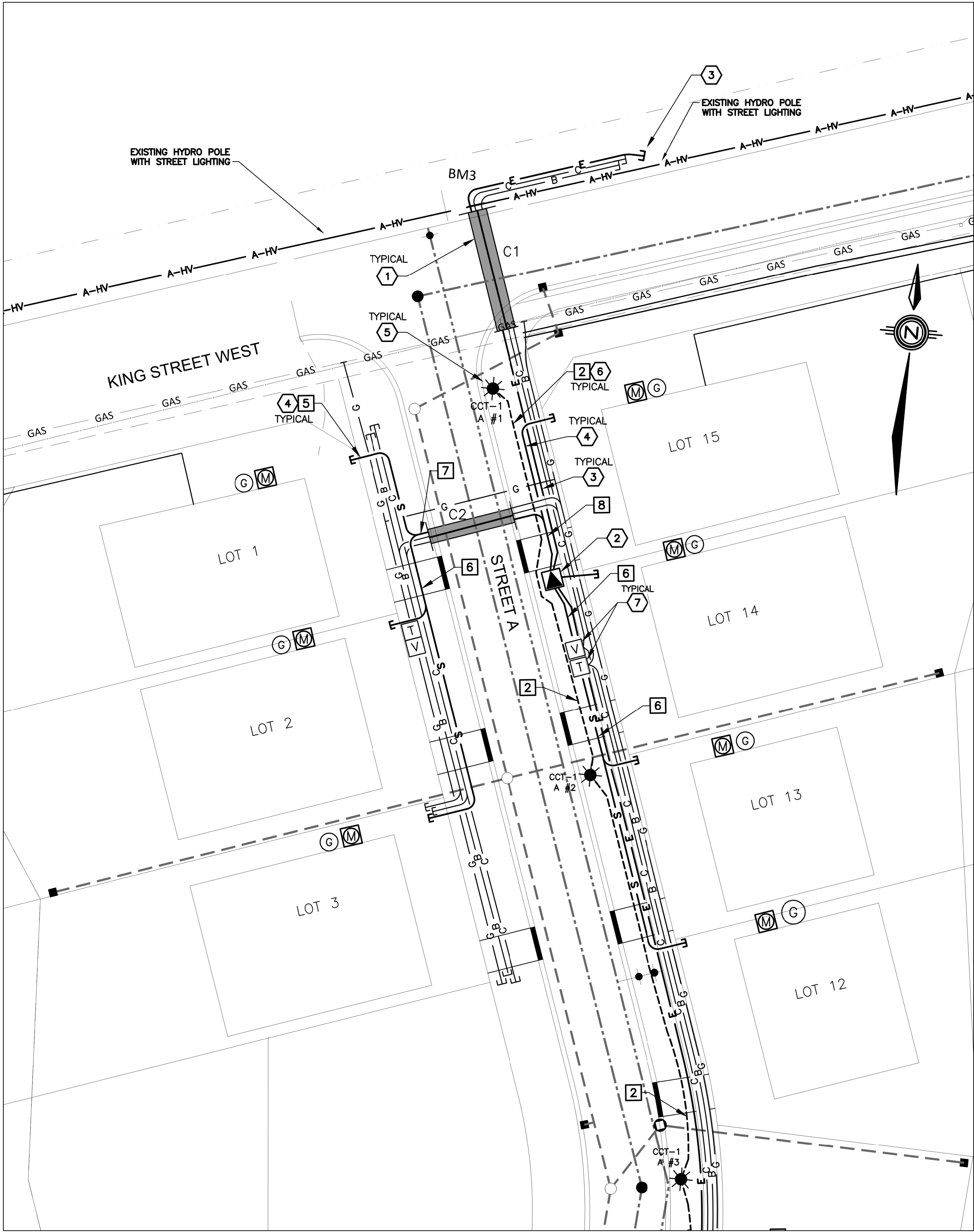






PROJECT No: C14-0011		CLIENT File No:
DRAWER: P.BROCKS	DESIGNER: P.BROCKS	DRAWING No:  L-2
APPROVER: L.CULLEN	APPROVER: W. McCRAE	
DATE: April, 2017		SHEET No: 15 of 19





STREET LIGHTING SCHEDULE

TYPE	MANUFACTURER No.	VOLTS	LAMP		MOUNTING	ACCESSORIES	QUANTITY	DETAILS/REMARKS
			WATTS	TYPE				
A	KING LUMINAIRE (CLEVELAND) #K56-C-T-P4AR-III- 60(SSL)-7030-120:240V- PR7-#5	240	62W	LED 4000K/HE5	POST TOP, 4.57m MOUNTING HEIGHT, #E200-APO-G-S11 C/W 140-35/35	6.1m OCTAGONAL TAPERED CONCRETE POLE,	8	BLACK POLISHED FINISH, TWISTLOCK RECEIPT PHOTOCELL.
B	KING LUMINAIRE (CLASSIC) #KL-C-C-LOC-V- 40(SSL)-4003-240V -S11-DB-PBC	240	42W	LED 3500K	INTEGRATED BOLLARD	1.067m OCTAGONAL CONCRETE BOLLARD, 2-PIECE BASE COVER	5	BLACK POLISHED FINISH, PHOTO BUTTON CELL

STREET LIGHTING LOAD SCHEDULE

PHASE	CIRCUIT	CIRCUIT LOAD (WATT)	PROTECTION (AMPS)
A	CCT-1	496	20
B	CCT-2	210	20

## GENERAL NOTES

### LIGHTING

- ALL WORK AND ASSOCIATED MATERIALS ILLUSTRATED ON THIS PLAN ARE BY THE SITEWORK ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED.
- ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH ELECTRICAL SPECIFICATIONS ON DRAWING 'E-4' AND TO 'LAKEFRONT UTILITIES INC.' (LUI) CONSTRUCTION SPECIFICATIONS.
- ALL STREET LIGHTING POLE, LUMINAIRE AND ACCESSORIES C/W DUCTS AND WIRING ARE TO BE SUPPLIED AND INSTALLED BY THE SITEWORK ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED.
- EACH LUMINAIRE POLE MUST BE GROUNDED WITH A 3.0m ELECTRODE INSTALLED ACCORDING TO THE CURRENT ONTARIO ELECTRICAL CODE AND WILL BE TIED TO THE POLE WITH AN ALUMINOTHERMIC WELD OR A COMPRESSED LUG. SEE CONCRETE BASE DETAIL '1/E-3'.
- LIGHTING CIRCUIT CONNECTIONS AND SPLICES MUST BE DONE WITH COMPRESSION LUGS SUCH AS BLACKBURN SERIES 54 AND BE WITH INSULATION EQUIVALENT TO THAT OF WIRING.
- THE INSTALLATION OF A STREET LIGHTING BREAKER PANEL PEDESTAL, INCLUDING FOOTING, DUCT AND WIRING UP TO THE CONNECTION POINT ARE TO BE COMPLETED BY THE SITEWORK ELECTRICAL CONTRACTOR.

### POWER / COMMUNICATION

- ALL ELECTRICAL DISTRIBUTION SITEWORKS TO BE IN ACCORDANCE WITH CURRENT LAKEFRONT UTILITIES INC (LUI) SPECIFICATIONS AND STANDARD CONSTRUCTION DRAWINGS. ALL 'LUI' DETAILS INCLUDED HEREIN ARE FOR REFERENCE ONLY.
- THE INSTALLATION OF DIRECT BURIED PRIMARY DUCTS AND CONDUCTORS SHALL BE COMPLETED BY THE ELECTRICAL SITEWORKS CONTRACTOR, UNLESS INDICATED OTHERWISE. CONNECTION TO EXISTING OVERHEAD PRIMARY DISTRIBUTION TO BE PERFORMED BY 'LUI'.
- THE INSTALLATION OF DIRECT BURIED SECONDARY DUCTS AND CONDUCTORS STUBBED AND SEALED AT PROPERTY LINE WITH A 2x4" MARKER SHALL BE COMPLETED BY THE ELECTRICAL SITEWORKS CONTRACTOR, UNLESS INDICATED OTHERWISE.
- GAS METER MUST MAINTAIN A MINIMUM SEPARATION OF 1.0m FROM HYDRO METER. (COORDINATED BY BUILDING ELECTRICAL CONTRACTOR)
- METER COMPARTMENT AND CONDUIT TO BE SURFACE MOUNTED ONLY. INSTALLATIONS SHALL NOT BE RECESSED OR ENCLOSED WITHIN THE WALL FINISH. (COORDINATED BY BUILDING ELECTRICAL CONTRACTOR)
- INSTALLATION OF METER COMPARTMENT AS PER ELECTRICAL SAFETY CODE RULES, USE ONLY 'LUI' APPROVED 200A JUMBO SIZED METER COMPARTMENT CENTRE MOUNT WITH TUNNEL TYPE CONNECTORS AND HAVING THE MINIMUM DIMENSIONS OF 17x20x6" CONTAINING 78mm KNOCKOUTS, METER BASE TO MAINTAIN 1.0 METER MIN. CLEARANCE FROM DISCHARGE OF ANY COMBUSTIBLE GAS RELIEF DEVICE OR VENT. (COORDINATED BY BUILDING ELECTRICAL CONTRACTOR)
- ALL CAPPED DUCTS TO BE PROPERLY IDENTIFIED FOR FUTURE RESPECTIVE UTILITY SERVICE CONNECTION.
- ALL BELL PLANT WILL BE PROVIDED AND INSTALLED BY TELECON DESIGN, UNLESS INDICATED OTHERWISE. ALLOW 4 WEEKS NOTICE PRIOR TO TRENCH CONSTRUCTION.
- ALL CABLE PLANT WILL BE PROVIDED AND INSTALLED BY COGECO SERVICES, UNLESS INDICATED OTHERWISE. ALLOW 4 WEEKS NOTICE PRIOR TO TRENCH CONSTRUCTION.
- JOINT UTILITY TRENCHES TO BE INSTALLED UNDER SIDEWALK, WHERE APPLICABLE.

