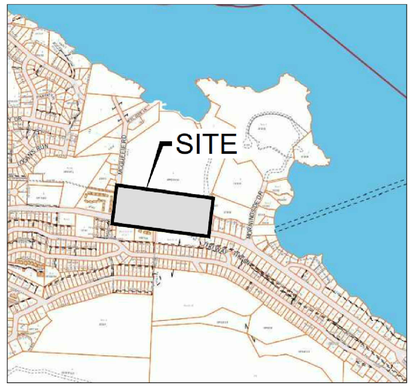
LEGEND

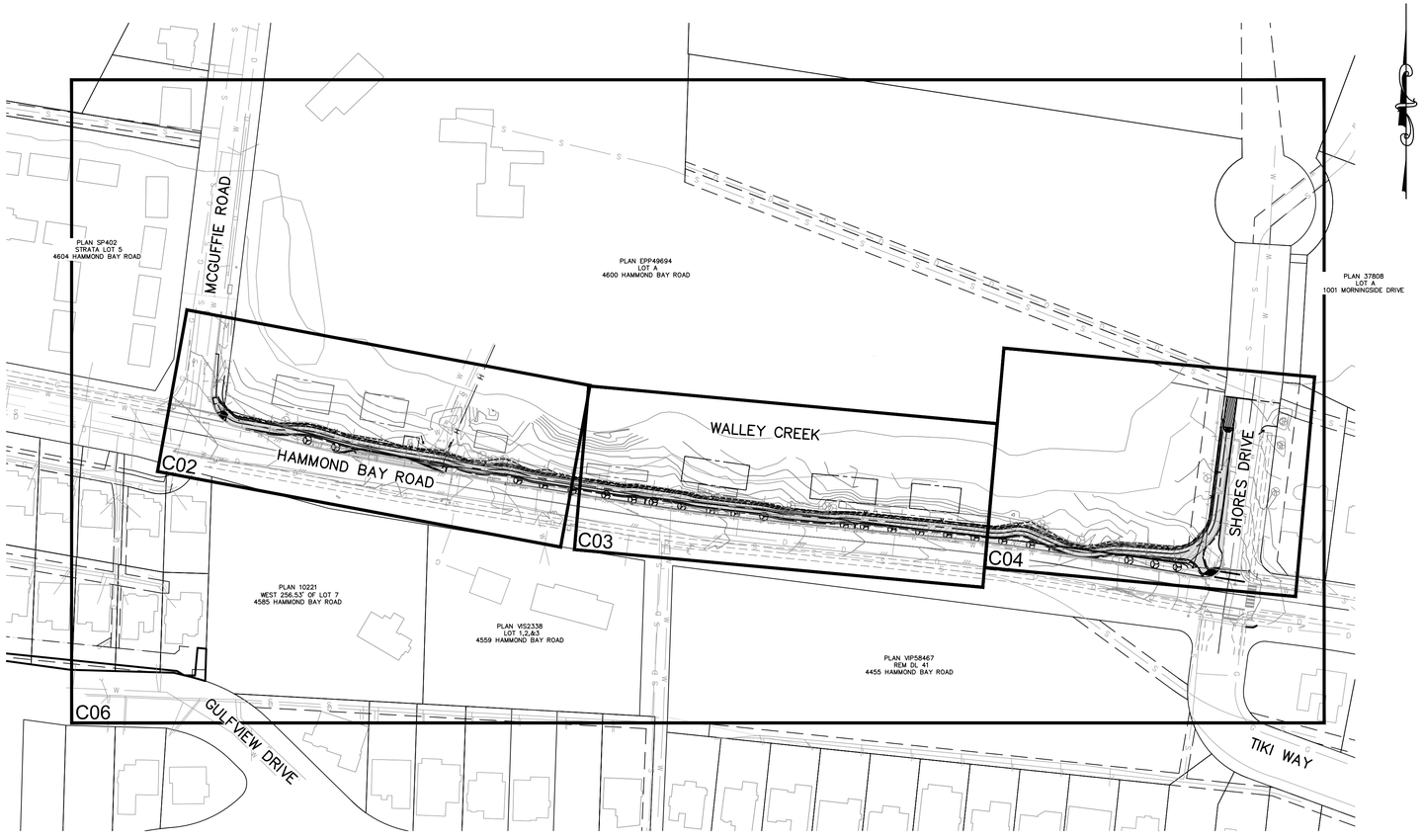
EXISTING	PROPOSED	DESCRIPTION	EXISTING	PROPOSED	DESCRIPTION
		EDGE OF PAVEMENT			REDUCER
CURB		CURB AND GUTTER			FENCE
		EDGE OF GRAVEL			DITCH/SWALE
TB/BB		TOP/BOTTOM OF BANK	W	W	WATERMAIN (SIZE AND MATERIAL NOTED)
CB		CATCH BASIN	S	S	SANITARY SEWER (SIZE AND MATERIAL NOTED)
WV		WATER VALVE	D	D	STORM DRAIN (SIZE AND MATERIAL NOTED)
FH		FIRE HYDRANT	T	T	UNDERGROUND TELEPHONE
		CAPPED END	H	H	UNDERGROUND HYDRO
		UTILITY POLE AND STREET LIGHT (LABELED PP,TP,PP/LS ETC.)			MONUMENT
MH		MANHOLE			PROPERTY LINE
CO		CLEANOUT		5+100 5+110	CENTERLINE AND STATIONING
SSIC/SDIC	SSIC/SDIC	SANITARY/STORM INSPECTION CHAMBER (200ø RISER)			SANITARY SEWER SERVICE CONNECTION AT MAIN
JB		JUNCTION BOX	32.75	43.170+	ELEVATIONS
AV	AV	AIR VALVE			PAVEMENT REMOVAL
WM	WM	WATER METER			NEW ASPHALT

LIST OF DRAWINGS

RDN DWG No.	DWG No.	DESCRIPTION
GN-GEN-G-221	C01	KEY PLAN, DRAWING LIST, & GENERAL NOTES
CN-C-GEN-221	C02	PROPOSED TRAILWAY – PLAN/PROFILE STA. 3+000 TO 3+150
CN-C-GEN-222	C03	PROPOSED TRAILWAY – PLAN/PROFILE STA. 3+150 TO 3+300
CN-C-GEN-223	C04	PROPOSED TRAILWAY – PLAN/PROFILE STA. 3+300 TO 3+420
CN-C-GEN-224	C05	TYPICAL CROSS SECTIONS
CN-C-GEN-225	C06	EROSION & SEDIMENT CONTROL PLAN
CN-C-GEN-226	XS-1	CROSS SECTIONS STA. 3+010 TO 3+100
CN-C-GEN-227	XS-2	CROSS SECTIONS STA. 3+110 TO 3+200
CN-C-GEN-228	XS-3	CROSS SECTIONS STA. 3+210 TO 3+300
CN-C-GEN-229	XS-4	CROSS SECTIONS STA. 3+310 TO 3+420
CN-E-GEN-221	E1	STREET LIGHTING LAYOUT
CN-L-GEN-221	L1	LANDSCAPE PLANTING
CN-L-GEN-222	I1	IRRIGATION PLAN
CN-L-GEN-223	I2	IRRIGATION DETAILS



LOCATION PLAN
NTS



KEY PLAN
1:1000

1:1000 0 20 60m

GENERAL NOTES:

1. ALL WORK AND MATERIALS ARE TO BE AS DESCRIBED IN THE CITY OF NANAIMO ENGINEERING STANDARDS & SPECIFICATIONS LATEST EDITION (No. 12, NOVEMBER 2019) OR AS OTHERWISE APPROVED BY THE CITY ENGINEER.
2. CONNECTION TO, OR ALTERATION OF, EXISTING CITY-OWNED UTILITIES, REQUIRES AUTHORIZATION BY THE CITY ENGINEER.
3. A "PERMIT TO INSTALL WORKS WITHIN STREETS, LANES AND CITY PROPERTY AREAS" WILL BE REQUIRED WHERE CONSTRUCTION IS TO BE UNDERTAKEN IN CITY OF NANAIMO RIGHT-OF-WAYS AND/OR CITY OF NANAIMO-OWNED UTILITIES OR PROPERTIES.
4. UPON APPROVAL OF THE PERMIT, THE CITY OF NANAIMO'S CONSTRUCTION DIVISION SHALL BE NOTIFIED 48 HOURS PRIOR TO COMMENCEMENT OF WORK.
5. THE ENGINEER SHALL BE NOTIFIED 48 HOURS PRIOR TO COMMENCEMENT OF WORK.
6. CONTRACTOR TO COMPLY WITH ALL APPLICABLE MINISTRY OF ENVIRONMENT AND DEPARTMENT OF FISHERIES & OCEANS CANADA REQUIREMENTS AT ALL TIMES DURING CONSTRUCTION.
7. CONTRACTOR TO CONFIRM LOCATION OF EXISTING UTILITIES AT ALL CROSSINGS AND CONNECTIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO CONSTRUCTION.
8. CONTRACTOR TO CONFIRM THAT ELEVATION, LOCATION AND GRADIENT OF ASPHALT MATCH EXISTING PRIOR TO PLACEMENT OF ASPHALT OR CONCRETE.
9. ALL TREES NOT BEING REMOVED IN THE CONSTRUCTION AREA SHALL BE PROTECTED.
10. TREE REMOVAL PERMIT REQUIRED – BY OTHERS.
11. ADJUST ALL MANHOLES, WATER VALVES, HYDRO VAULTS, ETC. TO MATCH NEW CONSTRUCTION.
12. ALL LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES SHOWN ARE APPROXIMATE ONLY AND SHOULD BE CONFIRMED BY USE OF A PIPE LOCATOR AND MANUAL DIGGING. ALL OR ANY STRUCTURES NOT NECESSARILY SHOWN.
13. ALL ELEVATIONS ARE TO GEODETIC DATUM AND ARE REFERENCED TO MONUMENT 82H5677 AT THE INTERSECTION OF MCGUFFIE ROAD & HAMMOND BAY ROAD. ELEVATION = 31.807.
14. DATA SOURCES:
    - TOPOGRAPHIC SURVEY COMPLETED BY 3D GEOMATICS IN JUNE 2017.
    - ASBUILTS PROVIDED BY THE CITY OF NANAIMO.

ROAD NOTES:

1. ALL CURB AND GUTTER TO BE C.O.N. TYPE CS-1 UNLESS OTHERWISE NOTED.

PRIVATE UTILITY NOTES:

1. GAS MAIN AND SERVICE LOCATIONS ARE APPROXIMATE ONLY AND ARE BASED ON FORTIS BC INFORMATION.
2. BC HYDRO TELUS AND SHAW CABLE INFORMATION IS BASED ON BCONE CALL INFORMATION

STORM SEWER NOTES:

1. ALL CATCH BASINS TO BE C.O.N. TYPE 1 UNLESS OTHERWISE NOTED.
2. ALL CATCH BASIN LEADS TO BE 200ø PVC SDR35 UNLESS OTHERWISE NOTED.

ISSUED FOR TENDER

ISSUES

No.	DATE YYYY.MM.DD	ISSUED FOR
A	2017.07.28	ISSUED FOR 75% REVIEW
B	2017.08.31	ISSUED FOR 95% REVIEW
C	2017.09.07	BUS PULLOUT ADDED
D	2017.10.24	ISSUED FOR APPROVAL
E	2019.12.13	ISSUED FOR DSA
F	2020.03.31	ISSUED FOR TENDER

CLIENT

GREATER NANAIMO POLLUTION CONTROL CENTRE FRONTAGE WORKS

4600 HAMMOND BAY ROAD, NANAIMO, BC

REGIONAL DISTRICT OF NANAIMO

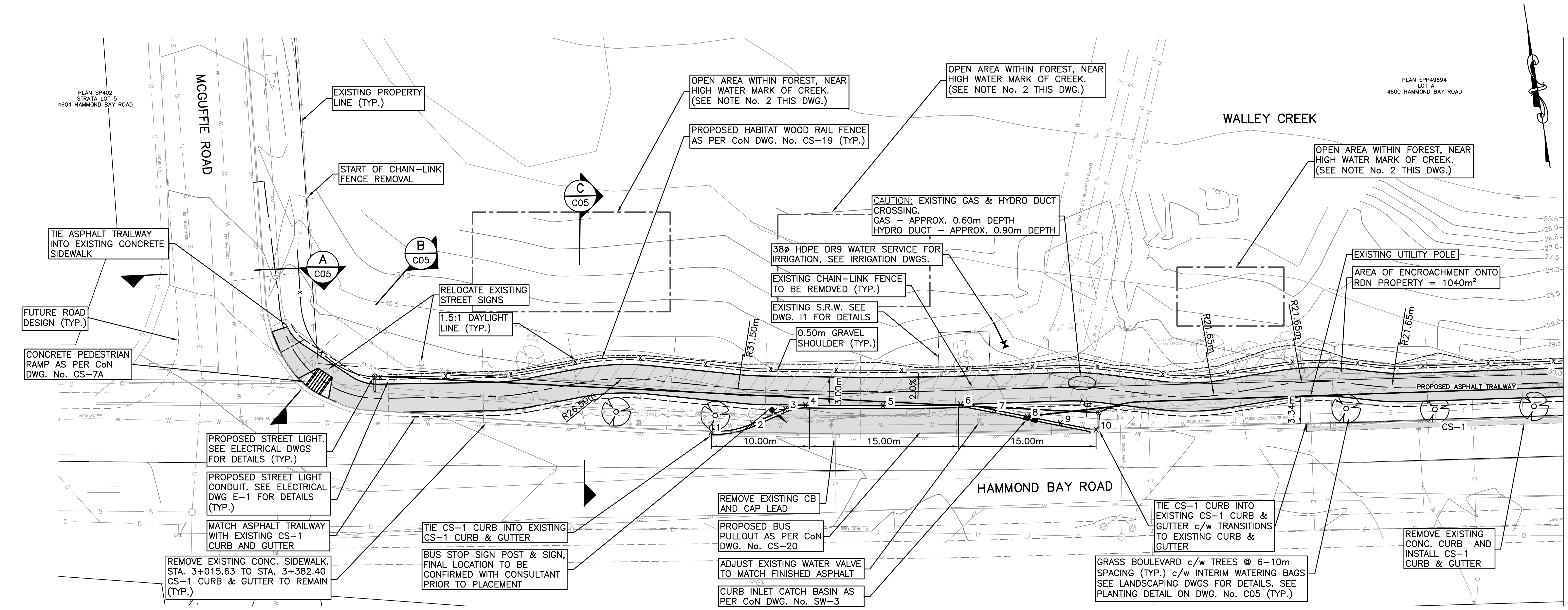
HEROLD ENGINEERING
3701 Shenton Rd, Nanaimo, BC V9T 2H1
Tel: 250-751-8558 Fax: 250-751-8559
Email: mail@heroldengineering.com

KEY PLAN, DRAWING LIST, & GENERAL NOTES

DESIGNED: EGAP	ENGINEER'S SEAL: PROFESSIONAL ENGINEER P.G. RYAN # 34339 PROVINCE OF BRITISH COLUMBIA 2020-04-16
DESIGN REVIEW: PGR	
DRAFTED: EGAP	
DRAFTING REVIEW: PGR	
PROJECT No.: 0837-047	RDN DRAWING No.: GN-GEN-G-221
SCALE: H: 1:1000 V: N/A	PERMIT No.: ENG01365/BP123009
HEL DRAWING No.: C01 1 OF 10	REVISION: F

DESTROY ALL DRAWINGS SHOWING PREVIOUS REVISION

File: H:\Projects\0837-047 GNPCC Frontage Works\04C Drawings\0837-047 Civil Drawings.dwg Plot Time: Apr. 16, 20 3:10 PM User: Patrick Ryan