## DRAWING NOTES

- ROAD CROSSING DUCT TRENCH. PROVIDE CONCRETE ENCASED PVC DB2 DUCT IN TRENCH AT STREET CROSSING FOR JOINT UTILITIES WITH DUCTS OF SIZE AND QUANTITIES AS INDICATED ON ROAD CROSSING TABLE, FOLLOWING CURRENT 'LUI' INSTALLATION SPECIFICATIONS. DUCTBANK TO EXTEND 1.0m BEYOND STREET CURB. THIS APPLIES TO HYDRO AND COMMUNICATIONS UTILITIES, INCLUDING STREET LIGHTING DUCTS AS REQUIRED.
- PROVIDE AND INSTALL PRECAST TRANSFORMER CONCRETE FOUNDATION AND PAD, INCLUDING GROUND GRID AS PER CURRENT 'LUI' CONSTRUCTION SPECIFICATIONS. REFERENCE DETAILS 'LU1-12-100' ON DRAWING 'E-3'. TRANSFORMER ORIENTATION TO HAVE MAINTENANCE ACCESS FACING INCOMING TRAFFIC. PROVIDE 50 KVA TRANSFORMERS AND INSTALL TO BASE. USE CURRENT 'LUI' SPECIFICATIONS FOR INSTALLATION, AND THROUGH THE ECONOMIC EVALUATION WILL DETERMINE THE VALUE REIMBURSED TO THE DEVELOPER.
- PRIMARY HYDRO SERVICE. PROVIDE 103mm PVC DB2/ES2 TYPE DUCTS OF QUANTITIES AS INDICATED ON DRAWING, 1.0m FROM EXISTING HYDRO POLE TO TRANSFORMER AND/OR BETWEEN TRANSFORMERS. PROVIDE A 200A CAPACITY SERVICE WITH #2/0 AL 28kV CABLE FOR A SINGLE PHASE LOOP FEED CONFIGURATION. FOLLOW CURRENT 'LUI' INSTALLATION SPECIFICATIONS STANDARDS.
- SECONDARY SERVICE DUCTS. PROVIDE 78mm PVC DB2/ES2 TYPE DUCTS OF QUANTITIES AS INDICATED ON DRAWING, FROM TRANSFORMER FOUNDATION TO EACH LOT, STUBBED AND SEALED AT PROPERTY LINE. PROVIDE CABLES OF SIZE AND QUANTITIES AS INDICATED ON DRAWING. FOLLOW CURRENT 'LUI' INSTALLATION SPECIFICATIONS.
- PROVIDE STREET LIGHT INSTALLATION, INCLUDING LUMINAIRE, POLE AND CONCRETE BASE AT 1.5m FROM STREET CURB, WHERE SHOWN ON DRAWING. REFER TO STREET LIGHT SCHEDULE FOR LUMINAIRE TYPE TO BE INSTALLED. REFER TO '1/E-3' AND '6/E-3' FOR INSTALLATION DETAILS.
- PROVIDE AND INSTALL STREET LIGHT DIRECT BURIED DUCT AND WIRING IN QUANTITIES AND GAUGE AS INDICATED ON DRAWING, FROM STREET LIGHTING BREAKER PANEL PEDESTAL TO LUMINAIRES WHERE SHOWN. (REFER TO TRENCH DETAILS '2' AND '3' ON DRAWING 'E-3').
- TELECOMMUNICATIONS PLANT LOCATIONS. PROVIDE A MARKER (2x4" WOOD STAKE STUB-UP 914mm ABOVE GRADE) AT EVERY BELL/COGECO PEDESTALS AND HOUSE PROPERTY LINE LOCATIONS TO SECURE (WRAP) SERVICE CONDUITS.

## CONDUIT ONLY SCHEDULE

A	= 53mm DB2 DUCT WITH PULL CORD
B	= 78mm DB2 DUCT WITH PULL CORD
B2	= 2x 78mm DB2 DUCTS WITH PULL CORD IN EACH
B3	= 3x 78mm DB2 DUCTS WITH PULL CORD IN EACH
C	= 103mm DB2 DUCT WITH PULL CORD
C2	= 2x 103mm DB2 DUCTS WITH PULL CORD IN EACH
C3	= 3x 103mm DB2 DUCTS WITH PULL CORD IN EACH
C4	= 4x 103mm DB2 DUCTS WITH PULL CORD IN EACH

## CONDUIT AND WIRING SCHEDULE

2	= 2#8 AWG + 1#10 AWG (GROUND) IN 53 mm PVC CONDUIT
3	= 3#8 AWG + 1#10 AWG (GROUND) IN 53mm PVC CONDUIT
4	= 4#8 AWG + 1#10 AWG (GROUND) IN 53mm PVC CONDUIT
5	= #3/0 AWG ALUM. TRIPLEX IN 78mm DB2 DUCT
6	= 2x (#3/0 AWG ALUM. TRIPLEX IN DB2 DUCT)
7	= 3x (#3/0 AWG ALUM. TRIPLEX IN DB2 DUCT)
8	= 4x (#3/0 AWG ALUM. TRIPLEX IN DB2 DUCT)
9	= #2/0 AWG ALUM. 28kV IN 103mm DB2 DUCT

## ELECTRICAL LEGEND

LIGHT STANDARD TYPE A, LUMINAIRE #1  
STREET LIGHTING CIRCUIT REFERENCE: CCT-1

DIRECT BURIED 53mm PVC DUCT WITH PULL CORD, UNLESS OTHERWISE NOTED	---
HYDRO PADMOUNT TRANSFORMER	▼
COMMUNITY MAILBOX (BY CANADA POST)	✉
TYPICAL UNDERGROUND DUCT WITH END CAP	---
EXISTING ARIAL HYDRO LINE	A-HV
UNDERGROUND HYDRO PRIMARY - SINGLE PHASE LOOP	E
UNDERGROUND HYDRO SECONDARY (LOT SERVICE)	S
ELECTRICAL SERVICE METER BASE (BY BUILDING ELECTRICAL CONTRACTOR)	M
UNDERGROUND TELECOMMUNICATION DUCT, (BY BELL)	B
BELL COMMUNICATION PEDESTAL - 'T'	T
UNDERGROUND CABLE DUCT, (BY COGECO)	C
COGECO CABLEVISION PEDESTAL - 'V'	V
2" PE IP GM NATURAL GAS LINE, UNLESS INDICATED OTHERWISE (BY UNION GAS)	G
NATURAL GAS METER (BY UNION GAS)	G
ROAD CROSSING DUCT TRENCH AS PER TABLE AND 'LUI' SPECIFICATIONS	---

ROAD CROSSING TABLE NUMBER OF DUCTS				
ROAD CROSSING ID:	H	B	C	SL
C1	P4	1	1	-
C2	S3	3	3	-
C3	S2	2	2	1
C4	P4 S3	3	3	1
C5	S1	1	1	
LEGEND				
Px	HYDRO PRIMARY DUCT 103mm			
Sx	HYDRO SECOND. DUCT 78mm			
B	BELL DUCT 78mm			
C	CABLE DUCT 78mm			
SL	STREET LIGHT DUCT 53mm			

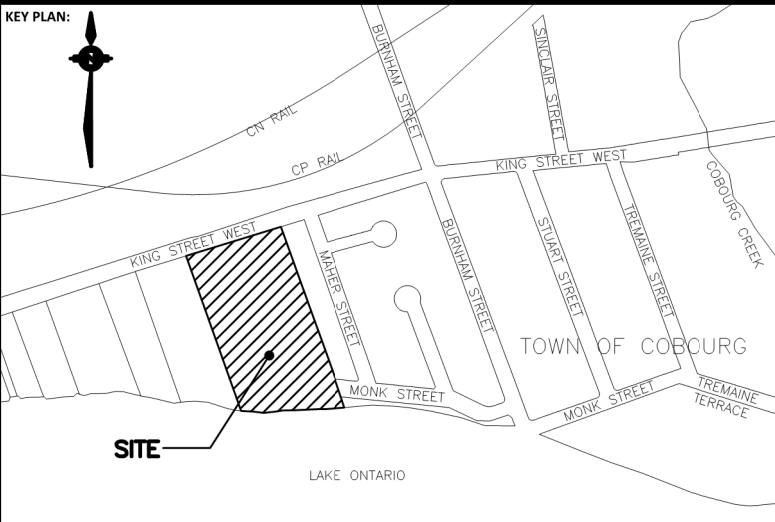
LAKEFRONT UTILITIES INC. (LUI)  
REP: CHRIS CALLAGHAN  
TEL: 905-372-2193 xt. 5204  
EMAIL: ccallaghan@lusi.on.ca

UNION GAS  
REP: ADAM CLOW  
TEL: 1-800-360-9203  
EMAIL: aclow@uniongas.com

TELECON DESIGN (BELL)  
TEL: 1-905-470-2112  
EMAIL: ajanthan.yogarajah@telecon.ca

COGECO SERVICES  
KEVIN WOOD  
TEL: 613-544-6311  
EMAIL: kevin.wood@cogeco.com

CANADA POST  
STEPHEN MCGRAW  
TEL: 613-894-9519  
EMAIL: stephen.mcgraw@canadapost.ca



BENCHMARK:

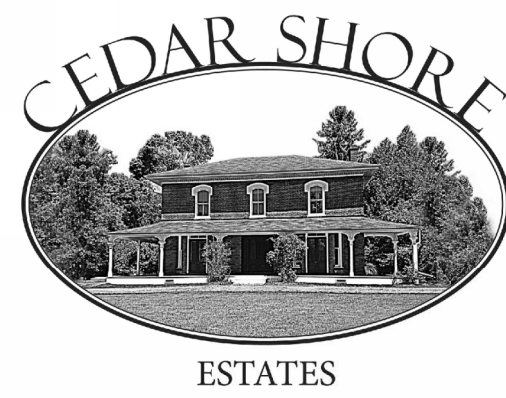
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CLIENT:

EIE CORPORATION

PROJECT NAME:



STAMPS:



DESIGNED BY

No.	Date	Description	By
5	03/09/2018	Issued for 3rd Submission	YF
4	12/08/2017	Issued for 2nd Submission	YF
3	05/17/2017	Issued for 1st Submission	YF
2	02/08/2017	Proposed Utilities Review	YF
1	01/25/2017	Proposed Preliminary Coordination	YF

SHEET TITLE:

COMPOSITE UTILITY PLAN  
NORTH AREA

DUCPLINE:

ELECTRICAL

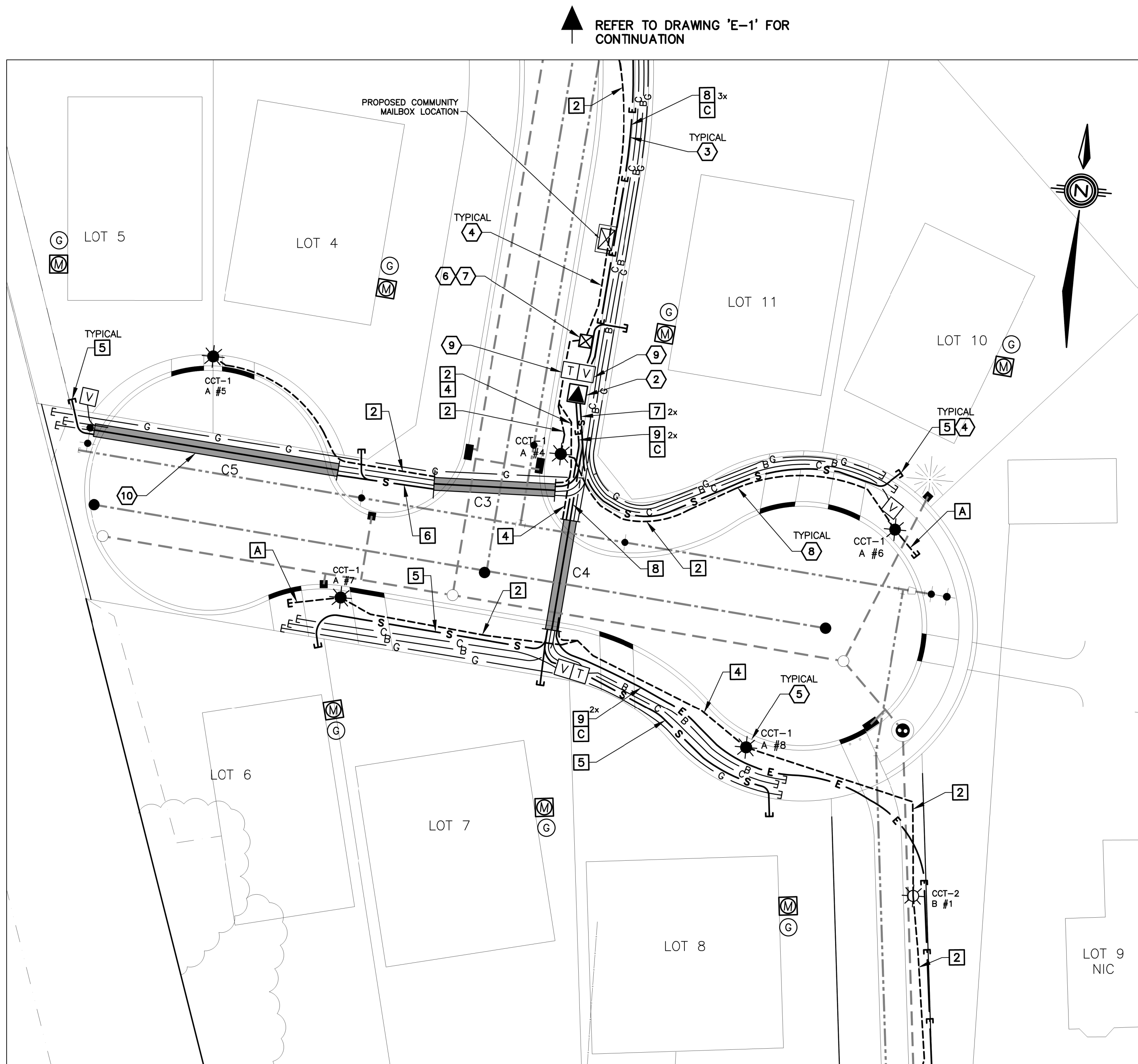
SCALE:

HORIZONTAL : 1:300

VERTICAL :

PROJECT No:		CLIENT File No:	
DRAFTER: Y. FARMER		DESIGNER: Y. FARMER	
APPROVER: S. LAVOIE		DRAWING No: E-1	
DATE: JANUARY 31, 2017		SHEET No: 16 of 19	





#### CONDUIT ONLY SCHEDULE

A	= 53mm DB2 DUCT WITH PULL CORD
B	= 78mm DB2 DUCT WITH PULL CORD
B2	= 2x 78mm DB2 DUCTS WITH PULL CORD IN EACH
B3	= 3x 78mm DB2 DUCTS WITH PULL CORD IN EACH
C	= 103mm DB2 DUCT WITH PULL CORD
C2	= 2x 103mm DB2 DUCTS WITH PULL CORD IN EACH
C3	= 3x 103mm DB2 DUCTS WITH PULL CORD IN EACH
C4	= 4x 103mm DB2 DUCTS WITH PULL CORD IN EACH

#### CONDUIT AND WIRING SCHEDULE

2	= 2#8 AWG + 1#10 AWG (GROUND) IN 53 mm PVC CONDUIT
3	= 3#8 AWG + 1#10 AWG (GROUND) IN 53mm PVC CONDUIT
4	= 4#8 AWG + 1#10 AWG (GROUND) IN 53mm PVC CONDUIT
5	= #3/0 AWG ALUM. TRIPLEX IN 78mm DB2 DUCT
6	= 2x (#3/0 AWG ALUM. TRIPLEX IN DB2 DUCT)
7	= 3x (#3/0 AWG ALUM. TRIPLEX IN DB2 DUCT)
8	= 4x (#3/0 AWG ALUM. TRIPLEX IN DB2 DUCT)
9	= #2/0 AWG ALUM. 28kV IN 103mm DB2 DUCT