FOR CONTINUATION SEE DWG. No. C03

NOTES:

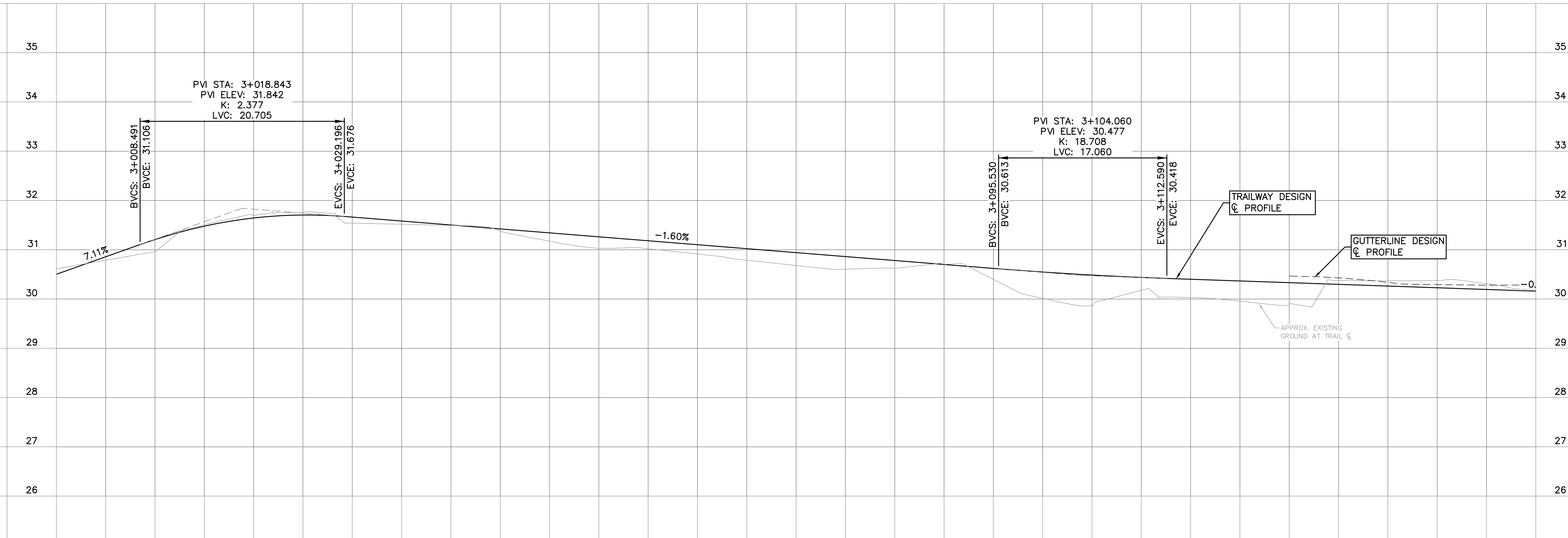
1. FOR GENERAL NOTES SEE DWG. No. C01
2. FOR FURTHER DETAIL ON PLANTINGS AND MAINTENANCE REQUIREMENTS SEE ENVIRONMENTAL DYNAMICS INC. (EDI) REPORT: 'TREE REPLACEMENT AND RIPARIAN ENHANCEMENT FOR GNPCC FRONTAGE WORKS'

CURB RETURN ELEVATIONS

1	–	31.074
2	–	30.989
3	–	30.906
4	–	30.872
5	–	30.759
6	–	30.647
7	–	30.597
8	–	30.579
9	–	30.593
10	–	30.562

ISSUED FOR TENDER

1:250 0 5 15m



℄ CHAINAGE	HAMMOND BAY ROAD DESIGN GUTTER ELEVATIONS	EXISTING ℄ ELEVATIONS	DESIGN ℄ ELEVATIONS
3+000		30.85	30.613
		31.06	30.787
		31.27	30.962
		31.51	31.506
3+020		31.70	31.698
		31.78	31.752
		31.71	31.540
		31.65	31.517
3+040		31.56	31.495
		31.39	31.377
		31.15	31.175
		30.98	31.029
3+060		30.94	31.022
		30.88	30.914
		30.82	30.787
		30.76	30.681
3+080		30.69	30.604
		30.62	30.624
		30.43	30.708
		30.23	30.399
3+100		30.04	30.013
		29.93	29.861
		30.18	30.176
		30.28	30.030
3+120		30.12	29.956
		29.91	29.880
	30.43	30.39	30.375
	30.34	30.37	30.370
3+140	30.29	30.33	30.376
	30.28	30.28	30.310
3+150	30.29	30.17	

ISSUES

No.	DATE YYYY.MM.DD	ISSUED FOR
A	2017.07.28	ISSUED FOR 75% REVIEW
B	2017.08.31	ISSUED FOR 95% REVIEW
C	2017.09.07	BUS PULLOUT ADDED
D	2017.10.24	ISSUED FOR APPROVAL
E	2019.12.13	ISSUED FOR DSA
F	2020.03.31	ISSUED FOR TENDER

CLIENT

GREATER NANAIMO POLLUTION CONTROL CENTRE FRONTAGE WORKS

4600 HAMMOND BAY ROAD, NANAIMO, BC

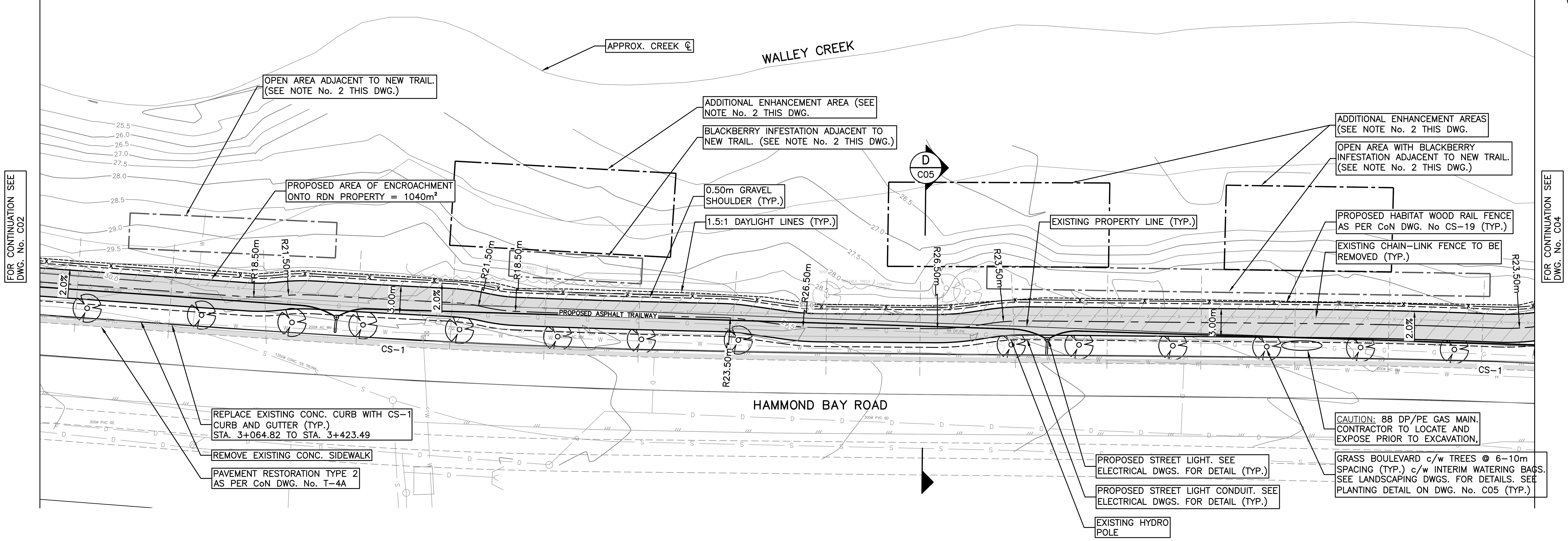
REGIONAL DISTRICT OF NANAIMO

HEROLD ENGINEERING
3701 Shenton Rd, Nanaimo, BC V9T 2H1
Tel: 250-751-8558 Fax: 250-751-8559
Email: mail@heroldengineering.com

PROPOSED TRAILWAY PLAN/PROFILE STA. 3+000 TO 3+150

DESIGNED: EGAP	ENGINEER'S SEAL: PROFESSIONAL ENGINEER, P. G. RYAN # 34339, PROVINCE OF BRITISH COLUMBIA, 2020-04-16
DESIGN REVIEW: PGR	
DRAFTED: EGAP	
DRAFTING REVIEW: PGR	
PROJECT No.: 0837-047	RDN DRAWING No.: GN-C-GEN-221
SCALE H: 1:250 V: 1:50	PERMIT No.: ENG01365/BP123009
HEL DRAWING No.: C02 — 2 OF 10	REVISION: F

DESTROY ALL DRAWINGS SHOWING PREVIOUS REVISION



NOTES:

1. FOR GENERAL NOTES SEE DWG. No. C01
2. FOR FURTHER DETAIL ON PLANTINGS AND MAINTENANCE REQUIREMENTS SEE ENVIRONMENTAL DYNAMICS INC. (EDI) REPORT: 'TREE REPLACEMENT AND RIPARIAN ENHANCEMENT FOR GNPCC FRONTAGE WORKS'

ISSUES

No.	DATE YYYY.MM.DD	ISSUED FOR
A	2017.07.28	ISSUED FOR 75% REVIEW
B	2017.08.31	ISSUED FOR 95% REVIEW
C	2017.09.07	BUS PULLOUT ADDED
D	2017.10.24	ISSUED FOR APPROVAL
E	2019.12.13	ISSUED FOR DSA
F	2020.03.31	ISSUED FOR TENDER

CLIENT

ISSUED FOR TENDER

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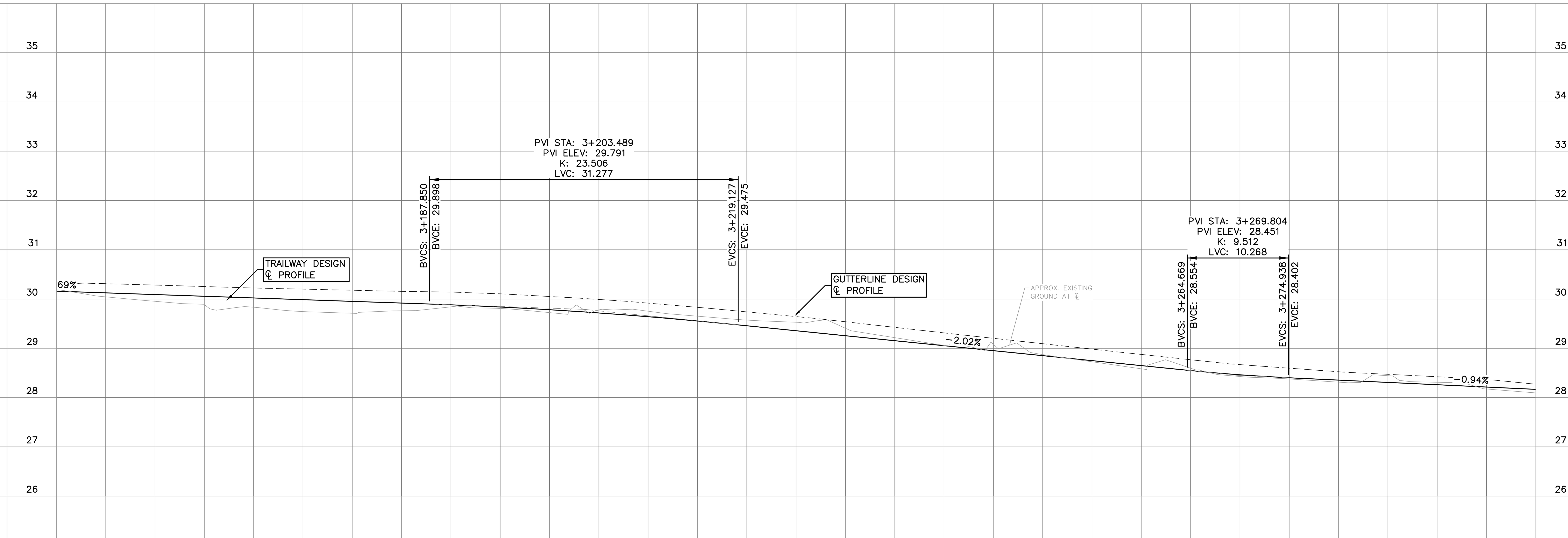

℄ CHAINAGE	HAMMOND BAY ROAD DESIGN GUTTER ELEVATIONS	DESIGN ℄ ELEVATIONS	EXISTING ℄ ELEVATIONS
3+150	30.29	30.17	30.186
	30.31	30.05	30.044
3+160	30.28	29.94	29.954
	30.25	29.82	29.887
	30.22	29.81	29.834
	30.20	29.79	29.746
3+180	30.17	29.78	29.711
	30.15	29.77	29.761
	30.14	29.77	29.842
	30.11	29.84	29.808
3+200	30.05	29.81	29.724
	29.99	29.76	29.780
	29.92	29.69	29.753
	29.83	29.63	29.652
3+220	29.75	29.57	29.572
	29.65	29.53	29.529
	29.55	29.45	29.407
	29.43	29.33	29.216
3+240	29.32	29.21	29.058
	29.20	29.02	29.080
	29.09	28.85	28.872
	28.98	28.76	28.727
3+260	28.88	28.66	28.584
	28.78	28.57	28.596
	28.69	28.51	28.427
	28.60	28.46	28.378
3+280	28.52	28.41	28.313
	28.46	28.36	28.444
	28.41	28.31	28.310
	28.37	28.26	28.174
3+300	28.34	28.21	

GREATER NANAIMO POLLUTION CONTROL CENTRE FRONTAGE WORKS

4600 HAMMOND BAY ROAD, NANAIMO, BC

REGIONAL DISTRICT OF NANAIMO

HEROLD ENGINEERING
3701 Shenton Rd, Nanaimo, BC V9T 2H1
Tel: 250-751-8558 Fax: 250-751-8559
Email: mail@heroldengineering.com

PROPOSED TRAILWAY PLAN/PROFILE STA. 3+150 TO 3+300

DESIGNED: EGAP
DESIGN REVIEW: PGR
DRAFTED: EGAP
DRAFTING REVIEW: PGR
ENGINEER'S SEAL: PROFESSIONAL ENGINEER, PROVINCE OF BRITISH COLUMBIA, P.G. RYAN # 34339, 2020-04-16
PROJECT No.: 0837-047
RDN DRAWING No.: GN-C-GEN-222
SCALE H: 1:250 V: 1:50
PERMIT No.: ENG01365/BP123009
HEL DRAWING No.: C03 3 OF 10
REVISION: F