ROAD CROSSING TABLE  
NUMBER OF DUCTS

ROAD CROSSING ID:	H	B	C	SL
C1	P4	1	1	-
C2	S3	3	3	-
C3	S2	2	2	1
C4	P4 S3	3	3	1
C5	S1	1	1	

#### LEGEND

Px	HYDRO PRIMARY DUCT 103mm
Sx	HYDRO SECOND. DUCT 78mm
B	BELL DUCT 78mm
C	CABLE DUCT 78mm
SL	STREET LIGHT DUCT 53mm

#### GENERAL NOTES

##### LIGHTING

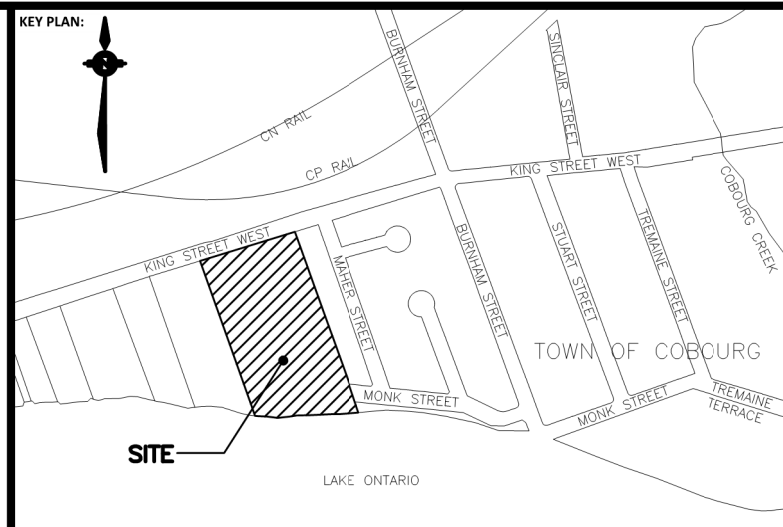
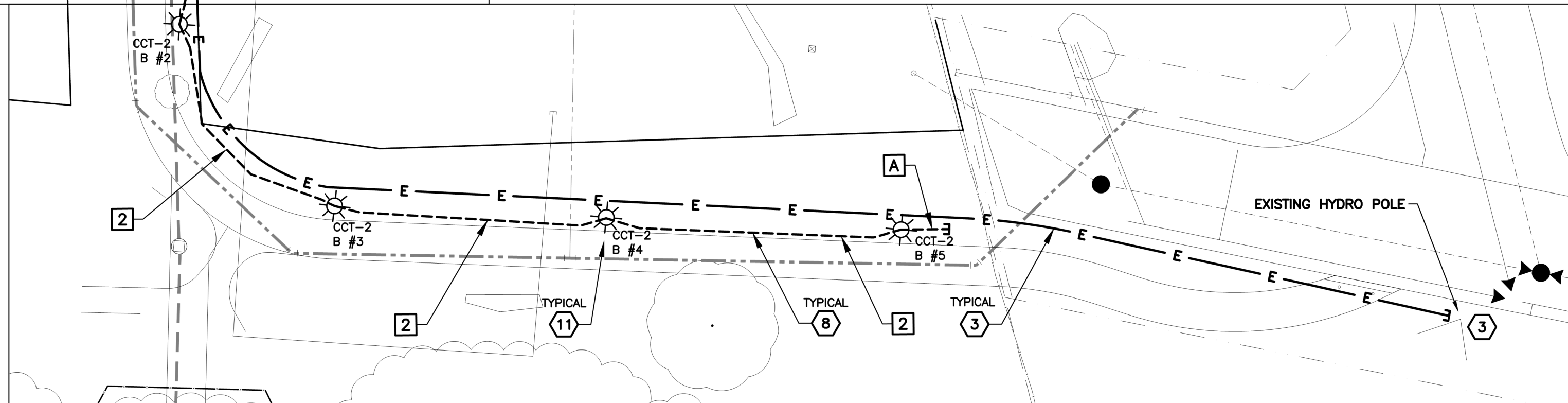
- ALL WORK AND ASSOCIATED MATERIALS ILLUSTRATED ON THIS PLAN ARE BY THE SITEWORK ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED.
- ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH ELECTRICAL SPECIFICATIONS ON DRAWING 'E-4' AND TO 'LAKEFRONT UTILITIES INC.' (LUI) CONSTRUCTION SPECIFICATIONS.
- ALL STREET LIGHTING POLE, LUMINAIRE AND ACCESSORIES C/W DUCTS AND WIRING ARE TO BE SUPPLIED AND INSTALLED BY THE SITEWORK ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED.
- EACH LUMINAIRE POLE MUST BE GROUNDED WITH A 3.0m ELECTRODE INSTALLED ACCORDING TO THE CURRENT ONTARIO ELECTRICAL CODE AND WILL BE TIED TO THE POLE WITH AN ALUMINOTHERMIC WELD OR A COMPRESSED LUG. SEE CONCRETE BASE DETAIL '1/E-3'.
- LIGHTING CIRCUIT CONNECTIONS AND SPLICES MUST BE DONE WITH COMPRESSION LUGS SUCH AS BLACKBURN SERIES 54 AND BE WITH INSULATION EQUIVALENT TO THAT OF WIRING.
- THE INSTALLATION OF A STREET LIGHTING BREAKER PANEL PEDESTAL, INCLUDING FOOTING, DUCT AND WIRING UP TO THE CONNECTION POINT ARE TO BE COMPLETED BY THE SITEWORK ELECTRICAL CONTRACTOR.

##### POWER / COMMUNICATION

- ALL ELECTRICAL DISTRIBUTION SITEWORKS TO BE IN ACCORDANCE WITH CURRENT LAKEFRONT UTILITIES INC (LUI) SPECIFICATIONS AND STANDARD CONSTRUCTION DRAWINGS. ALL 'LUI' DETAILS INCLUDED HEREIN ARE FOR REFERENCE ONLY.
- THE INSTALLATION OF DIRECT BURIED PRIMARY DUCTS AND CONDUCTORS SHALL BE COMPLETED BY THE ELECTRICAL SITEWORKS CONTRACTOR, UNLESS INDICATED OTHERWISE. CONNECTION TO EXISTING OVERHEAD PRIMARY DISTRIBUTION TO BE PERFORMED BY 'LUI'.
- THE INSTALLATION OF DIRECT BURIED SECONDARY DUCTS AND CONDUCTORS STUBBED AND SEALED AT PROPERTY LINE WITH A 2x4" MARKER SHALL BE COMPLETED BY THE ELECTRICAL SITEWORKS CONTRACTOR, UNLESS INDICATED OTHERWISE.
- GAS METER MUST MAINTAIN A MINIMUM SEPARATION OF 1.0m FROM HYDRO METER. (COORDINATED BY BUILDING ELECTRICAL CONTRACTOR)
- METER COMPARTMENT AND CONDUIT TO BE SURFACE MOUNTED ONLY. INSTALLATIONS SHALL NOT BE RECESSED OR ENCLOSED WITHIN THE WALL FINISH. (COORDINATED BY BUILDING ELECTRICAL CONTRACTOR)
- INSTALLATION OF METER COMPARTMENT AS PER ELECTRICAL SAFETY CODE RULES. USE ONLY 'LUI' APPROVED 200A JUMBO SIZED METER COMPARTMENT CENTRE MOUNT WITH TUNNEL TYPE CONNECTORS AND HAVING THE MINIMUM DIMENSIONS OF 17x20x6" CONTAINING 78mm KNOCKOUTS, METER BASE TO MAINTAIN 1.0 METER MIN. CLEARANCE FROM DISCHARGE OF ANY COMBUSTIBLE GAS RELIEF DEVICE OR VENT. (COORDINATED BY BUILDING ELECTRICAL CONTRACTOR)
- ALL CAPPED DUCTS TO BE PROPERLY IDENTIFIED FOR FUTURE RESPECTIVE UTILITY SERVICE CONNECTION.
- ALL BELL PLANT WILL BE PROVIDED AND INSTALLED BY TELECON DESIGN, UNLESS INDICATED OTHERWISE. ALLOW 4 WEEKS NOTICE PRIOR TO TRENCH CONSTRUCTION.
- ALL CABLE PLANT WILL BE PROVIDED AND INSTALLED BY COGECO SERVICES, UNLESS INDICATED OTHERWISE. ALLOW 4 WEEKS NOTICE PRIOR TO TRENCH CONSTRUCTION.
- JOINT UTILITY TRENCHES TO BE INSTALLED UNDER SIDEWALK, WHERE APPLICABLE.

#### DRAWING NOTES

- ROAD CROSSING DUCT TRENCH. PROVIDE CONCRETE ENCASED PVC DB2 DUCT IN TRENCH AT STREET CROSSING FOR JOINT UTILITIES WITH DUCTS OF SIZE AND QUANTITIES AS INDICATED ON ROAD CROSSING TABLE, FOLLOWING CURRENT 'LUI' INSTALLATION SPECIFICATIONS. DUCTBANK TO EXTEND 1.0m BEYOND STREET CURB. THIS APPLIES TO HYDRO AND COMMUNICATIONS UTILITIES, INCLUDING STREET LIGHTING DUCTS AS REQUIRED.
- PROVIDE AND INSTALL PRECAST TRANSFORMER CONCRETE FOUNDATION AND PAD, INCLUDING GROUND GRID AS PER CURRENT 'LUI' CONSTRUCTION SPECIFICATIONS. REFERENCE DETAIL 'LU1-12-100' ON DRAWING 'E-3'. TRANSFORMER ORIENTATION TO HAVE MAINTENANCE ACCESS FACING INCOMING TRAFFIC. PROVIDE 50 KVA TRANSFORMERS AND INSTALL ON BASE. USE CURRENT 'LUI' SPECIFICATIONS FOR INSTALLATION, AND THROUGH THE ECONOMIC EVALUATION WILL DETERMINE THE VALUE REIMBURSED TO THE DEVELOPER.
- PRIMARY HYDRO DISTRIBUTION SERVICE. PROVIDE 103mm PVC DB2/ES2 TYPE DUCTS OF QUANTITIES AS INDICATED ON DRAWING, 1.0m FROM EXISTING HYDRO POLE TO TRANSFORMER AND/OR BETWEEN TRANSFORMERS. PROVIDE A 200A CAPACITY SERVICE WITH #2/0 AL 28kV CABLE FOR A SINGLE PHASE LOOP FEED CONFIGURATION. FOLLOW CURRENT 'LUI' INSTALLATION SPECIFICATIONS STANDARDS.
- SECONDARY SERVICE DUCTS. PROVIDE 78mm PVC DB2/ES2 TYPE DUCTS OF QUANTITIES AS INDICATED ON DRAWING, FROM TRANSFORMER FOUNDATION TO EACH LOT, STUBBED AND SEALED AT PROPERTY LINE. PROVIDE CABLES OF SIZE AND QUANTITIES AS INDICATED ON DRAWING. FOLLOW CURRENT 'LUI' CONSTRUCTION SPECIFICATIONS STANDARDS.
- PROVIDE STREET LIGHT INSTALLATION, INCLUDING LUMINAIRE, POLE AND EMBEDMENT AT 1.5m FROM STREET CURB, WHERE SHOWN ON DRAWING. REFER TO STREET LIGHT SCHEDULE FOR LUMINAIRE TYPE TO BE INSTALLED. REFER TO '1/E-3' AND '6/E-3' FOR INSTALLATION DETAILS.
- PROVIDE AND INSTALL A PRE-CAST PEDESTAL FOOTING FOR A STREET LIGHTING BREAKER PANEL. CONNECT STREET LIGHTING DUCTS TO PEDESTAL AS INDICATED. SEE DETAILS '4/E-3' AND '1/E-4'.
- PROVIDE AND INSTALL A WEATHERPROOF BREAKER PANEL COMPLETE WITH BASE PLATE FOR STREET LIGHTING AND CONNECT AS PER ONTARIO ELECTRICAL SAFETY CODE. POSITION OF BREAKER PANEL NEAR CONNECTING TRANSFORMER, COORDINATE WITH DEVELOPER FOR LOCATION. 'LUI' SHALL MAKE THE FINAL CONNECTION OF STREET LIGHT POWER SUPPLY CABLES TO TRANSFORMER.
- PROVIDE AND INSTALL STREET LIGHT DIRECT BURIED DUCT AND WIRING IN QUANTITIES AND GAUGE AS INDICATED ON DRAWING, FROM STREET LIGHTING BREAKER PANEL PEDESTAL TO LUMINAIRES WHERE SHOWN. (REFER TO TRENCH DETAILS '2' AND '3' ON DRAWING 'E-3'.)
- TELECOMMUNICATIONS PLANT LOCATIONS. PROVIDE A MARKER (2x4" WOOD STAKE STUB-UP 914mm ABOVE GRADE) AT EVERY BELL/COGECO PEDESTALS AND HOUSE PROPERTY LINE LOCATIONS TO SECURE (WRAP) SERVICE CONDUITS.
- PROVIDE A CONCRETE ENCASED UTILITIES TRENCH, AS PER DRAWING NOTE 1 ABOVE, EXTENDING ACROSS THE ROUND ABOUT TO SERVICE UNITS 4 AND 5 AS SHOWN, AND FUTURE WEST BOUND EXPANSION, TO BE DETERMINED.
- PROVIDE PATHWAY LIGHTED BOLLARD INSTALLATION TYPE 'B', INCLUDING LUMINAIRE, POLE AND EMBEDMENT AT 0.30m FROM PATHWAY EDGE, WHERE SHOWN ON DRAWING. REFER TO STREET LIGHT SCHEDULE FOR LUMINAIRE TYPE TO BE INSTALLED ON DRAWING 'E-1'. REFER TO '1/E-3' FOR INSTALLATION DETAILS.



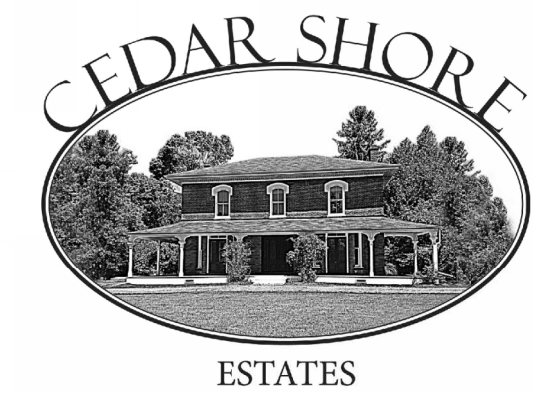
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CLIENT:

EIE CORPORATION

PROJECT NAME:



STAMPS:



No.	Date	Description	By
5	03/09/2018	Issued for 3rd Submission	YF
4	12/08/2017	Issued for 2nd Submission	YF
3	05/17/2017	Issued for 1st Submission	YF
2	02/08/2017	Proposed Utilities Review	YF
1	01/25/2017	Proposed Preliminary Coordination	YF

No.	Date	Description	By
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4	12/08/2017	Issued for 2nd Submission	YF
3	05/17/2017	Issued for 1st Submission	YF
2	02/08/2017	Proposed Utilities Review	YF
1	01/25/2017	Proposed Preliminary Coordination	YF

SHEET TITLE:

COMPOSITE UTILITY PLAN  
SOUTH AREA

DISCIPLINE: ELECTRICAL

SCALE:  
HORIZONTAL : 1:300

VERTICAL :

PROJECT NO:	CLIENT FILE NO:
DRAWER: Y. FARMER	DESIGNER: Y. FARMER
APPROVER: S. LAVOIE	DRAWING NO: E-2
DATE: JANUARY 31, 2017	SHEET NO: 17 of 19