DESTROY ALL DRAWINGS SHOWING PREVIOUS REVISION

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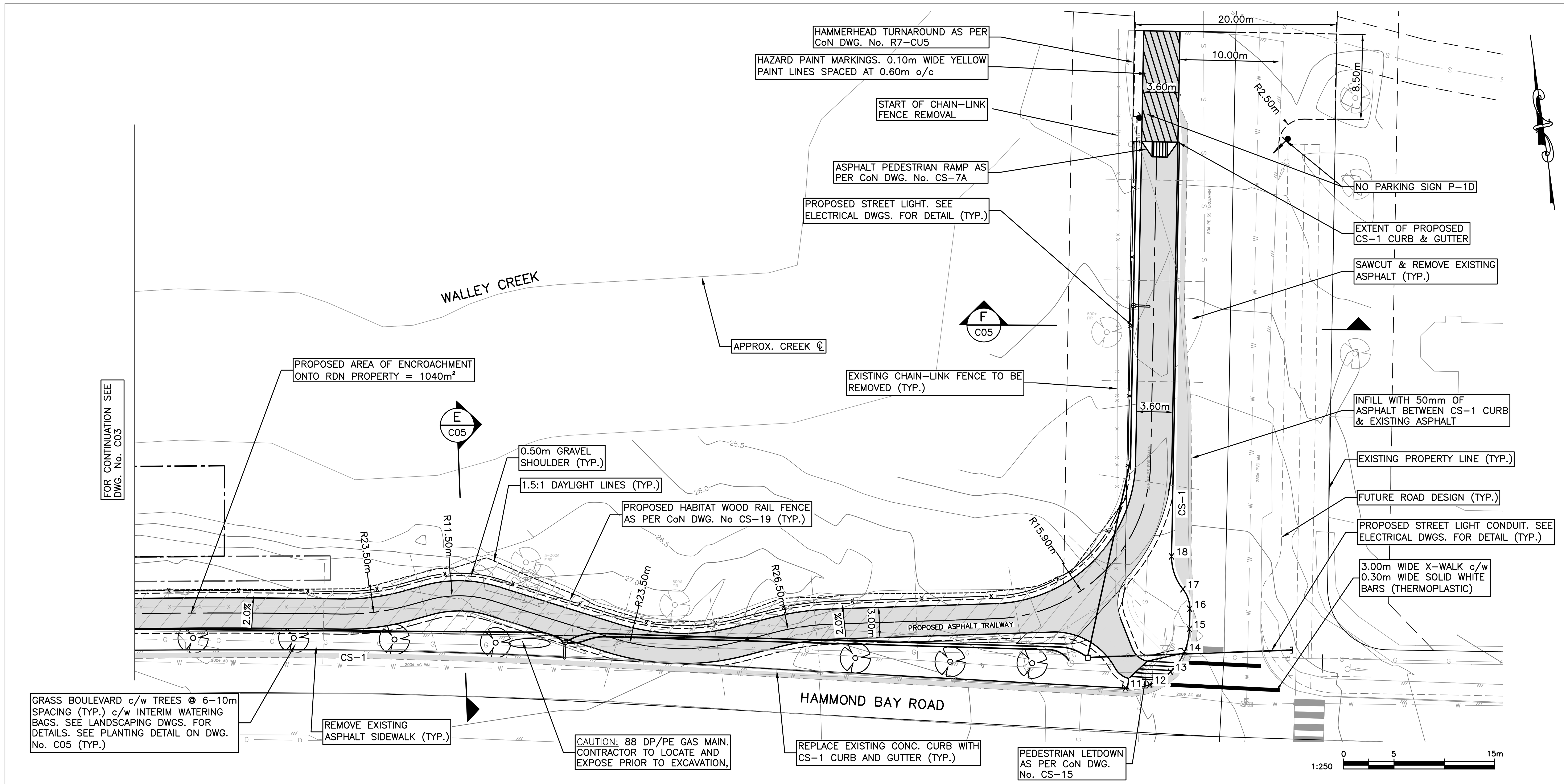


NOTES:

1. FOR GENERAL NOTES SEE DWG. No. C01.
2. FOR FURTHER DETAIL ON PLANTINGS AND MAINTENANCE REQUIREMENTS SEE ENVIRONMENTAL DYNAMICS INC. (EDI) REPORT: TREE REPLACEMENT RECOMMENDATIONS FOR GNPCC FRONTAGE WORKS FROM NOVEMBER 20, 2019.
3. ALL SIGNAGE TO BE AS PER THE 'MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES' (MUTCD) LATEST EDITION.
4. ALL SIGN LOCATIONS AND PAINT MARKINGS TO BE AS PER CITY OF NANAIMO STANDARDS.
5. ALL PAINT MARKINGS TO BE THERMOPLASTIC PAINT.

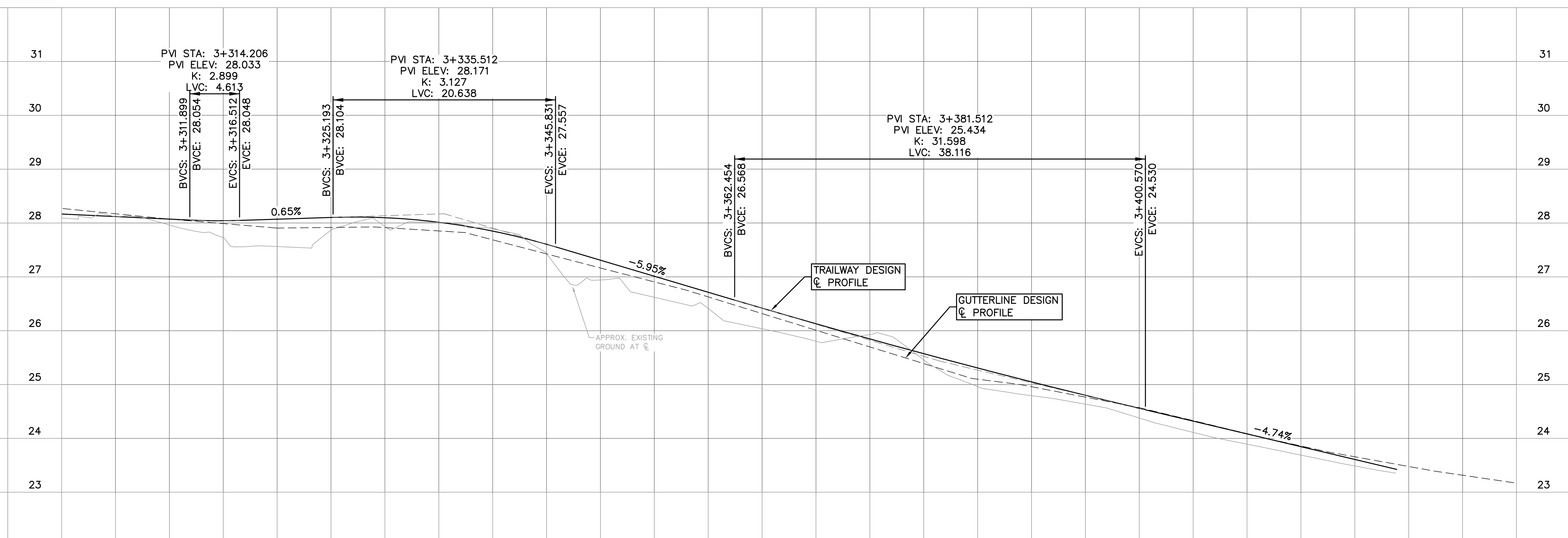
SIGNS SCHEDULE – THIS DRAWING

SIGN	QTY.	LOCATION
P–1D	1	STA 3+420 (EAST SIDE OF ENTRANCE TO TURNAROUND)
P–1D	1	STA 3+420 (WEST SIDE OF EXIT TO TURNAROUND)

CURB RETURN ELEVATIONS

11	–	26.214
12	–	26.087
13	–	25.946
14	–	25.770
15	–	25.584
16	–	25.437
17	–	25.294
18	–	25.113

ISSUED FOR TENDER



℄ CHAINAGE	HAMMOND BAY RD. /SHORES DRIVE. DESIGN GUTTER ELEVATIONS	EXISTING ℄ ELEVATIONS	DESIGN ℄ ELEVATIONS
3+300			28.095
	28.28	28.15	28.113
	28.24	27.97	27.963
	28.98	27.74	27.725
3+320	28.80	27.78	27.562
	28.80	27.89	27.870
	27.80	28.13	27.936
	27.80	28.06	28.011
3+340	27.68	27.94	27.890
	27.51	27.28	27.435
	27.38	26.64	26.942
	26.97	26.46	26.620
3+360	26.88	26.25	26.413
	26.55	26.04	26.036
	26.34	25.80	25.804
	26.25	25.93	25.927
3+380	25.68	25.46	25.458
	25.08	24.96	24.962
	24.97	24.77	24.793
	24.71	24.57	24.635
3+400	24.58	24.35	24.378
	24.31	24.11	24.111
	24.08	23.89	23.893
	23.86	23.69	23.689
3+420	23.68	23.49	23.488

ISSUES

No.	DATE YYYY.MM.DD	ISSUED FOR
A	2017.07.28	ISSUED FOR 75% REVIEW
B	2017.08.31	ISSUED FOR 95% REVIEW
C	2017.09.07	BUS PULLOUT ADDED
D	2017.10.24	ISSUED FOR APPROVAL
E	2019.12.13	ISSUED FOR DSA
F	2020.03.31	ISSUED FOR TENDER

CLIENT

GREATER NANAIMO POLLUTION CONTROL CENTRE FRONTAGE WORKS

4600 HAMMOND BAY ROAD, NANAIMO, BC

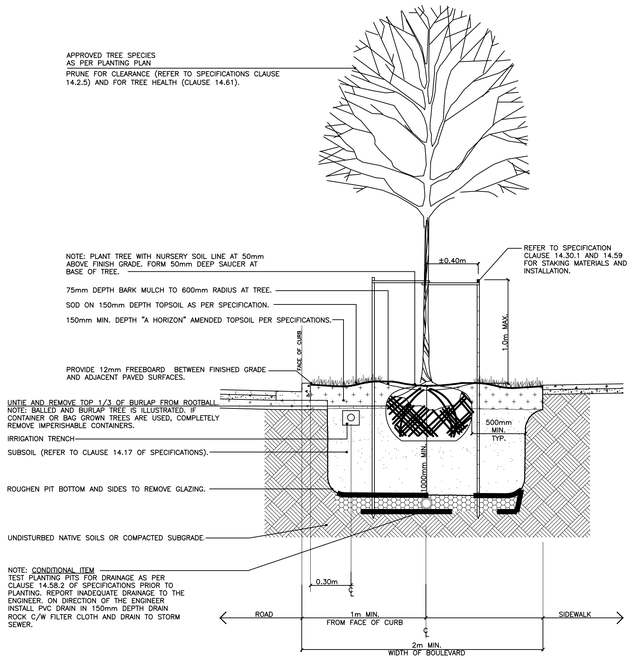
REGIONAL DISTRICT OF NANAIMO

HEROLD ENGINEERING
3701 Shenton Rd, Nanaimo, BC V9T 2H1
Tel: 250–751–8558 Fax: 250–751–8559
Email: mail@heroldengineering.com

PROPOSED TRAILWAY PLAN/PROFILE STA. 3+300 TO 3+420

DESIGNED: EGAP	ENGINEER'S SEAL: PROFESSIONAL ENGINEER, PROVINCE OF BRITISH COLUMBIA, P.G. RYAN # 34339, 2020-04-16
DESIGN REVIEW: PGR	
DRAFTED: EGAP	
DRAFTING REVIEW: PGR	
PROJECT No.: 0837–047	RDN DRAWING No.: GN–C–GEN–223
SCALE H: 1:250 V: 1:50	PERMIT No.: ENG01365/BP123009
HEL DRAWING No.: C04 — 4 OF 10	REVISION: F

DESTROY ALL DRAWINGS SHOWING PREVIOUS REVISION

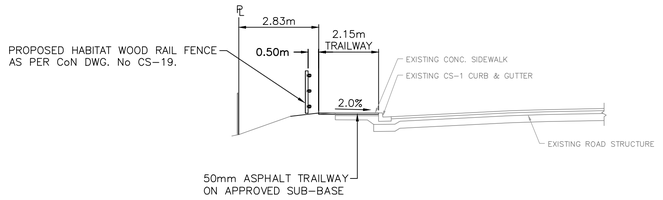


TREE PLANTING IN GRASS BOULEVARD nts
SECTION VIEW–P–2

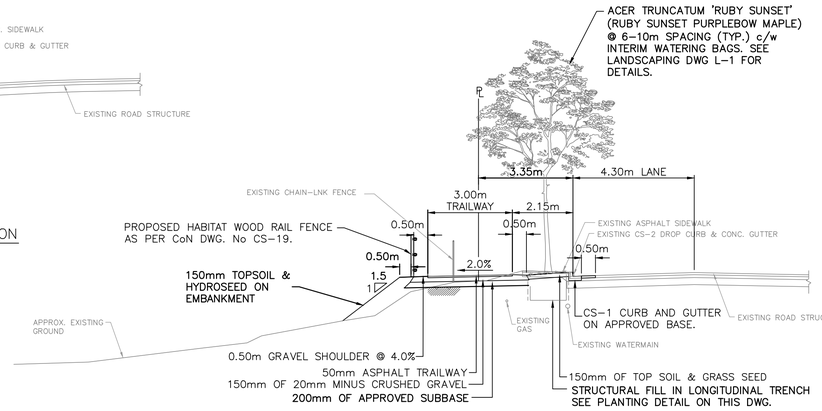
City of Nanaimo

TREE PLANTING IN GRASS BOULEVARD

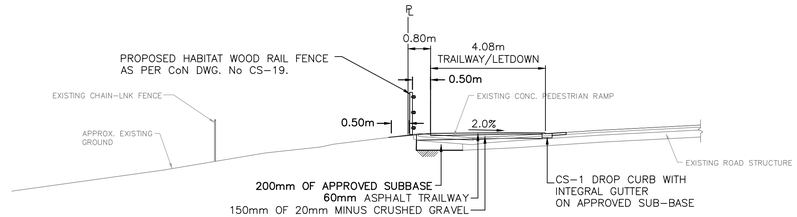
Scale	N.T.S.
Drawn	J.G.
Date:	JAN. 1998
Dwg. No.	P–2



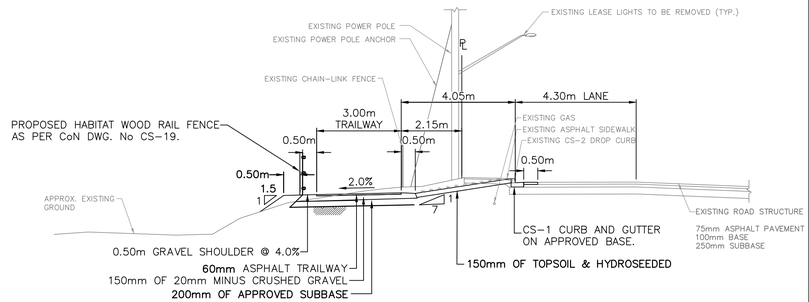
A C02 SECTION NTS



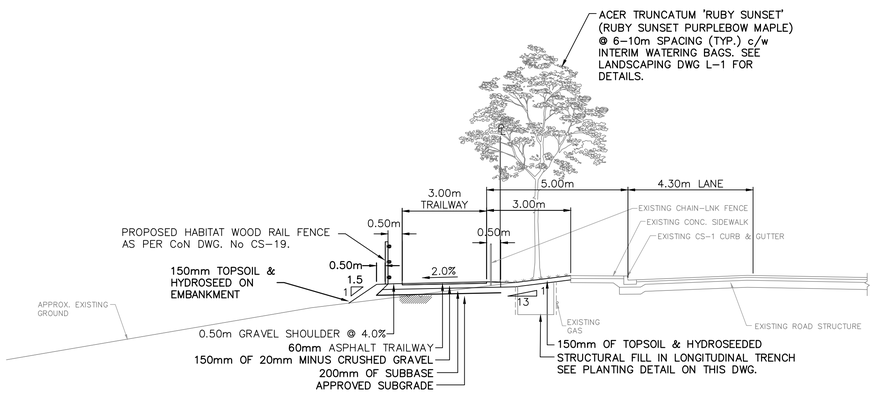
D C03 SECTION NTS



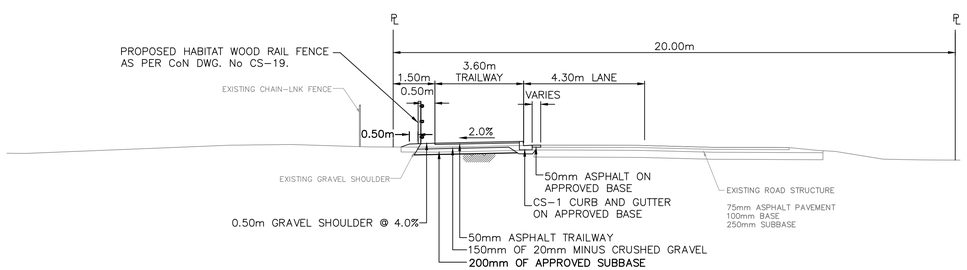
B C02 SECTION NTS



E C04 SECTION NTS



C C02 SECTION NTS



F C04 SECTION NTS

ISSUED FOR TENDER

NOTES:

1. FOR GENERAL NOTES SEE DWG. No. C01.

ISSUES

No.	DATE YYYY.MM.DD	ISSUED FOR
A	2017.07.28	ISSUED FOR 75% REVIEW
B	2017.08.31	ISSUED FOR 95% REVIEW
C	2017.09.07	BUS PULLOUT ADDED
D	2017.10.24	ISSUED FOR APPROVAL
E	2019.12.13	ISSUED FOR DSA
F	2020.03.31	ISSUED FOR TENDER

CLIENT

GREATER NANAIMO POLLUTION CONTROL CENTRE
FRONTAGE WORKS

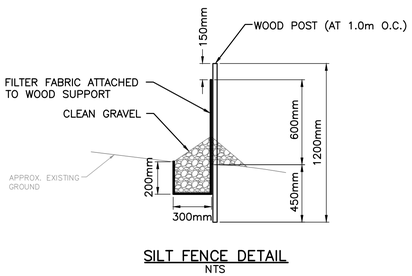
4600 HAMMOND BAY ROAD, NANAIMO, BC
REGIONAL DISTRICT OF NANAIMO

HEROLD ENGINEERING
3701 Shenton Rd, Nanaimo, BC V9T 2H1
Tel: 250–751–8558 Fax: 250–751–8559
Email: mail@heroldengineering.com

TYPICAL CROSS SECTIONS

DESIGNED EGAP	ENGINEER'S SEAL
DESIGN REVIEW PGR	
DRAFTED EGAP	
DRAFTING REVIEW PGR	
PROJECT No. 0837–047	RDN DRAWING No. GN–C–GEN–224
SCALE H: NA V: NA	PERMIT No. ENG01365/BP123009
HEL DRAWING No. C05	5 OF 10
REVISION F	

DESTROY ALL DRAWINGS SHOWING PREVIOUS REVISION



SILT FENCE DETAIL
NTS

EROSION & SEDIMENT CONTROL NOTES:

1. EROSION AND SEDIMENT CONTROL FOR THIS PROJECT WILL BE AS OUTLINED IN THE FISHERIES AND OCEANS CANADA & MINISTRY OF WATER, LANDS AND AIR PROTECTION HANDBOOK ENTITLED "LAND DEVELOPMENT GUIDELINES FOR THE PROTECTION OF THE AQUATIC HABITAT, SEPTEMBER 1993" AND "ENVIRONMENTAL BEST MANAGEMENT PRACTICES FOR URBAN AND RURAL LAND DEVELOPMENT IN BRITISH COLUMBIA, JUNE 2004" AND "EROSION & SEDIMENT CONTROL GUIDELINE" BY THE CITY OF NANAIMO. IT IS INCUMBENT UPON THE CONTRACTOR TO ACQUIRE THESE GUIDELINES AND FAMILIARIZE HIMSELF WITH THE REQUIREMENTS WITHIN.
2. THE CONSULTANT ASSUMES NO RESPONSIBILITY FOR DAMAGES RESULTING FROM IMPROPER EROSION AND SEDIMENT CONTROL MEASURES UNDERTAKEN BY THE CONTRACTOR.
3. ANY DIRECTION GIVEN BY THE CONSULTANT OR CITY TO THE CONTRACTOR FOR EROSION AND SEDIMENT CONTROL AND NOT FOLLOWED BY THE CONTRACTOR IS TO BE REPORTED TO THE CITY IMMEDIATELY.
4. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE NO MUD, DIRT, SOIL, SILT OR ANY OTHER SUBSTANCES ARE SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS OF WAY, OR AREAS THAT LEAD TO CATCH BASINS CONNECTED TO PUBLIC SYSTEMS. THE CONTRACTOR IS TO CLEAN ANY SUCH MATERIAL IMMEDIATELY. i.e. STREETS ARE TO BE SWEPT WITH A VACUUM STREET SWEEPER AFTER WORK STOPPAGE EACH DAY.
5. PRIOR TO CONSTRUCTION, INSTALL A TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT TO LIMIT TRACKING OF SITE SOILS ONTO OFFSITE ROADWAYS. THE WIDTH OF THE PAD SHOULD NOT BE LESS THAN THE FULL WIDTH OF POINT OF INGRESS OR EGRESS IN ANY CASE SHOULD NOT BE LESS THAN 6m WIDE WITH A LENGTH OF THE PAD NOT LESS THAN 20m AND HAVING A MINIMUM THICKNESS OF 200mm (8") OF COARSE GRANULAR MATERIAL. COARSE GRANULAR MATERIAL SUCH AS 75mm PLUS SHOT ROCK OR FRACTURED DRAIN ROCK UNDERLAIN WITH GEO-TEXTILE FABRIC IS RECOMMENDED.
6. THE ENTRANCE SHOULD BE MAINTAINED FOR THE DURATION OF CONSTRUCTION, IN A CONDITION THAT WILL PREVENT TRACKING OF SEDIMENT ONTO PUBLIC RIGHT OF WAYS, OR AREAS THAT LEAD TO CATCH BASINS CONNECTED TO PUBLIC SYSTEMS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL MATERIAL AS CONDITIONS DEMAND. THE PAD MAY BE REMOVED ONCE PERMANENT PAVEMENTS ARE IN PLACE AT THE SITE. A WHEEL WASH MAY BE REQUIRED IF THE TEMPORARY GRAVEL PAD IS NOT WORKING.
7. PRIOR TO CONSTRUCTION, CONTRACTOR TO CLEARLY FLAG OR FENCE AREAS OF NO DISTURBANCE AS WELL AS ANY DESIGNATED TREES AND SHRUBS THAT ARE TO BE PRESERVED. MARKINGS SHALL REMAIN IN PLACE THROUGHOUT CONSTRUCTION.
8. CONTRACTOR TO STRIP AND GRUB ONLY THOSE AREAS NECESSARY FOR THE CURRENT CONSTRUCTION. STAGE CONSTRUCTION OPERATIONS TO LIMIT DISTURBANCE AND DO NOT STRIP ANY AREA UNTIL REQUIRED.
9. GRADE WORK AREAS AWAY FROM ADJACENT PROPERTIES AND TOWARDS THE SEDIMENT POND ON THE SITE FOR DISPERSAL INFILTRATION.
10. REVEGETATION OPERATIONS SHOULD BE CARRIED OUT WITHIN ONE WEEK OF GRADING COMPLETION OR NO LATER THAN SEPT. 15th.
11. SILT FENCING IS TO BE INSTALLED AROUND ALL STOCK/SPOIL PILES, OR PILES ARE TO BE OTHERWISE COVERED TO LIMIT EROSION AND SEDIMENT GENERATION.
12. WHEN SHOWN ON THE CONTRACT DRAWINGS, CONTRACTOR TO INSTALL SETTLEMENT PONDS EQUIPPED WITH EMERGENCY OVERFLOW, FOR RETENTION/INFILTRATION TREATMENT OF RUNOFF COLLECTED BY INTERCEPTOR SWALES (DITCHES) AND/OR SILT BARRIERS. THE SETTLEMENT PONDS ARE TO HAVE A MINIMUM VOLUME TO CONTAIN FLOWS FROM A 10-YEAR RETURN PERIOD, 24-HOUR RAINFALL EVENT. THE PONDS SHOULD BE USED AND MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION.
13. ROUTINE INSPECTION AND MAINTENANCE OF THE SYSTEM COMPONENTS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHOULD DESIGNATE AN ON-SITE PERSON TO BE RESPONSIBLE FOR DAY-TO-DAY MANAGEMENT OF THE ESCP. AT A MINIMUM, INSPECT ALL BMP'S WEEKLY TO ENSURE PROPER FUNCTION WITH INSPECTION REPORTS PROVIDED TO THE ENGINEER AND THE CITY OF NANAIMO FOR REVIEW.
14. 48 HOURS PRIOR TO ANY PREDICTED SIGNIFICANT STORM EVENT, THE DESIGNATED SITE PERSON SHOULD INSPECT THE E&SC WORKS AND ENSURE THAT THE WORKS ARE ADEQUATE TO PROTECT THE SITE DURING THE STORM EVENT AND PROVIDE A WRITTEN REPORT TO THE ENGINEER AND/OR THE CITY UPON REQUEST. IF THE DESIGNATED SITE PERSON DETERMINES THAT THE E&SC WORKS ARE NOT ADEQUATE TO PROTECT THE SITE DURING THE ANTICIPATED STORM EVENT, THEN HE/SHE IS TO IMMEDIATELY INFORM THE ENGINEER AND CONTRACTOR SO THAT THE WORKS CAN BE MODIFIED TO ADEQUATELY PROTECT THE SITE DURING THE STORM EVENT AND PROVIDE A WRITTEN REPORT TO THE ENGINEER AND/OR THE CITY UPON REQUEST.
15. DURING AND/OR FOLLOWING EACH SIGNIFICANT STORM EVENT, THE DESIGNATED SITE PERSON SHOULD OBSERVE THE SETTLEMENT PONDS AND STORM DRAIN TO CONFIRM THAT TURBID WATERS FROM SOURCES ASSOCIATED WITH CONSTRUCTION ARE NOT ENTERING THE STORM DRAINAGE SYSTEM. TAKE IMMEDIATE CORRECTIVE ACTION IF INSPECTION INDICATES A PROBLEM. RECORD INSPECTION DATES, ANY SIGNIFICANT OBSERVATIONS, AND ACTIONS TAKEN, THEN INFORM THE CONSULTANT IN CHARGE AND THE CITY OF NANAIMO.
16. CITY OF NANAIMO STANDARD EROSION & SEDIMENT CONTROL SIGNAGE IS REQUIRED TO BE PLACED ON-SITE PRIOR TO THE START OF CONSTRUCTION AND MAINTAINED IN PLACE UNTIL LANDSCAPING IS COMPLETED.

LEGEND

OVERLAND FLOW

TEMPORARY SILT FENCE

ISSUED FOR TENDER

ISSUES

No.	DATE YYYY.MM.DD	ISSUED FOR
A	2017.07.28	ISSUED FOR 75% REVIEW
B	2017.08.31	ISSUED FOR 95% REVIEW
C	2017.09.07	BUS PULLOUT ADDED
D	2017.10.24	ISSUED FOR APPROVAL
E	2019.12.13	ISSUED FOR DSA
F	2020.03.31	ISSUED FOR TENDER

CLIENT

GREATER NANAIMO POLLUTION CONTROL CENTRE
FRONTAGE WORKS

4600 HAMMOND BAY ROAD, NANAIMO, BC

REGIONAL DISTRICT OF NANAIMO

HEROLD ENGINEERING
3701 Shenton Rd, Nanaimo, BC V9T 2H1
Tel: 250-751-8558 Fax: 250-751-8559
Email: mail@heroldengineering.com

EROSION & SEDIMENT CONTROL PLAN

DESIGNED EGAP	ENGINEER'S SEAL
DESIGN REVIEW PGR	
DRAFTED EGAP	
DRAFTING REVIEW PGR	
PROJECT No. 0837-047	RDN DRAWING No. GN-C-GEN-225
SCALE H: 1:250 V: 1:50	PERMIT No. ENG01365/BP123009
HEL DRAWING No. C06	6 OF 10
REVISION F	

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA P. G. TIVAN # 34339 ENGINEER 2020-04-16

DESTROY ALL DRAWINGS SHOWING PREVIOUS REVISION

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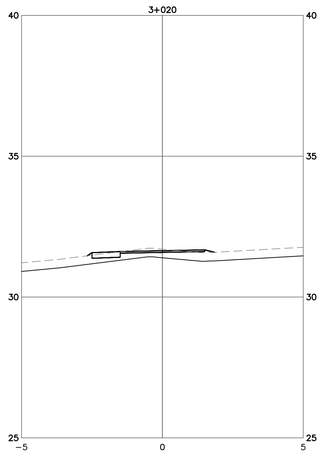

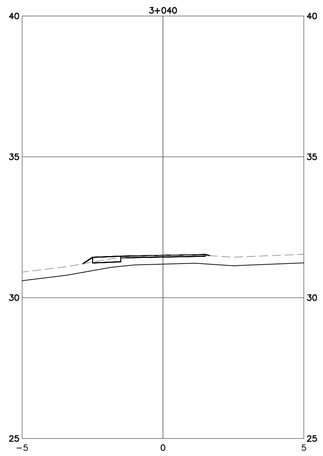

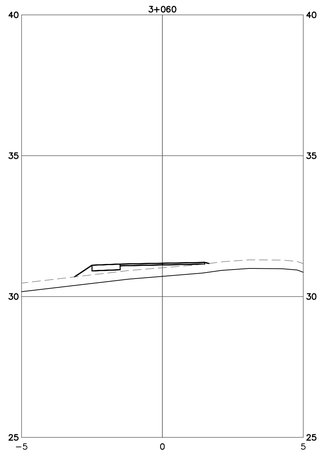

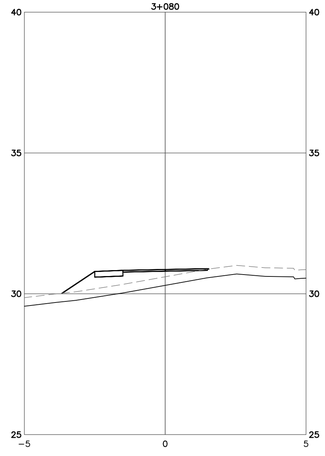

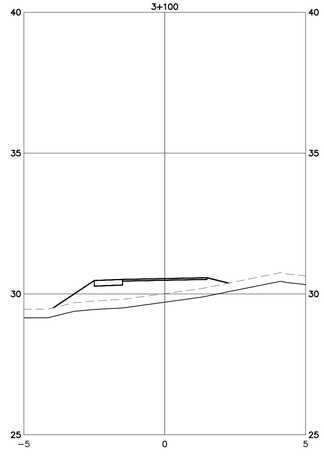

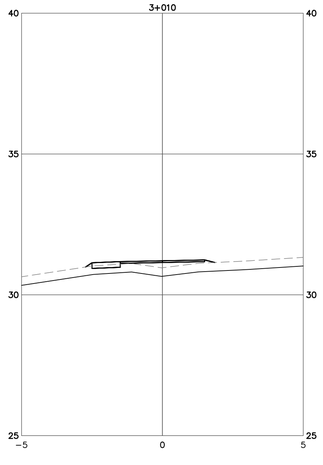

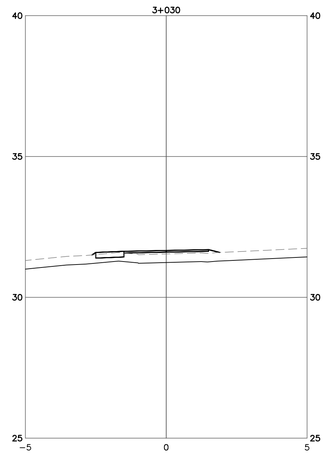

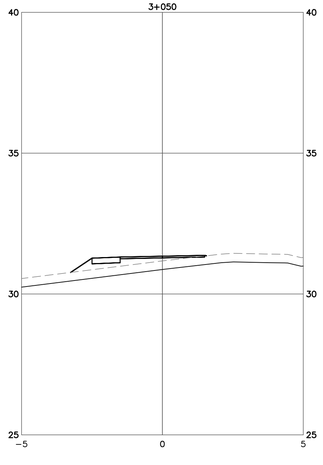

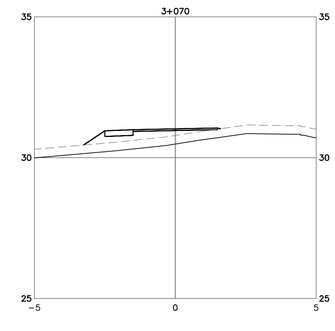

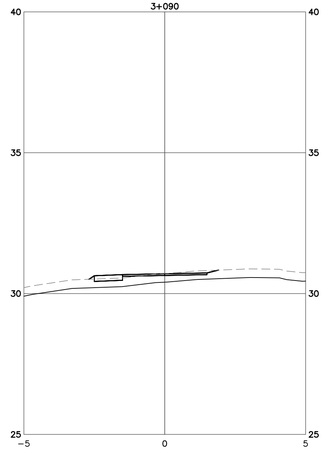

ISSUED FOR TENDER

ISSUES		
No.	DATE YYYY.MM.DD	ISSUED FOR
A	2017.07.28	ISSUED FOR 75% REVIEW
B	2017.08.31	ISSUED FOR 95% REVIEW
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D	2017.10.24	ISSUED FOR APPROVAL
E	2019.12.13	ISSUED FOR DSA
F	2020.03.31	ISSUED FOR TENDER