DATE: JANUARY 31, 2017 SHEET No: 18 of 19



A. ELECTRICAL – GENERAL CONDITIONS		DEFINITION	
1. Throughout this document, each of the following words has the corresponding meaning:		1) "Owner": The institution signing the contract with the contractor.	
2) "Engineer": The engineer who stamps the plans.		2) "Engineer": The engineer who stamps the plans.	
3) The word "contractor" or the name registered represents the person, the association or the social reason that pledges to provide the materials and executes the work as described in the plans and/or the specifications.		3) The word "contractor" or the name registered represents the person, the association or the social reason that pledges to provide the materials and executes the work as described in the plans and/or the specifications.	
4) "Specifications" means the general or particular requests for each of the subcontractors for the work of:		4) "Specifications" means the general or particular requests for each of the subcontractors for the work of:	
• Electricity.		• Electricity.	
5) "Hidden" elements: Electrical insulated elements situated in trenches, floor or wall cavities, shafts or on the top of suspended ceilings. The installations, the apparatus and the elements in a gallery are not considered to be hidden.		5) "Hidden" elements: Electrical insulated elements situated in trenches, floor or wall cavities, shafts or on the top of suspended ceilings. The installations, the apparatus and the elements in a gallery are not considered to be hidden.	
6) "Apparent" elements: Not hidden elements.		6) "Apparent" elements: Not hidden elements.	
7) "Provide": supply, install, connect, test and commission.		7) "Provide": supply, install, connect, test and commission.	
8) "Acceptable products": Means that only the listed manufacturers are automatically considered as possible suppliers of the product required. Alternate products are to be proved to be equivalent to the specified ones.		8) "Acceptable products": Means that only the listed manufacturers are automatically considered as possible suppliers of the product required. Alternate products are to be proved to be equivalent to the specified ones.	
9) "Standard of acceptance/required quality": Means that the specified product is the reference for establishing the performances and quality.		9) "Standard of acceptance/required quality": Means that the specified product is the reference for establishing the performances and quality.	
10) "Accepted product": Only the specified product must be provided.		10) "Accepted product": Only the specified product must be provided.	
11) "Typical": Means that this note or detail is applicable to all similar installations and to all the plans.		11) "Typical": Means that this note or detail is applicable to all similar installations and to all the plans.	
2. GENERALITIES		2. GENERALITIES	
All the general conditions of these specifications as well as the general clauses of the tender documents are applicable and are an integral part of the present section.		All the general conditions of these specifications as well as the general clauses of the tender documents are applicable and are an integral part of the present section.	
The contractor must provide all materials and supply Labour required executing perfectly and completely all work described in the Tender Documents.		The contractor must provide all materials and supply Labour required executing perfectly and completely all work described in the Tender Documents.	
All supplied and installed material, fixtures and equipment must be new and of first grade.		All supplied and installed material, fixtures and equipment must be new and of first grade.	
The contractor must supply a price in compliance with article "TENDER AND SEPARATE PRICES" and must annex to his submission the ventilated prices as well as the requested separate prices.		The contractor must supply a price in compliance with article "TENDER AND SEPARATE PRICES" and must annex to his submission the ventilated prices as well as the requested separate prices.	
3. PLANS AND SPECIFICATIONS		3. PLANS AND SPECIFICATIONS	
The plans give the general organization of the work and the contractors must make the necessary adjustments imposed by the site conditions at no additional cost. Large scale details have precedence on the floor plans. The drawings are not supposed to indicate all structural and/or architectural details.		The plans give the general organization of the work and the contractors must make the necessary adjustments imposed by the site conditions at no additional cost. Large scale details have precedence on the floor plans. The drawings are not supposed to indicate all structural and/or architectural details.	
Do not take dimensions by scale from the drawings, unless they are quoted.		Do not take dimensions by scale from the drawings, unless they are quoted.	
At the time of tendering and/or execution of work, the contractors will notify the Engineer of any deviations or omissions between the plans and specifications. The Engineer will forward written instructions to the tenders or contractors. The Engineer reserves the exclusive right of interpreting the content in the plans and specifications.		At the time of tendering and/or execution of work, the contractors will notify the Engineer of any deviations or omissions between the plans and specifications. The Engineer will forward written instructions to the tenders or contractors. The Engineer reserves the exclusive right of interpreting the content in the plans and specifications.	
The interpretation of the Engineer must be obtained prior to the work execution. If the contractor anticipates incorrectly the engineer's decision, the contractor will be ordered to undo and redo all the work correctly, at the contractors' expense.		The interpretation of the Engineer must be obtained prior to the work execution. If the contractor anticipates incorrectly the engineer's decision, the contractor will be ordered to undo and redo all the work correctly, at the contractors' expense.	
The plans and specifications complement each other, and the information indicated in one part or another of the documents will not necessarily be repeated in the other one. The contractors must be aware of the local conditions by examining the site.		The plans and specifications complement each other, and the information indicated in one part or another of the documents will not necessarily be repeated in the other one. The contractors must be aware of the local conditions by examining the site.	
All addenda will be an integral part of the contract documents.		All addenda will be an integral part of the contract documents.	
The Engineer will demand the relocation of any item installed without considering the ease of reading, calibration, maintenance and repair and this will be at the contractor's exclusive expense.		The Engineer will demand the relocation of any item installed without considering the ease of reading, calibration, maintenance and repair and this will be at the contractor's exclusive expense.	
The contractors will be responsible for connecting all anticipated equipment by their contract in their arrangement as received on site.		The contractors will be responsible for connecting all anticipated equipment by their contract in their arrangement as received on site.	
4. CODES, STANDARDS AND PERMITS		4. CODES, STANDARDS AND PERMITS	
The labour, materials and installation must comply with all current and applicable federal, provincial and municipal codes and regulations. The contractor must obtain and pay for all permits, certificates, etc relative to the completion of his works.		The labour, materials and installation must comply with all current and applicable federal, provincial and municipal codes and regulations. The contractor must obtain and pay for all permits, certificates, etc relative to the completion of his works.	
5. PROTECTION OF THE PUBLIC AND THIRD PARTY		5. PROTECTION OF THE PUBLIC AND THIRD PARTY	
The contractor must strictly follow all provincial and municipal regulations concerning public and third party health and security.		The contractor must strictly follow all provincial and municipal regulations concerning public and third party health and security.	
The contractor must be covered at all times by a public liability insurance policy and other insurance policies relevant to his work.		The contractor must be covered at all times by a public liability insurance policy and other insurance policies relevant to his work.	
6. EQUIVALENCES		6. EQUIVALENCES	
Manufacturers' names of materials, equipment, etc. mentioned in the specifications serve to determine the performance and the quality of the materials required.		Manufacturers' names of materials, equipment, etc. mentioned in the specifications serve to determine the performance and the quality of the materials required.	
The contractor will be responsible for providing material that is in full compliance with all requirements mentioned above, unless he submits a request for equivalency seven (7) days prior to the closing of tenders. The request, made in writing, must describe make, model, dimensions, and performance equivalent to the other matching products. It must be accompanied by shop drawings. All materials approved will be listed in an addendum. All materials not specified in the specifications or in an addendum will be refused. Any substituted apparatus must not exceed the dimensions provided on the plans for its installation, and the contractor must absorb all additional costs that may result.		The contractor will be responsible for providing material that is in full compliance with all requirements mentioned above, unless he submits a request for equivalency seven (7) days prior to the closing of tenders. The request, made in writing, must describe make, model, dimensions, and performance equivalent to the other matching products. It must be accompanied by shop drawings. All materials approved will be listed in an addendum. All materials not specified in the specifications or in an addendum will be refused. Any substituted apparatus must not exceed the dimensions provided on the plans for its installation, and the contractor must absorb all additional costs that may result.	
7. MANUFACTURERS RECOMMENDATIONS		7. MANUFACTURERS RECOMMENDATIONS	
All apparatus will be installed, connected and started strictly in accordance with the manufacturer recommendations, unless otherwise indicated on the plans and specifications. Each major item of the equipment must carry the manufacturer identification, catalogue and serial numbers. The identification must be placed in a way not to be hidden.		All apparatus will be installed, connected and started strictly in accordance with the manufacturer recommendations, unless otherwise indicated on the plans and specifications. Each major item of the equipment must carry the manufacturer identification, catalogue and serial numbers. The identification must be placed in a way not to be hidden.	
8. SHOP DRAWINGS		8. SHOP DRAWINGS	
One (1) week after the contract is signed, the contractor must submit shop drawings for approval of all apparatus to be installed, materials list that he proposes to use including the manufacturers names and their catalogue numbers.		One (1) week after the contract is signed, the contractor must submit shop drawings for approval of all apparatus to be installed, materials list that he proposes to use including the manufacturers names and their catalogue numbers.	
The shop drawings must identify the apparatus using the naming of the plans and/or specifications and the room number identified on the plans.		The shop drawings must identify the apparatus using the naming of the plans and/or specifications and the room number identified on the plans.	
9. EQUIPMENT AND WORK RESPONSIBILITIES		9. EQUIPMENT AND WORK RESPONSIBILITIES	
Protection of work and installations will remain the responsibility of the contractor as long as the tests have not been conducted and the entire work is not received by the Engineer.		Protection of work and installations will remain the responsibility of the contractor as long as the tests have not been conducted and the entire work is not received by the Engineer.	
All the transportation costs of the equipment and the materials, the fees for unloading and placement, must be included in the contract. After materials delivery, before and after the installation, the contractor must protect the equipment and materials from thief and damage resulting from any cause.		All the transportation costs of the equipment and the materials, the fees for unloading and placement, must be included in the contract. After materials delivery, before and after the installation, the contractor must protect the equipment and materials from thief and damage resulting from any cause.	
Protect openings, equipment, to avoid all risks of freezing, rain, snow, wind, dust and/or debris introduction.		Protect openings, equipment, to avoid all risks of freezing, rain, snow, wind, dust and/or debris introduction.	
All goods damaged by the contractor's negligence to adequately protect the installations will be replaced or repaired at the expense of the contractor(s) at fault.		All goods damaged by the contractor's negligence to adequately protect the installations will be replaced or repaired at the expense of the contractor(s) at fault.	
18. BREAKING, EXCAVATION, FILLING-UP AND COMPACTING		18. BREAKING, EXCAVATION, FILLING-UP AND COMPACTING	
All work of breaking, excavation, filling-up and compacting for the positioning of the systems will be the responsibility of the general contractor, unless otherwise indicated.		All work of breaking, excavation, filling-up and compacting for the positioning of the systems will be the responsibility of the general contractor, unless otherwise indicated.	
Work by the electrical contractor		Work by the electrical contractor	