CLIENT

GREATER NANAIMO POLLUTION CONTROL CENTRE FRONTAGE WORKS

4600 HAMMOND BAY ROAD, NANAIMO, BC

REGIONAL DISTRICT OF NANAIMO

HEROLD ENGINEERING
3701 Shenton Rd, Nanaimo, BC V9T 2H1
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CROSS SECTIONS
STA. 3+010 TO 3+100

DESIGNED EGAP	ENGINEER'S SEAL: PROFESSIONAL ENGINEER, P.G. RYAN, # 34339, PROVINCE OF BRITISH COLUMBIA, 2020-04-16
DESIGN REVIEW PGR	
DRAFTED EGAP	
DRAFTING REVIEW PGR	
PROJECT No. 0837-047	RDN DRAWING No. GN-C-GEN-226
SCALE H: 1:100 V: 1:50	PERMIT No. ENG01365/BP123009
HEL DRAWING No. XS-1	7 OF 10
REVISION F	

DESTROY ALL DRAWINGS SHOWING PREVIOUS REVISION

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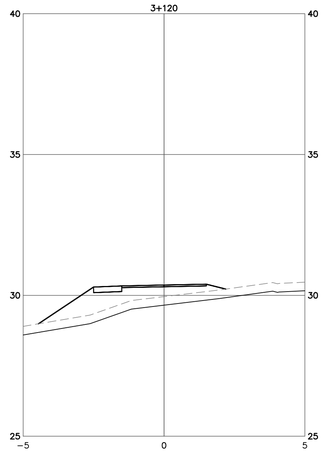

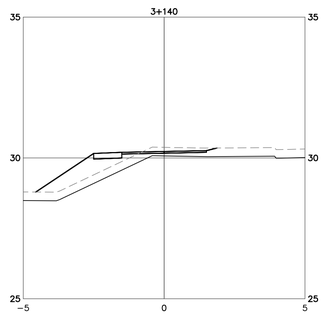

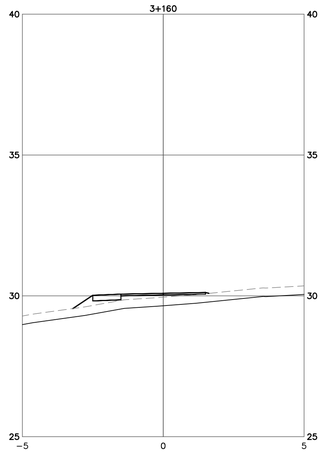

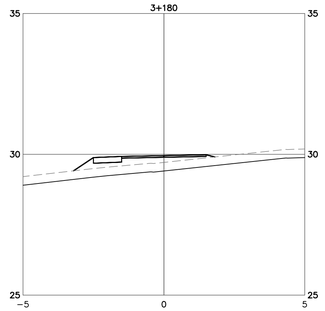

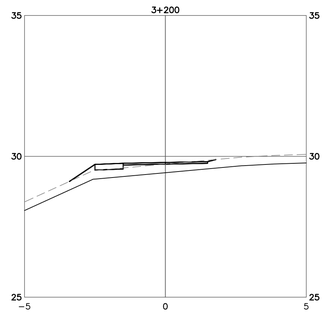

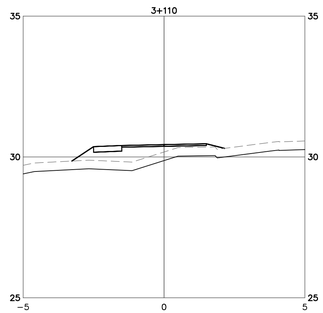

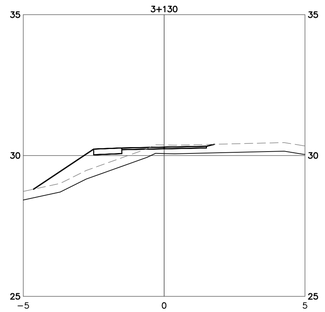

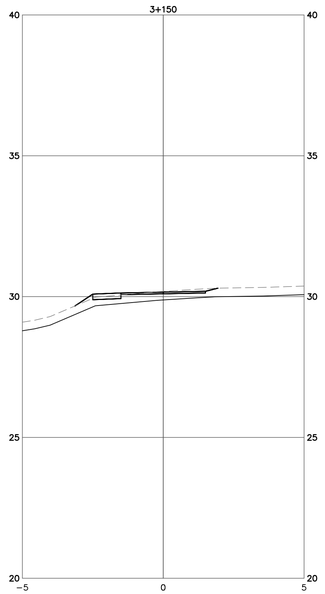

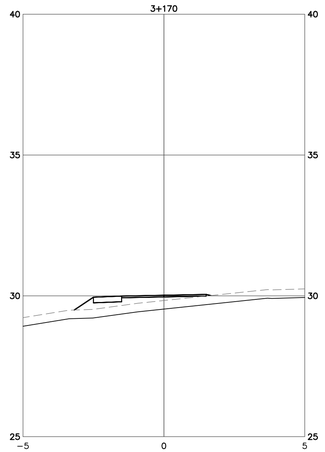

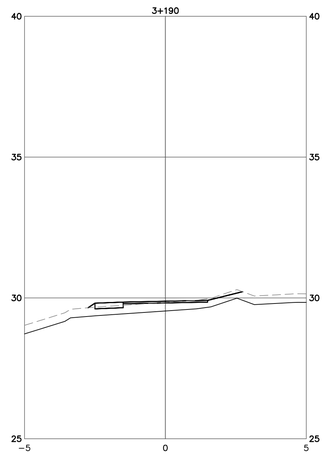

ISSUED FOR TENDER

ISSUES		
No.	DATE YYYY.MM.DD	ISSUED FOR
A	2017.07.28	ISSUED FOR 75% REVIEW
B	2017.08.31	ISSUED FOR 95% REVIEW
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D	2017.10.24	ISSUED FOR APPROVAL
E	2019.12.13	ISSUED FOR DSA
F	2020.03.31	ISSUED FOR TENDER

CLIENT

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REGIONAL DISTRICT OF NANAIMO

HEROLD ENGINEERING

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Email: mail@heroldengineering.com

CROSS SECTIONS STA. 3+110 TO 3+200

DESIGNED EGAP	ENGINEER'S SEAL: PROFESSIONAL ENGINEER, P.G. RYAN, # 34339, PROVINCE OF BRITISH COLUMBIA, 2020-04-16
DESIGN REVIEW PGR	
DRAFTED EGAP	
DRAFTING REVIEW PGR	
PROJECT No. 0837-047	RDN DRAWING No. GN-C-GEN-227
SCALE H: 1:100 V: 1:50	PERMIT No. ENG01365/BP123009
HEL DRAWING No. XS-2	8 OF 10
REVISION F	

DESTROY ALL DRAWINGS SHOWING PREVIOUS REVISION

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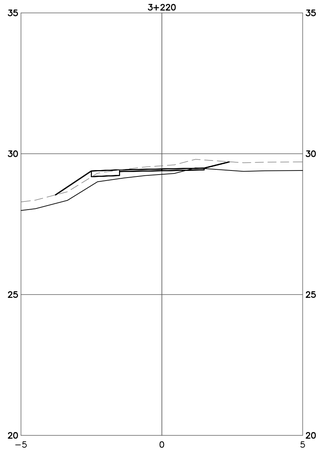

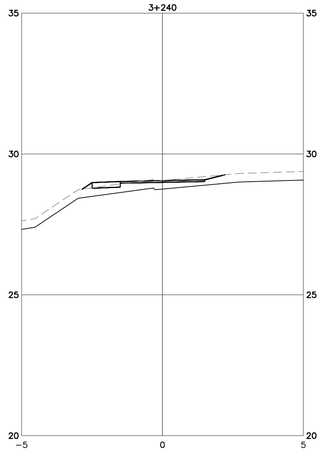

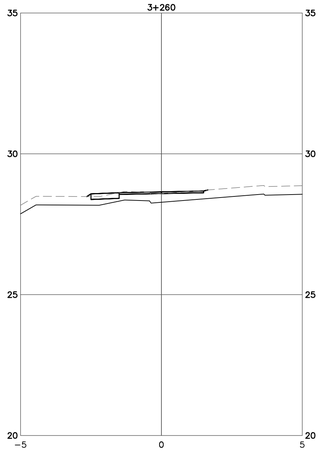

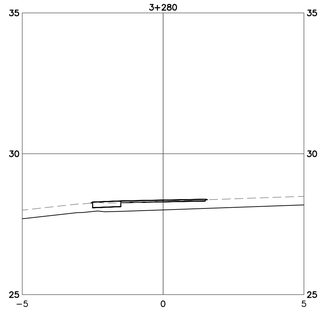

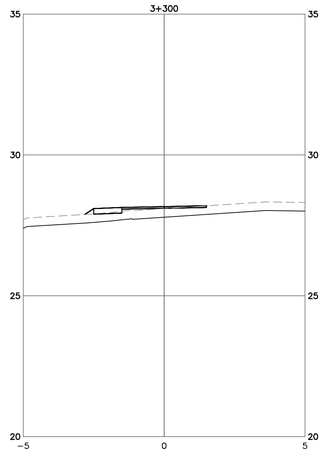

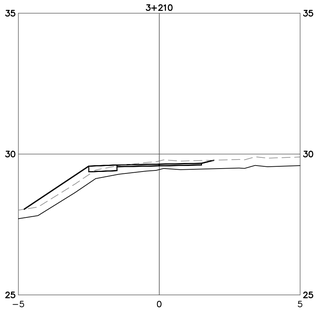

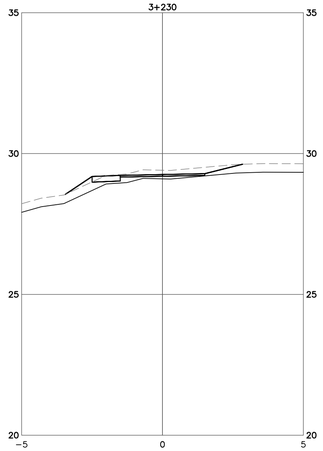

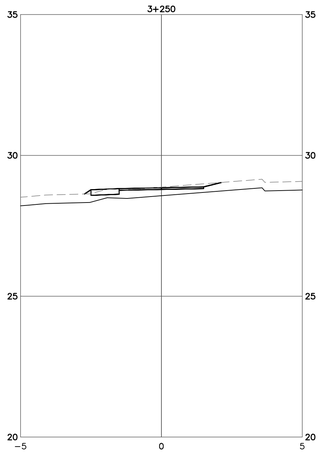

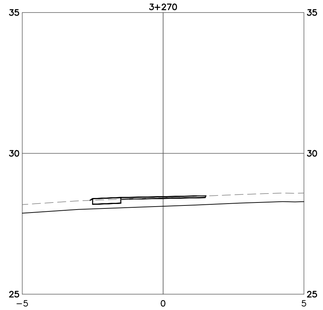

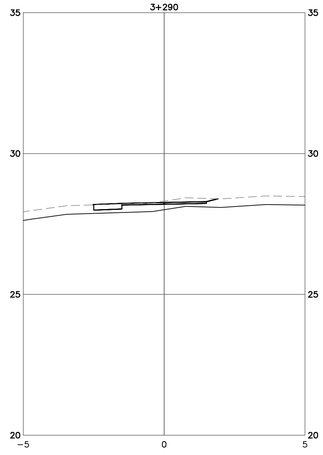

ISSUED FOR TENDER

ISSUES		
No.	DATE YYYY.MM.DD	ISSUED FOR
A	2017.07.28	ISSUED FOR 75% REVIEW
B	2017.08.31	ISSUED FOR 95% REVIEW
C	2017.09.07	BUS PULLOUT ADDED
D	2017.10.24	ISSUED FOR APPROVAL
E	2019.12.13	ISSUED FOR DSA
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CLIENT

GREATER NANAIMO POLLUTION CONTROL CENTRE FRONTAGE WORKS

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REGIONAL DISTRICT OF NANAIMO

HEROLD ENGINEERING
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Tel: 250-751-8558 Fax: 250-751-8559
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CROSS SECTIONS STA. 3+210 TO 3+300

DESIGNED: EGAP	ENGINEER'S SEAL: PROFESSIONAL ENGINEER, P.G. RYAN, # 34339, PROVINCE OF BRITISH COLUMBIA, 2020-04-16
DESIGN REVIEW: PGR	
DRAFTED: EGAP	
DRAFTING REVIEW: PGR	
PROJECT No.: 0837-047	RDN DRAWING No.: GN-C-GEN-228
SCALE: H: 1:100 V: 1:50	PERMIT No.: ENG01365/BP123009
HEL DRAWING No.: XS-3	9 OF 10
REVISION: F	

DESTROY ALL DRAWINGS SHOWING PREVIOUS REVISION

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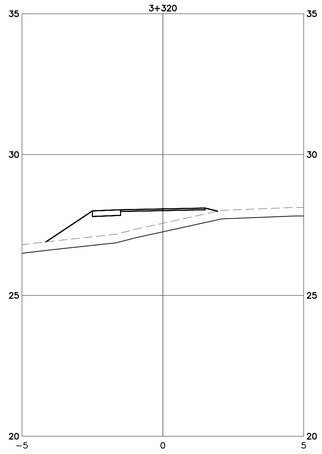
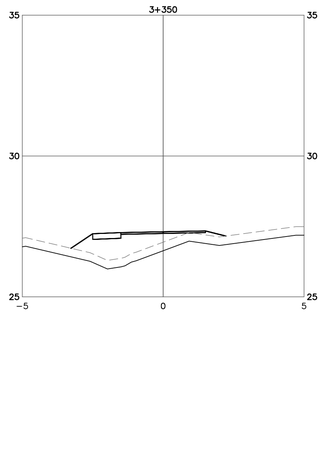
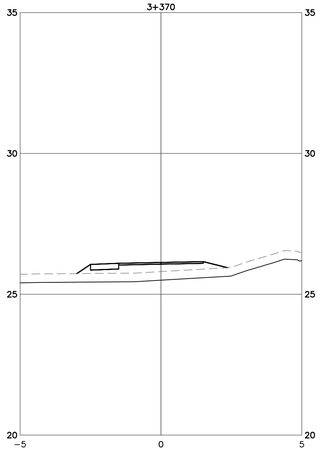
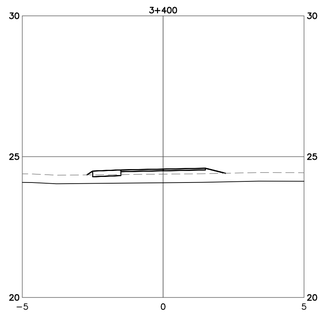
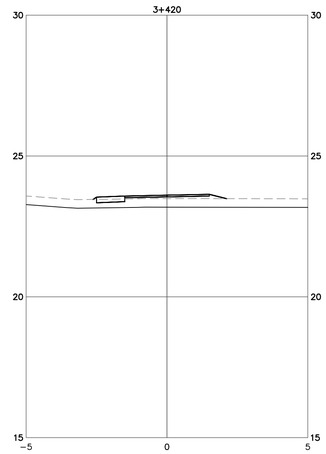
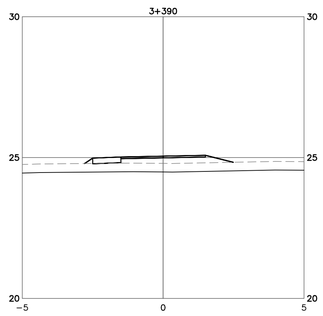


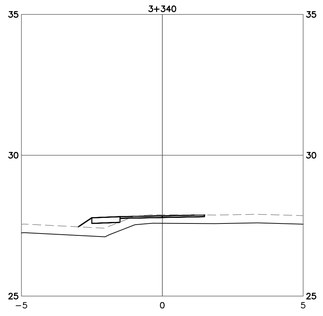


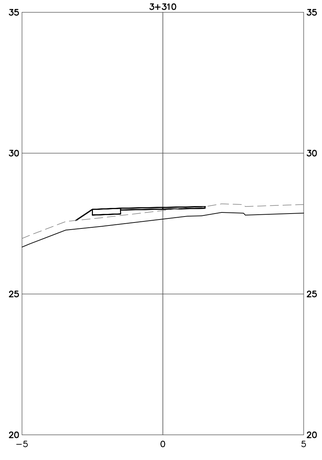


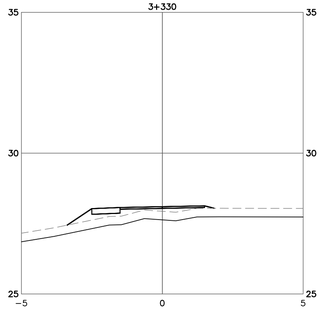


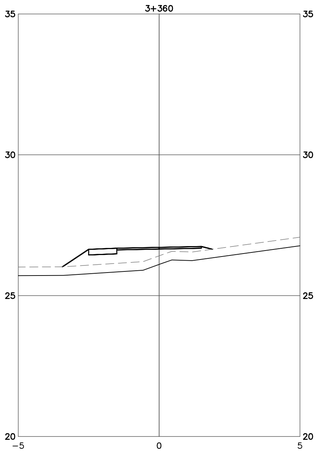


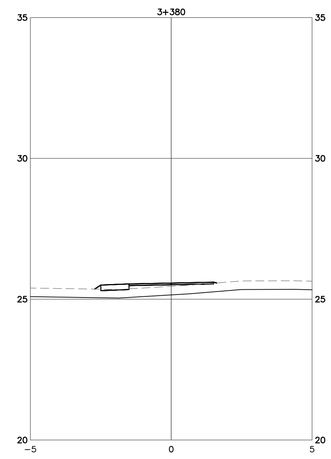


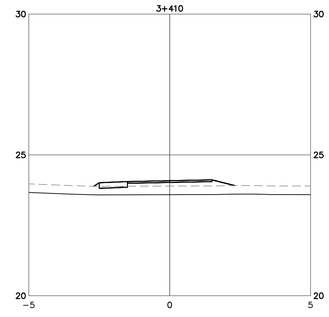












ISSUED FOR TENDER

ISSUES

No.	DATE YYYY.MM.DD	ISSUED FOR
A	2017.07.28	ISSUED FOR 75% REVIEW
B	2017.08.31	ISSUED FOR 95% REVIEW
C	2017.09.07	BUS PULLOUT ADDED
D	2017.10.24	ISSUED FOR APPROVAL
E	2019.12.13	ISSUED FOR DSA
F	2020.03.31	ISSUED FOR TENDER

CLIENT

GREATER NANAIMO POLLUTION CONTROL CENTRE FRONTAGE WORKS

4600 HAMMOND BAY ROAD, NANAIMO, BC

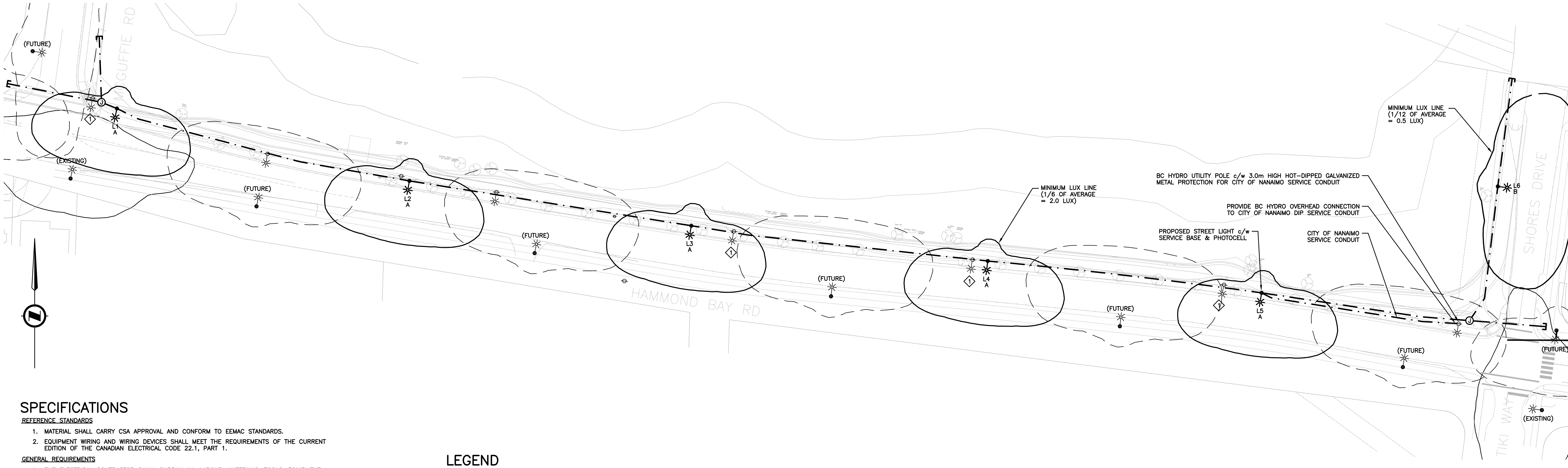
REGIONAL DISTRICT OF NANAIMO

HEROLD ENGINEERING
3701 Shenton Rd, Nanaimo, BC V9T 2H1
Tel: 250-751-8558 Fax: 250-751-8559
Email: mail@heroldengineering.com

CROSS SECTIONS STA. 3+310 TO 3+420

DESIGNED EGAP	ENGINEER'S SEAL
DESIGN REVIEW PGR	
DRAFTED EGAP	
DRAFTING REVIEW PGR	
PROJECT No. 0837-047	RDN DRAWING No. GN-C-GEN-229
SCALE H: 1:100 V: 1:50	PERMIT No. ENG01365/BP123009
HEL DRAWING No. XS-4 10 OF 10	REVISION F

DESTROY ALL DRAWINGS SHOWING PREVIOUS REVISION



KEY NOTES:

1. CONTRACTOR TO COORDINATE WITH THE CITY OF NANAIMO AND BC HYDRO TO REMOVE EXISTING BC HYDRO LEASE LIGHT.

SPECIFICATIONS

REFERENCE STANDARDS

1. MATERIAL SHALL CARRY CSA APPROVAL AND CONFORM TO EEMAC STANDARDS.
2. EQUIPMENT WIRING AND WIRING DEVICES SHALL MEET THE REQUIREMENTS OF THE CURRENT EDITION OF THE CANADIAN ELECTRICAL CODE 22.1, PART 1.

GENERAL REQUIREMENTS

1. THE ELECTRICAL CONTRACTOR SHALL SUPPLY ALL LABOUR, MATERIALS, TOOLS, EQUIPMENT, TRANSPORTATION REQUIRED FOR THE COMPLETE INSTALLATION, WIRING AND TESTING OF THE SYSTEM SHOWN ON THE DRAWINGS AND DESCRIBED HEREIN & IS RESPONSIBLE TO REVIEW CIVIL DRAWINGS FOR DISCREPANCIES AND REPORT TO THE ENGINEER.
2. THE ELECTRICAL DRAWINGS INDICATE THE GENERAL LOCATION AND ROUTE. CONDUIT AND/OR WIRING SHALL BE INSTALLED TO PROVIDE A COMPLETE OPERATING SYSTEM.
3. THE WORK TO BE DONE IS DESCRIBED IN THE DRAWINGS.
4. THE DRAWINGS AND SPECIFICATIONS COMPLEMENT EACH OTHER AND WHAT IS CALLED FOR BY ONE IS BINDING AS IF CALLED FOR BY BOTH. IF THERE IS ANY DOUBT AS TO THE MEANING OR TRUE INTENT DUE TO A DISCREPANCY BETWEEN THE DRAWINGS AND SPECIFICATIONS, OBTAIN RULING FROM ENGINEER PRIOR TO TENDER CLOSING. FAILING THIS, ALLOW FOR THE MOST EXPENSIVE ALTERNATIVE.
5. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW ALL CONDUIT, WIRE, CABLE, ETC., THE ELECTRICAL CONTRACTOR IS TO PROVIDE CONDUIT, WIRE, CABLE, ETC. FOR A COMPLETE OPERATING JOB TO MEET IN ALL RESPECTS THE INTENT OF THE DRAWINGS AND SPECIFICATIONS. ELECTRICAL DRAWINGS DO NOT SHOW ALL CIVIL DETAILS.
6. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO DETERMINE AS TO WHICH SUBCONTRACTOR PROVIDES SPECIFIC LABOUR AND MATERIALS. EXTRAS WILL NOT BE CONSIDERED BASED ON DIFFERENCES IN INTERPRETATION AS TO WHICH TRADE IS TO PROVIDE CERTAIN ITEMS.

PERMITS, CERTIFICATES, AND FEES

1. ON COMPLETION OF THE WORK, SUBMIT CERTIFICATE OF ACCEPTANCE FROM INSPECTION AUTHORITY TO THE ENGINEER.
2. PRIOR TO COMMENCEMENT OF WORK, SUBMIT THE NECESSARY DRAWINGS TO THE ELECTRICAL INSPECTION DEPARTMENT AND THE ELECTRICAL SUPPLY AUTHORITY.
3. PAY ALL ASSOCIATED FEES, AND OBTAIN DOCUMENTS POSTING AS REQUIRED.

STREET LIGHTING

1. ALL STREET LIGHT CONSTRUCTION TO CONFORM TO THE CITY OF NANAIMO STANDARDS AND SPECIFICATIONS FOR STREET LIGHTING DESIGN AND CONSTRUCTION.
2. TYPE 'A' POLES TO BE ROADWAY, 5.8m IN TOTAL HEIGHT, ONE PIECE OCTAGONAL TAPERED, STEEL, 1.8m DAVIT ARM c/w GALVANIZED FINISH.
3. TYPE 'A' LED STREET LIGHT LUMINAIRE TO BE CITY OF NANAIMO 150 WATT HPS, TYPE 3 REPLACEMENT:
   .1 AMERICAN ELECTRIC LIGHTING ATBO-30BLEDE13-MVOLT-R3, OR
   .2 EATON VERDEON VERD-C02-U-T3-AP
4. TYPE 'B' POLES TO BE ROADWAY, 9.14m IN TOTAL HEIGHT, ONE PIECE OCTAGONAL TAPERED, STEEL, 2.4m DAVIT ARM c/w GALVANIZED FINISH.
5. TYPE 'B' LED STREET LIGHT LUMINAIRE TO BE CITY OF NANAIMO 100 WATT HPS, TYPE 3 REPLACEMENT:
   .1 AMERICAN ELECTRIC LIGHTING ATBO-20BLEDE10-MVOLT-R3, OR
   .2 EATON VERDEON VERD-C018-U-T3-AP
6. STREET LIGHTS TO BE COMPLETE WITH NEMA LABEL INDICATING LUMINAIRE WATTAGE AND SHORTING CAP WHERE REQUIRED.
7. STREET LIGHTS TO ALTERNATE BETWEEN THE BLACK AND RED PHASE.
8. STREET LIGHT WIRING TO BE #4 AWG AL RW90 AND #6 AWG AL RW90 BOND, TO BE CONTAINED IN A 41mm (1 1/2") RIGID PVC CONDUIT. LUMINAIRE WIRING TO BE #14 AWG CU RW90 c/w #12 AWG CU RW90 BOND IN STREET LIGHT POLE. GROUND CONDUCTOR TO BE #6 AWG CU RW90.
9. ALL ALUMINUM TERMINATIONS SHALL USE ANTI-OXIDATION COMPOUND AND USE COPPER/ALUMINUM RATED SPLICE HARDWARE FOR ALL CU/AL CONNECTIONS AS PER CANADIAN ELECTRICAL CODE REQUIREMENTS.
10. PROVIDE A 53mm RIGID PVC CONDUIT c/w SERVICE CONDUCTORS TO BC HYDRO AND CITY OF NANAIMO SPECIFICATIONS FROM THE BC HYDRO SERVICE TO THE STREET LIGHT SERVICE BASE.
11. SERVICE BASES TO BE 60 AMP, 120/240 VOLT, SINGLE PHASE. SERVICE BASE TO CONTAIN CONTACTORS AND HOA SWITCH AND BE 915mm IN HEIGHT. SERVICE EQUIPMENT TO BE ENCLOSED IN ONE NEMA 3R, CSA APPROVED COMPREHENSIVE ENCLOSURE MANUFACTURED BY WEST COAST ELECTRIC, VALID MANUFACTURING OR APPROVED EQUAL.
12. STREET LIGHT ON SERVICE BASE TO BE 4.88m IN HEIGHT AND CONTAIN THE PHOTOCELL.
13. STREET LIGHTS TO HAVE A BUSMAN 10 AMP INLINE FUSE.
14. PROVIDE PULL STRINGS IN ALL EMPTY CONDUIT.
15. CONTRACTOR TO ALLOW FOR ONE VISIT TO SITE WITH RB ENGINEERING AFTER CONSTRUCTION IS COMPLETE FOR FINAL INSPECTION. CONTRACTOR TO CALL FOR INSPECTION ONCE SYSTEM INSTALLATION HAS BEEN COMPLETED AND ENERGIZED BY BC HYDRO. ADDITIONAL VISITS MAY BE REQUIRED IF DEFICIENCIES ARE FOUND.
16. CONTRACTOR TO COORDINATE WITH CITY OF NANAIMO AND BC HYDRO FOR SERVICE CONNECTION FOR THE STREET LIGHTS.
17. PRIOR TO INSTALLATION OF STREET LIGHTS CONTRACTOR IS TO SUBMIT AT COST AUTHORIZATION FORM TO THE CITY OF NANAIMO TO COORDINATE THE INSTALLATION OF LOCKING HAND HOLE COVERS. CONTRACTOR TO ADVISE MUNICIPAL INSPECTOR 72 HOURS PRIOR TO INSTALLATION OF STREET LIGHT CONDUCTORS TO ALLOW THE CITY OF NANAIMO TO COORDINATE INSTALLATION OF LOCKING HAND HOLE COVERS.
18. IF OVERHEAD UTILITIES ARE PRESENT CONTRACTOR SHALL ENSURE THAT REQUIRED CLEARANCES ARE MET. ONCE LIGHT POLE BASES HAVE BEEN INSTALLED AND BEFORE INSTALLING STREET LIGHT POLES CONTRACTOR SHALL COORDINATE WITH CIVIL ENGINEER TO SURVEY REQUIRED BC HYDRO CLEARANCES (1 METRE FROM SECONDARY WIRING, 3 METRES FROM PRIMARY WIRING) AND REPORT CONFLICTS TO THE ENGINEER.