The basic preparation of the underground piping and conduits as well as the filling-up of the bottom of the trenches including the materials and the emplacement up to 305 mm (12") above the conduits will be the responsibility of the electrical contractor.		The basic preparation of the underground piping and conduits as well as the filling-up of the bottom of the trenches including the materials and the emplacement up to 305 mm (12") above the conduits will be the responsibility of the electrical contractor.	
No parts of the underground piping or conduit will be placed directly on the rock or any other hard surface. The bottom of the trenches will be made of a bed of crushed stones 0–20 mm (3/4") of 150 mm (6") thickness compacted to 95% modified proctor when underneath a structural slab of concrete or underneath a public pathway, or compacted to 90% of the modified proctor when anywhere else. The trenches will be filled up with the same material up to 305 mm (12") above the pipes and conduits and compacted afterwards.		No parts of the underground piping or conduit will be placed directly on the rock or any other hard surface. The bottom of the trenches will be made of a bed of crushed stones 0–20 mm (3/4") of 150 mm (6") thickness compacted to 95% modified proctor when underneath a structural slab of concrete or underneath a public pathway, or compacted to 90% of the modified proctor when anywhere else. The trenches will be filled up with the same material up to 305 mm (12") above the pipes and conduits and compacted afterwards.	
The materials used to fill up the trenches cannot contain, in any case, organic or top soil. Use crushed stones, stone dust, sand or gravel exempt of small stones, ashes or frozen soil. Compact in a progressive way, at a maximum thickness of 305 mm (12") of filling, up to 95% proctor.		The materials used to fill up the trenches cannot contain, in any case, organic or top soil. Use crushed stones, stone dust, sand or gravel exempt of small stones, ashes or frozen soil. Compact in a progressive way, at a maximum thickness of 305 mm (12") of filling, up to 95% proctor.	
11. SUPERVISION		11. SUPERVISION	
The Engineer will answer the contractor's questions to assist him in performing the work described in the plans and specifications. The contractor will however be the only one responsible of the work execution. The contractor will have to act with diligence to satisfy the remarks written in the site report.		The Engineer will answer the contractor's questions to assist him in performing the work described in the plans and specifications. The contractor will however be the only one responsible of the work execution. The contractor will have to act with diligence to satisfy the remarks written in the site report.	
12. HIDDEN WORK		12. HIDDEN WORK	
No work will be hidden before the Engineer has seen it. The contractor must inform the Engineer in writing at least two (2) workdays in advance. If the contractor does not conform, he must pay the incurred expenses for the inspection of the works.		No work will be hidden before the Engineer has seen it. The contractor must inform the Engineer in writing at least two (2) workdays in advance. If the contractor does not conform, he must pay the incurred expenses for the inspection of the works.	
13. CHANGES AND EXTRA WORKS		13. CHANGES AND EXTRA WORKS	
The contractor should not execute works or to supply additional materials without having received the written approval from the Engineer and owner. The owner will have the right to make changes during the construction. If an increase or a decrease in cost occurs, an adequate adjustment will be brought to the present contract, as described in the "ADDITIONAL REMUNERATION" section.		The contractor should not execute works or to supply additional materials without having received the written approval from the Engineer and owner. The owner will have the right to make changes during the construction. If an increase or a decrease in cost occurs, an adequate adjustment will be brought to the present contract, as described in the "ADDITIONAL REMUNERATION" section.	
The contractor cannot execute work or supply additional materials without receiving a written approval by the engineer or owner. The owner will not pay any supplements to the contractor unless a written agreement was signed beforehand between the owner and the contractor. The additional work or materials, with a written approval, will be calculated in accordance with the "ADDITIONAL REMUNERATION" section.		The contractor cannot execute work or supply additional materials without receiving a written approval by the engineer or owner. The owner will not pay any supplements to the contractor unless a written agreement was signed beforehand between the owner and the contractor. The additional work or materials, with a written approval, will be calculated in accordance with the "ADDITIONAL REMUNERATION" section.	
14. TESTING, ADJUSTING AND BALANCING		14. TESTING, ADJUSTING AND BALANCING	
At the end of the work, all the components of the systems affected by the work must be adjusted to insure operation is within the acceptable limits of the system's design and according to the manufacturer's published characteristics.		At the end of the work, all the components of the systems affected by the work must be adjusted to insure operation is within the acceptable limits of the system's design and according to the manufacturer's published characteristics.	
The Engineer reserves the right to demand the services of an authorized manufacturer representative in case of an equipment malfunction. The contractor must absorb all expenses. At the end of the adjustments, the Engineer must be advised once the systems are functional and ready for verification.		The Engineer reserves the right to demand the services of an authorized manufacturer representative in case of an equipment malfunction. The contractor must absorb all expenses. At the end of the adjustments, the Engineer must be advised once the systems are functional and ready for verification.	
If, after verification of the reports, the operation is not satisfactory, the contractor must do all required adjustments and/or replacements at his own expense to meet the final result requirements of the specifications. Tests will be repeated and reports resubmitted until full satisfaction of the Engineer.		If, after verification of the reports, the operation is not satisfactory, the contractor must do all required adjustments and/or replacements at his own expense to meet the final result requirements of the specifications. Tests will be repeated and reports resubmitted until full satisfaction of the Engineer.	
Supply temporary generator and panel if required.		Supply temporary generator and panel if required.	
15. OPERATION AND MAINTENANCE MANUALS		15. OPERATION AND MAINTENANCE MANUALS	
Generalities		Generalities	
Supply three (3) copies of instructions manuals including all installation, operation, systems maintenance data and warranty certificates.		Supply three (3) copies of instructions manuals including all installation, operation, systems maintenance data and warranty certificates.	
The installation data must include:		The installation data must include:	
a. The plans "As Built";		a. The plans "As Built";	
b. The installation manuals for all the equipment;		b. The installation manuals for all the equipment;	
c. Shop drawings for all the equipment;		c. Shop drawings for all the equipment;	
d. The maintenance data of systems and apparatus must include:		d. The maintenance data of systems and apparatus must include:	
e. The complete list of replacement parts showing manufacturers names, catalogue numbers (parts), addresses and phone and fax numbers (if applicable);		e. The complete list of replacement parts showing manufacturers names, catalogue numbers (parts), addresses and phone and fax numbers (if applicable);	
f. The list of critical parts for the operation as well as the quantity of each supplied and stored and the minimal number to be stored;		f. The list of critical parts for the operation as well as the quantity of each supplied and stored and the minimal number to be stored;	
g. A list of special tools supplied and delivered (purchase order and delivery slip);		g. A list of special tools supplied and delivered (purchase order and delivery slip);	
h. The conducted tests with copies of certificates and verification;		h. The conducted tests with copies of certificates and verification;	
i. Include all procedures and results of conducted tests with copies of acceptance certificates;		i. Include all procedures and results of conducted tests with copies of acceptance certificates;	
j. Include procedures to identify minor problems "Trouble shooting";		j. Include procedures to identify minor problems "Trouble shooting";	
k. The instructions and schedules of inspection.		k. The instructions and schedules of inspection.	
The operation data of systems and apparatus must include:		The operation data of systems and apparatus must include:	
a. The operation description, limits of operation and the capacities of each system;		a. The operation description, limits of operation and the capacities of each system;	
b. The design critical points such as temperature, pressure, flow rates and capacities.		b. The design critical points such as temperature, pressure, flow rates and capacities.	
These instructions will include all graphs, curves, capacities and other supplied data by the manufacturer concerning the operation and details of all employed equipment.		These instructions will include all graphs, curves, capacities and other supplied data by the manufacturer concerning the operation and details of all employed equipment.	
Each manual will be placed in D shape rings folders, allowing binding of mobile papers in a 215mm x 280mm (8 1/2" x 11") format.		Each manual will be placed in D shape rings folders, allowing binding of mobile papers in a 215mm x 280mm (8 1/2" x 11") format.	
16. AS BUILT DRAWINGS		16. AS BUILT DRAWINGS	
Annotate in red the "As Built Drawings" for the substantial completion of work approval to show on the plans, the systems and fixtures as they were installed.		Annotate in red the "As Built Drawings" for the substantial completion of work approval to show on the plans, the systems and fixtures as they were installed.	
17. SUBSTANTIAL COMPLETION OF WORK		17. SUBSTANTIAL COMPLETION OF WORK	
The contractor will advise the owner and the Engineer in writing of the termination of work and will ask for the substantial completion only if the work is mostly completed, if the work cannot be finished because of condition out of his control or if the value of the work to correct is equal or less than 0.5% of the contract's total amount. In addition, the contractor must submit, to the engineer, copies of ESA electrical inspections and electrical commissioning reports], etc.		The contractor will advise the owner and the Engineer in writing of the termination of work and will ask for the substantial completion only if the work is mostly completed, if the work cannot be finished because of condition out of his control or if the value of the work to correct is equal or less than 0.5% of the contract's total amount. In addition, the contractor must submit, to the engineer, copies of ESA electrical inspections and electrical commissioning reports], etc.	
The owner and the Engineer will do an inspection of work with the contractor's representative. Once the work is found to be in accordance to the plans and specifications and to the owner's satisfaction, the contractor will prepare the final estimate of the executed work value and he will ask for the approval and the payment by the owner.		The owner and the Engineer will do an inspection of work with the contractor's representative. Once the work is found to be in accordance to the plans and specifications and to the owner's satisfaction, the contractor will prepare the final estimate of the executed work value and he will ask for the approval and the payment by the owner.	
The owner will retain the right to occupy and to use totally or partially one part of his offices or to put in service totally or partially any part of his		The owner will retain the right to occupy and to use totally or partially one part of his offices or to put in service totally or partially any part of his	
offices before or after the substantial completion, without freeing the contractor from his responsibilities.		offices before or after the substantial completion, without freeing the contractor from his responsibilities.	
During the temporary reception of the works, the general contractor must supply the following documents:		During the temporary reception of the works, the general contractor must supply the following documents:	
a. The preliminary operation and maintenance manuals in three (3) copies for inspection including all the shop drawings stamped "APPROVED";		a. The preliminary operation and maintenance manuals in three (3) copies for inspection including all the shop drawings stamped "APPROVED";	
b. The preliminary operation and maintenance personal training program in three (3) copies.		b. The preliminary operation and maintenance personal training program in three (3) copies.	
The contractual holdback of 10 % is retained until the definitive reception of the work.		The contractual holdback of 10 % is retained until the definitive reception of the work.	
18. FINAL RECEPTION		18. FINAL RECEPTION	
When the required corrections to the specified deficiencies are completed and that all the work is finished according to the terms of the contract, the final reception can be made as per tender documents. If the deficiencies are not corrected a special holdback will be retained.		When the required corrections to the specified deficiencies are completed and that all the work is finished according to the terms of the contract, the final reception can be made as per tender documents. If the deficiencies are not corrected a special holdback will be retained.	
19. WARRANTY		19. WARRANTY	