LEGEND

A	5.8m STREET LIGHT – 90W LED COBRA-HEAD
B	9.14m STREET LIGHT – 50W LED COBRA-HEAD
(FUTURE)	9.14m FUTURE STREET LIGHT (NOT IN CONTRACT)
(EXISTING)	9.14m EXISTING STREET LIGHT
	EXISTING BC HYDRO LEASE LIGHT
	BURIED STREET LIGHT CONDUIT
	EXISTING STREET LIGHT CONDUIT
	STREET LIGHT CONDUIT STUB
J	STREET LIGHTING JUNCTION BOX

HAMMOND BAY ROAD

DESIGN CRITERIA

.1	ROAD CLASSIFICATION	MAJOR COLLECTOR
.2	AVERAGE ILLUMINATION	12 LUX
.3	UNIFORMITY RATIO	3:1
.4	POLE HEIGHT	5.8m & 9.14m
.5	DAVIT ARM	1.8m & 2.4m
.6	LIGHT DISTRIBUTION	TYPE 3
.7	LUMINAIRE	EATON VERDEON LED
.8	LAMP	90W LED
.9	MAINTENANCE FACTOR	0.79

DESIGN CALC

.1	AVERAGE ILLUMINATION	14.671
.2	MIN. ILLUMINATION	4.8 LUX
.3	UNIFORMITY RATIO	3.0:1

WALKWAY

DESIGN CRITERIA

.1	ROAD CLASSIFICATION	WALKWAY
.2	AVERAGE ILLUMINATION	4 LUX
.3	UNIFORMITY RATIO	6:1
.4	POLE HEIGHT	5.8m & 9.14m
.5	DAVIT ARM	1.8m & 2.4m
.6	LIGHT DISTRIBUTION	TYPE 3
.7	LUMINAIRE	EATON VERDEON LED
.8	LAMP	90W LED
.9	MAINTENANCE FACTOR	0.79

DESIGN CALC

.1	AVERAGE ILLUMINATION	5.94 LUX
.2	MIN. ILLUMINATION	1.4 LUX
.3	UNIFORMITY RATIO	4.24:1

SHORES DRIVE

DESIGN CRITERIA

.1	ROAD CLASSIFICATION	URBAN LOCAL
.2	AVERAGE ILLUMINATION	6 LUX
.3	UNIFORMITY RATIO	6:1
.4	POLE HEIGHT	9.14m
.5	DAVIT ARM	2.4m
.6	LIGHT DISTRIBUTION	TYPE 3
.7	LUMINAIRE	EATON VERDEON LED
.8	LAMP	55W LED
.9	MAINTENANCE FACTOR	0.79

DESIGN CALC

.1	AVERAGE ILLUMINATION	7.5 LUX
.2	MIN. ILLUMINATION	1.3 LUX
.3	UNIFORMITY RATIO	5.77:1

INTERSECTION OF HAMMOND BAY RD. & MCGUFFIE RD.

DESIGN CRITERIA

.1	ROAD CLASSIFICATION	MAJOR COLLECTOR & NEIGHBOURHOOD COLLECTOR
.2	AVERAGE ILLUMINATION	21 LUX
.3	UNIFORMITY RATIO	3:1
.4	POLE HEIGHT	5.8m & 9.14m
.5	DAVIT ARM	1.8m & 2.4m
.6	LIGHT DISTRIBUTION	TYPE 2 & 3
.7	LUMINAIRE	EATON VERDEON LED
.8	LAMP	90W LED
.9	MAINTENANCE FACTOR	0.79

DESIGN CALC

.1	AVERAGE ILLUMINATION	21.02 LUX
.2	MIN. ILLUMINATION	12.6 LUX
.3	UNIFORMITY RATIO	1.67:1

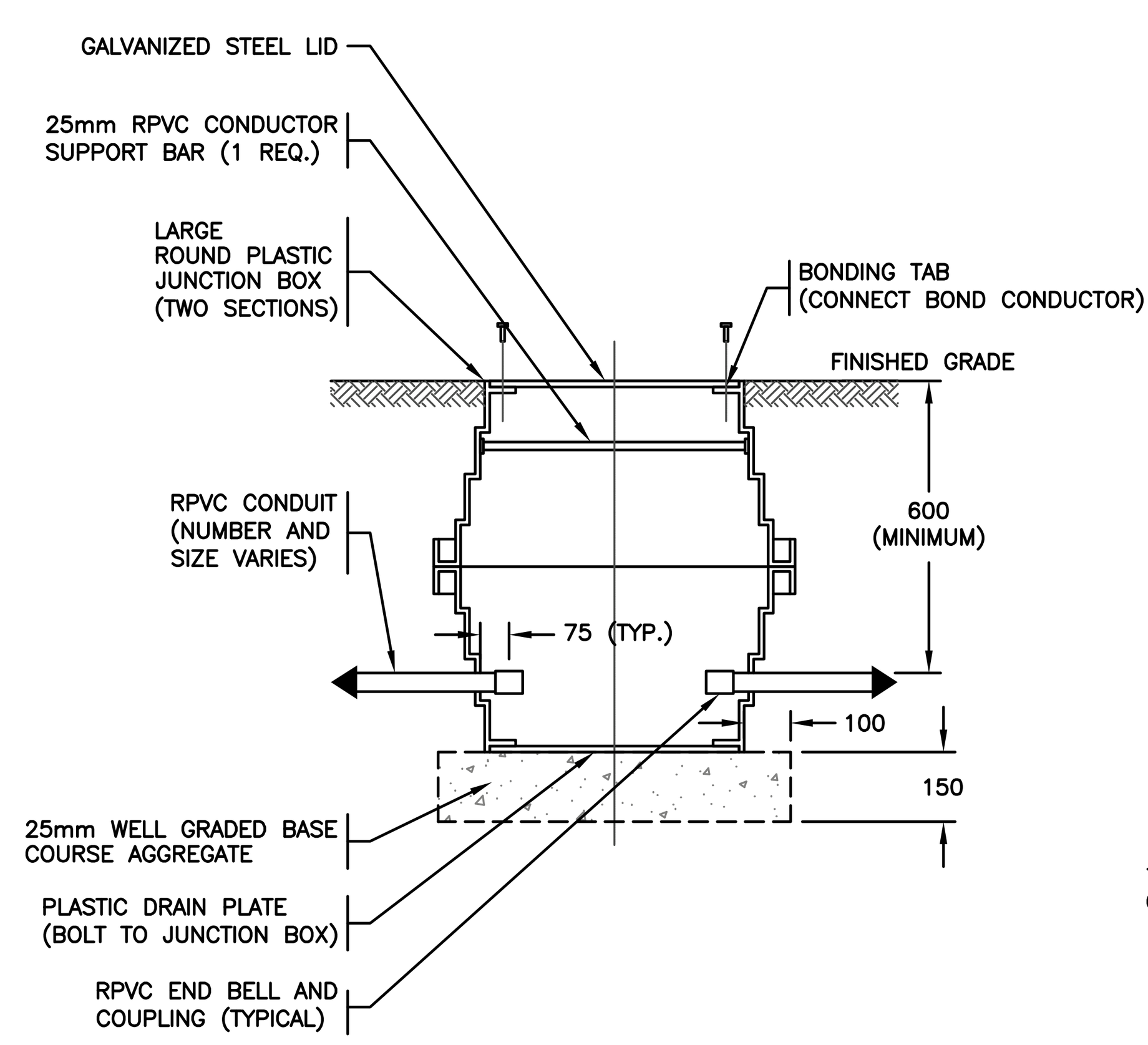
INTERSECTION OF HAMMOND BAY RD. & TIKI WAY/SHORES DR.

DESIGN CRITERIA

.1	ROAD CLASSIFICATION	MAJOR COLLECTOR & NEIGHBOURHOOD COLLECTOR
.2	AVERAGE ILLUMINATION	21 LUX
.3	UNIFORMITY RATIO	3:1
.4	POLE HEIGHT	5.8m & 9.14m
.5	DAVIT ARM	1.8m & 2.4m
.6	LIGHT DISTRIBUTION	TYPE 3
.7	LUMINAIRE	EATON VERDEON LED
.8	LAMP	90W LED
.9	MAINTENANCE FACTOR	0.79

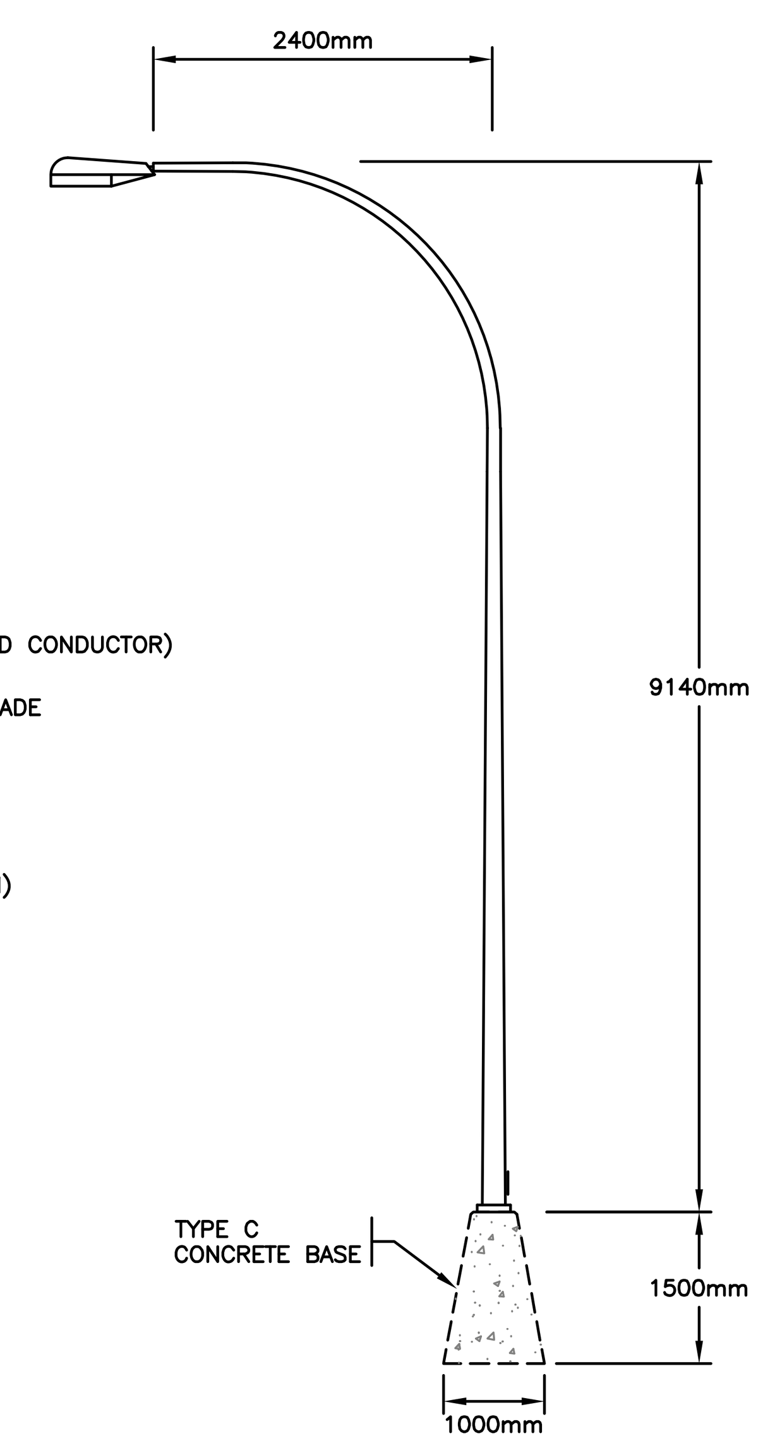
DESIGN CALC

.1	AVERAGE ILLUMINATION	21.5 LUX
.2	MIN. ILLUMINATION	6.9 LUX
.3	UNIFORMITY RATIO	3.1:1



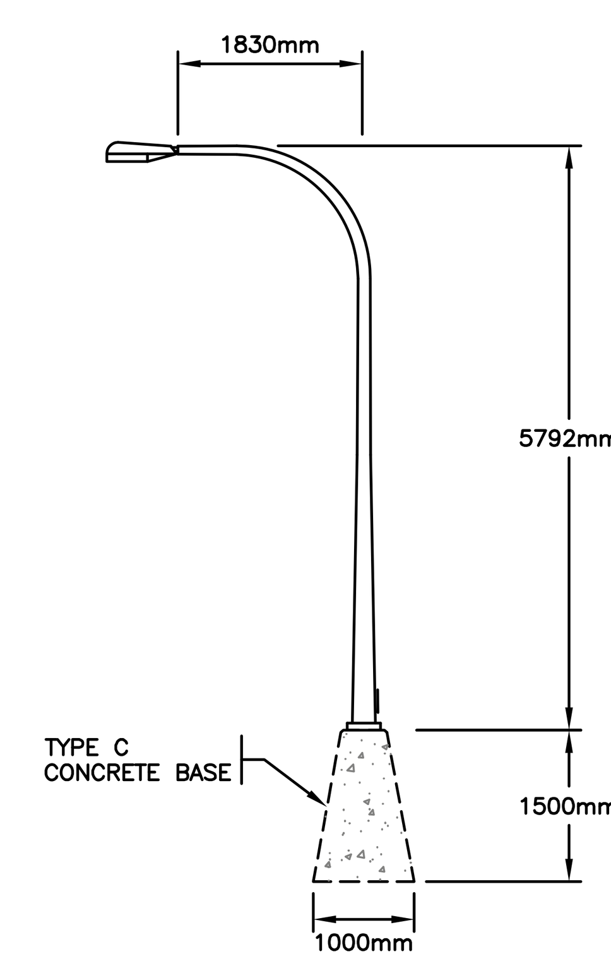
TYPICAL JUNCTION BOX DETAIL

SCALE: N.T.S.



TYPE 'B' STREET LIGHT POLE

SCALE: N.T.S.



TYPE 'A' STREET LIGHT POLE

SCALE: N.T.S.