The contractor and his subcontractors will be held responsible to repair and correct all defects that may appear during the first year after the date of the final completion of the work, and that are not caused by the improper usage by the personnel. The corrections must be done at the contractor's expense as well as all the damages caused to the other parts of the system because of these defects.		The contractor and his subcontractors will be held responsible to repair and correct all defects that may appear during the first year after the date of the final completion of the work, and that are not caused by the improper usage by the personnel. The corrections must be done at the contractor's expense as well as all the damages caused to the other parts of the system because of these defects.	
20. REPLACEMENT PARTS		20. REPLACEMENT PARTS	
The contractor must deliver to the owner, prior to the final reception of work, the materials mentioned below. He must submit to the Engineer, a list of the materials delivered with a signed copy of the receipt by the owner.		The contractor must deliver to the owner, prior to the final reception of work, the materials mentioned below. He must submit to the Engineer, a list of the materials delivered with a signed copy of the receipt by the owner.	
Electrical		Electrical	
• A set of three fuses for each type installed		• A set of three fuses for each type installed	
• Three (3) lamps of the other types installed.		• Three (3) lamps of the other types installed.	
• The necessary tools for maintenance or repairs.		• The necessary tools for maintenance or repairs.	
B. ELECTRICAL TECHNICAL SPECIFICATION		B. ELECTRICAL TECHNICAL SPECIFICATION	
1. SCOPE OF WORKS		1. SCOPE OF WORKS	
The electrical work must include, but not limited to the supply, handling transportation, set up, installation, connection and testing/ commissioning of all systems and accessories described here in and/or shown on the drawings. All systems must be fully operational.		The electrical work must include, but not limited to the supply, handling transportation, set up, installation, connection and testing/ commissioning of all systems and accessories described here in and/or shown on the drawings. All systems must be fully operational.	
• Provide exterior street lighting including:		• Provide exterior street lighting including:	
• Street luminaire pole base,		• Street luminaire pole base,	
• Fixture pole,		• Fixture pole,	
• Lighting fixture,		• Lighting fixture,	
• Wiring,		• Wiring,	
• Pedestal base – Street lighting,		• Pedestal base – Street lighting,	
• Breaker panel – Street lighting,		• Breaker panel – Street lighting,	
• Ducting.		• Ducting.	
• Provide joint utility trench including:		• Provide joint utility trench including:	
• Primary and secondary hydro ducts and cables,		• Primary and secondary hydro ducts and cables,	
• Main joint utilities and road crossing trenches.		• Main joint utilities and road crossing trenches.	
• Single phase transformer base (vault),		• Single phase transformer base (vault),	
• Single phase transformer grounding grid,		• Single phase transformer grounding grid,	
• Single phase transformers.		• Single phase transformers.	
1.B standards: All equipment must be CSA and/or ULC approved.		1.B standards: All equipment must be CSA and/or ULC approved.	
All installations must be to OESC.		All installations must be to OESC.	
2. CONDUITS		2. CONDUITS	
1) No cutting or boring through structural elements without written permission.		1) No cutting or boring through structural elements without written permission.	
a. For direct burial or concrete encased, use rigid PVC conduits, size as indicated, with a minimal wall thickness of 2,8mm. All couplings, reducers, flared tips, plugs, caps and adaptors made of rigid PVC, supplied and installed to form a complete installation. Expansion joints must be installed at every 30m of conduit.		a. For direct burial or concrete encased, use rigid PVC conduits, size as indicated, with a minimal wall thickness of 2,8mm. All couplings, reducers, flared tips, plugs, caps and adaptors made of rigid PVC, supplied and installed to form a complete installation. Expansion joints must be installed at every 30m of conduit.	
b. All accessories required to install the conduits, (boxes, lugs, couplings, etc.) must be of the same type.		b. All accessories required to install the conduits, (boxes, lugs, couplings, etc.) must be of the same type.	
c. Identify power service provider conduits with red paint.		c. Identify power service provider conduits with red paint.	
d. Slope underground conduits to ensure their drainage.		d. Slope underground conduits to ensure their drainage.	
3. WIRING		3. WIRING	
1) Copper wiring, type RWU–90°C for underground, X–link 1000 volts for 347V and higher connections. No. 12 minimum, unless indicated otherwise.		1) Copper wiring, type RWU–90°C for underground, X–link 1000 volts for 347V and higher connections. No. 12 minimum, unless indicated otherwise.	
2) Install all cables in conduits simultaneously.		2) Install all cables in conduits simultaneously.	
3) All wiring must be colour coded in the same way for the whole of the project. Use current standards.		3) All wiring must be colour coded in the same way for the whole of the project. Use current standards.	
4) Each wire must be identified with a Brady tag on the insulation at every connection and every pullbox.		4) Each wire must be identified with a Brady tag on the insulation at every connection and every pullbox.	
5) Provide a green insulated ground wire in every conduit.		5) Provide a green insulated ground wire in every conduit.	
4. GROUNDING AND BONDING		4. GROUNDING AND BONDING	
Install complete, permanent and continuous grounding systems for network, circuits and equipment, including conductors, connectors, ground rods, ground busses and required accessories, to meet engineer and local authority requirements.		Install complete, permanent and continuous grounding systems for network, circuits and equipment, including conductors, connectors, ground rods, ground busses and required accessories, to meet engineer and local authority requirements.	
System ground, non–current carrying metallic parts, neutral wire, according to the current electrical code as shown on drawings. Provide ground resistance measurements, where indicated.		System ground, non–current carrying metallic parts, neutral wire, according to the current electrical code as shown on drawings. Provide ground resistance measurements, where indicated.	
5. LIGHTING FIXTURE		5. LIGHTING FIXTURE	
Refer to luminaire schedule on drawing E–1 for details.		Refer to luminaire schedule on drawing E–1 for details.	
6. EQUIPMENT TRIALS		6. EQUIPMENT TRIALS	
The contractor must do the main trials, described here under, in the presence of the engineer.		The contractor must do the main trials, described here under, in the presence of the engineer.	
If the tests are negative, the contractor is responsible for the costs associated with the correction.		If the tests are negative, the contractor is responsible for the costs associated with the correction.	
1) SINGLE PHASE 240V FEEDERS;		1) SINGLE PHASE 240V FEEDERS;	
a. Megger to ground		a. Megger to ground	
b. Megger of phase to phase		b. Megger of phase to phase	
LUMINAIRE CONCRETE BASE GEO–TECHNICAL DATA		LUMINAIRE CONCRETE BASE GEO–TECHNICAL DATA	
In reference to Luminaire Base detail "1/E–2", insure the following:		In reference to Luminaire Base detail "1/E–2", insure the following:	
2) The site Geo–technical data are available from the client via the Geo–technical study data. The foundation must be built on undisturbed soil.		2) The site Geo–technical data are available from the client via the Geo–technical study data. The foundation must be built on undisturbed soil.	
3) If a dimension or depth should be modified during the construction of the foundation unit, the contractor must notice the Structural Engineer and obtain its approval before proceeding.		3) If a dimension or depth should be modified during the construction of the foundation unit, the contractor must notice the Structural Engineer and obtain its approval before proceeding.	
4) Any existing soil, compressible soil and topsoil beneath all footings need to be removed to ground level.		4) Any existing soil, compressible soil and topsoil beneath all footings need to be removed to ground level.	
5) The Geo–technical Engineer must verify that the serviceability and ultimate bearing capacities indicated in the drawings and in the geo–technical study data are met. The verification must be done after excavation and prior the construction of foundation.		5) The Geo–technical Engineer must verify that the serviceability and ultimate bearing capacities indicated in the drawings and in the geo–technical study data are met. The verification must be done after excavation and prior the construction of foundation.	
qs = 75 kPa		qs = 75 kPa	
qu = 110 kPa		qu = 110 kPa	
2.9 Stainless Steel Sill		2.9 Stainless Steel Sill	
1. To improve corrosion resistance the transformer sill shall be constructed of stainless steel.		1. To improve corrosion resistance the transformer sill shall be constructed of stainless steel.	
2.10 Exterior Finish		2.10 Exterior Finish	
1. The finishing process shall include the application of a zinc enriched primer prior to painting.		1. The finishing process shall include the application of a zinc enriched primer prior to painting.	
2. Transformers shall be painted Equipment Green, Munsell 9GY1.5/2.6.		2. Transformers shall be painted Equipment Green, Munsell 9GY1.5/2.6.	
3. A rubber gasket with suitable UV and weather resistance for exterior application shall be applied to the bottom of the transformer tank and sill. This will compensate for minor irregularities in the concrete pad to reduce vibration and protect the paint finish during installation of the transformer.		3. A rubber gasket with suitable UV and weather resistance for exterior application shall be applied to the bottom of the transformer tank and sill. This will compensate for minor irregularities in the concrete pad to reduce vibration and protect the paint finish during installation of the transformer.	
4. All markings and labels shall be in English.		4. All markings and labels shall be in English.	
5. The "Keep Away" warning sign shown in Fig. 13 of CAN/CSA C227.3 shall be replaced with an Electromark Catalog # LFU0002000 warning label that includes the utility information.		5. The "Keep Away" warning sign shown in Fig. 13 of CAN/CSA C227.3 shall be replaced with an Electromark Catalog # LFU0002000 warning label that includes the utility information.	
6. The transformer KVA rating shall be stenciled on the front of the hood in place of the customer stock code, in 25mm lettering as shown in Figure 10.		6. The transformer KVA rating shall be stenciled on the front of the hood in place of the customer stock code, in 25mm lettering as shown in Figure 10.	
3. EXECUTION		3. EXECUTION	
3.1 Bid Submission		3.1 Bid Submission	
1. The information and drawings submitted with the tender shall include;		1. The information and drawings submitted with the tender shall include;	
a) Transformer ratings,		a) Transformer ratings,	
b) Guaranteed No-Load Losses in Watts (@105% potential) and Full-load losses in Watts,		b) Guaranteed No-Load Losses in Watts (@105% potential) and Full-load losses in Watts,	
c) Guarantee.		c) Guarantee.	
3.2 Transformer Loss Evaluation		3.2 Transformer Loss Evaluation	
1. The quoted transformers will be evaluated for the present value of losses and this value added to the bid price for overall financial evaluation. The following loss formula will be used:		1. The quoted transformers will be evaluated for the present value of losses and this value added to the bid price for overall financial evaluation. The following loss formula will be used:	
$PV_{\text{losses}} (\text{Can\$}) = A \times \text{no-Load Loss (Watts)} + B \times \text{full-Load Loss (Watts)}$		$PV_{\text{losses}} (\text{Can\$}) = A \times \text{no-Load Loss (Watts)} + B \times \text{full-Load Loss (Watts)}$	
Where $A = 14.05 \text{ } (\$/\text{watt})$ , and $B = 3.35 \text{ } (\$/\text{watt})$ .		Where $A = 14.05 \text{ } (\$/\text{watt})$ , and $B = 3.35 \text{ } (\$/\text{watt})$ .	
2. If the actual losses are higher than the guaranteed losses quoted in the tender bid, the Manufacturer will be required to reduce the purchase cost in the amount determined by entering the difference in the losses into the formula to derive a penalty amount.		2. If the actual losses are higher than the guaranteed losses quoted in the tender bid, the Manufacturer will be required to reduce the purchase cost in the amount determined by entering the difference in the losses into the formula to derive a penalty amount.	
3.3 Tests		3.3 Tests	
1. Transformer testing and reporting shall be in accordance with CAN/CSA C227.3.		1. Transformer testing and reporting shall be in accordance with CAN/CSA C227.3.	
3.4 Shipment		3.4 Shipment	
1. Shipment shall be initiated by the Supplier once Approval is provided by the Utility.		1. Shipment shall be initiated by the Supplier once Approval is provided by the Utility.	
2. Transformer shall be shipped fully dressed and assembled.		2. Transformer shall be shipped fully dressed and assembled.	
3. Unless otherwise noted, the shipping destination shall be:		3. Unless otherwise noted, the shipping destination shall be:	
Lakefront Utilities Inc. - Service Centre 25 Ewart Street Cobourg, ON K9A 0H6		Lakefront Utilities Inc. - Service Centre 25 Ewart Street Cobourg, ON K9A 0H6	
3.5 Offloading		3.5 Offloading	
1. Offloading of the transformers at the destination site shall be the responsibility of the Utility.		1. Offloading of the transformers at the destination site shall be the responsibility of the Utility.	
2. The Supplier shall provide two (2) working days' notice of shipping so that arrangements can be made for offloading.		2. The Supplier shall provide two (2) working days' notice of shipping so that arrangements can be made for offloading.	
FIGURE A Location of Fault Indicator Light Hole:		FIGURE A Location of Fault Indicator Light Hole:	
1. TYPICAL STREET LIGHTING PEDESTAL BASE DETAIL		1. TYPICAL STREET LIGHTING PEDESTAL BASE DETAIL	
NOT TO SCALE		NOT TO SCALE	
2. TYPICAL STREET LIGHTING BREAKER PANEL DETAIL		2. TYPICAL STREET LIGHTING BREAKER PANEL DETAIL	
NOT TO SCALE		NOT TO SCALE	