0 10m 50m

NO.	DATE	COMMENT
5	DEC 13 2019	ISSUED FOR DSA
4	JULY 04 2018	ISSUED FOR REVIEW
3	OCT 24 2017	ISSUED FOR REVIEW
2	OCT 05 2017	ISSUED FOR REVIEW
1	JULY 28 2017	ISSUED FOR 75% REVIEW

REVISION

RB ENGINEERING LTD
ELECTRICAL CONSULTING ENGINEERS
#4 1850 NORTHFIELD ROAD
NANAIMO, BC, V9S 3B3
TEL 250-756-4444
RBENGINEERING.CA

CLIENT

PROJECT

GREATER NANAIMO POLLUTION CONTROL CENTRE

TITLE

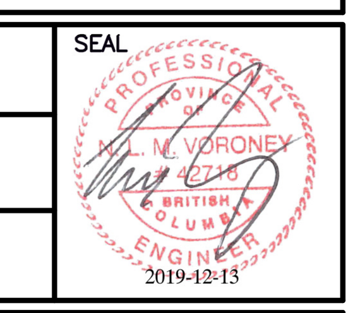
STREET LIGHTING LAYOUT

PROJECT NO. 17-2584

DATE JULY, 2017

SCALE 1:500

SEAL



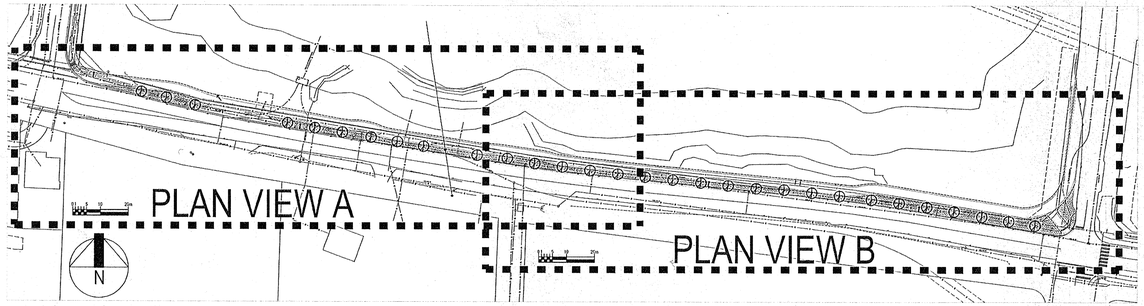
DRAWING NO.

E-1

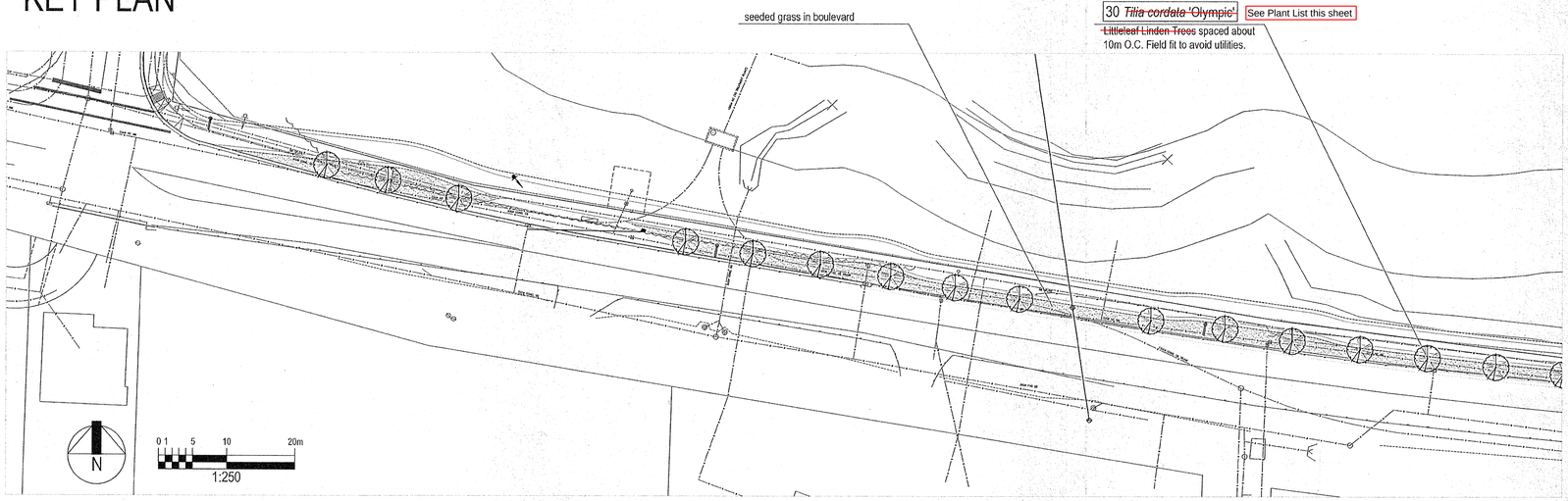
CITY OF NANAIMO FILE No. ENG01365/BP123005

CITY OF NANAIMO DRAWING No.

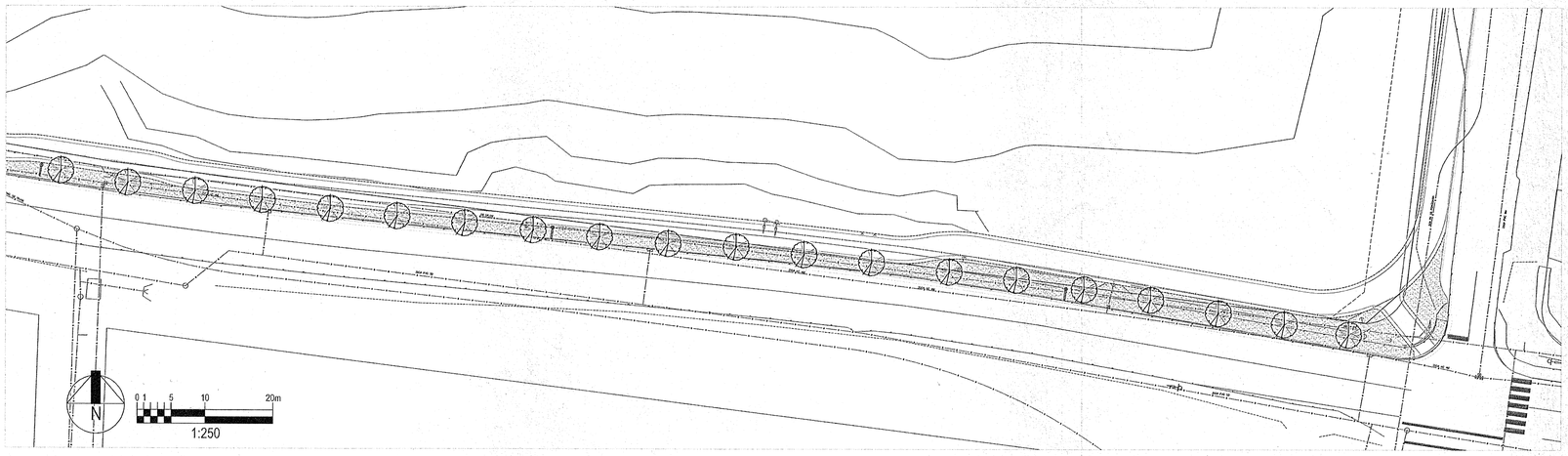
RDN DWG. No. GN-E-GEN-221



KEY PLAN



PLAN VIEW A



PLAN VIEW B

30 ~~*Tilia cordata* 'Olympic'~~ See Plant List this sheet
~~Littleleaf Linden Trees~~ spaced about 10m O.C. Field fit to avoid utilities.

PLANT LIST

TREES

QTY.	BOTANICAL NAME	COMMON NAME	STOCK SIZE
30	Acer Truncatum 'Ruby Sunset'	Ruby Sunset Purplebow Maple	6cm CAL.

REFER TO CITY OF NANAIMO ENGINEERING STANDARD & SPECIFICATION TREE PLANTING IN GRASS BOULEVARD OR MEDIAN **DWG NO. P-2**

GRASS / LAWN

QTY.	NAME	NOTES
800 SQ.M.	PREMIER PACIFIC SEED **EnviroGreen** LAWN MIX (MIXTURE OF FESCUES AND MICRO CLOVER)	DROUGHT TOLERANT SEED AT SUPPLIERS RECOMMENDED RATE

HYDRO-SEED GRASS ACCORDING TO CITY OF NANAIMO ENGINEERING STANDARD & SPECIFICATION.

GENERAL LANDSCAPE NOTES

.1 DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL OTHER CONTRACT DOCUMENTS, INCLUDING DRAWINGS, SPECIFICATIONS AND REPORTS OF OTHER DISCIPLINES.
.2 ALL BASE INFORMATION AND EXISTING SURVEY INFORMATION PROVIDED BY HEROLD ENGINEERING.
.3 ALL UNDERGROUND INFORMATION, IF SHOWN, DERIVED FROM EXISTING RECORDS PROVIDED BY OTHERS. THIS PLAN DOES NOT CLAIM TO VERIFY THIS INFORMATION.

PLANT MATERIAL

.4 TRANSPORTATION AND STORAGE OF PLANTS TO MEET THE BC LANDSCAPE STANDARD.
.5 THERE SHALL BE NO SUBSTITUTIONS OF PLANTS WITHOUT THE CONSULTANT'S WRITTEN APPROVAL.
.6 THE CONTRACTOR SHALL BE RESPONSIBLE FOR REQUESTING CONSULTANT REVIEW OF THE PLANT MATERIAL PRIOR TO PLANTING. PLANT STOCK SHALL MEET THE CANADIAN STANDARD FOR NURSERY STOCK AND APPROVED BY THE CONSULTANT PRIOR TO PLANTING. PLANT INSPECTION AT THE NURSERY IS RECOMMENDED.

GROWING MEDIUM AND SUBGRADE PREPARATION

.7 GROWING MEDIUM IS THE MIXTURE OF SCREENED TOP SOIL AND THOSE ADMIXTURES SPECIFIED BY AN AGRONOMIC SOILS LAB TO ACHIEVE THE PROPERTIES OUTLINED IN THE CURRENT EDITION OF THE BCSLA/BCNTA LANDSCAPE STANDARD LEVEL 3 - MODERATE.
.8 THE CONTRACTOR SHALL SUBMIT SOIL SAMPLE AGRONOMIC LAB RESULTS TO THE LANDSCAPE ARCHITECT FOR APPROVAL IN ACCORDANCE WITH CONTRACT DOCUMENTS PRIOR TO PURCHASE OF SOIL (GROWING MEDIUM).
.9 LANDSCAPE PLANTING SHALL BE IN ACCORDANCE WITH CURRENT EDITION OF THE BCSLA/BCNTA LANDSCAPE STANDARD
.10 SUBGRADE TO BE APPROVED BY LANDSCAPE CONSULTANT PRIOR TO IMPORTING GROWING MEDIUM TO SITE. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING SUBGRADE PREPARATION FOR ADEQUATE FOR GROWING MEDIUM DEPTHS. MOUNDING GROWING MEDIUM ON TOP OF COMPACTED SUBGRADES WILL NOT BE ACCEPTED. SUBGRADE TO BE SCARIFIED FOR DRAINAGE.
.11 150MM DEPTH GROWING MEDIUM FOR LAWN OR GRASS AREAS.
.12 MULCH SHALL BE DOUGLAS FIR AND-OR HEMLOCK COMPOSTED BARK OR APPROVE EQUAL.

WATERING

.13 SLOW RELEASE WATERING BAGS ARE TO BE INSTALL ON EACH NEW TREE. INSTALLATION TO SUPPLIER / MANUFACTURER RECOMMENDATIONS.

GREATER NANAIMO POLLUTION CONTROL CENTRE

LANDSCAPE
PLANTING

PROJECT ADDRESS:
4600 Hammond Bay Rd,
Nanaimo, BC V9T 5A8

Seal

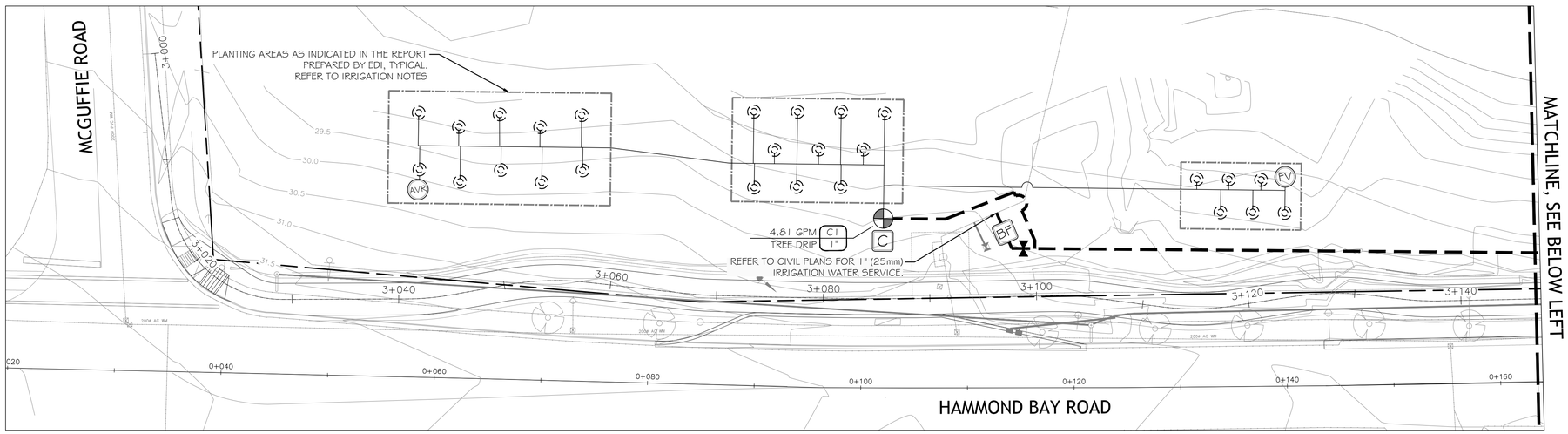
BRITISH COLUMBIA SOCIETY OF LANDSCAPE ARCHITECTS
REGISTERED MEMBER
Jessica Gemella
286

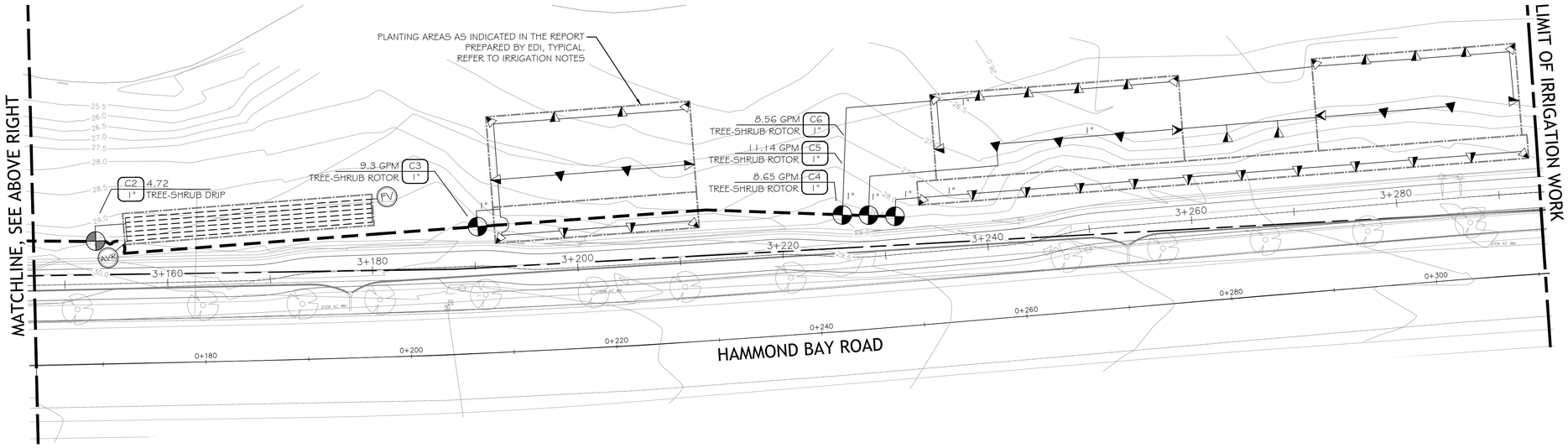
Issues & Revisions

No.	Date	Details
#	DM/YEAR	
1	10 19 2017	100% SUBMISSION

LANDSCAPE ARCHITECTURE
GREEN DESIGN + PLANNING
Tel: 250.591.1976
www.gemelladesign.com
Jessica@shaw.biz.ca

Project: GNP17 ENG01365/BP123009
Date: OCT. 2017
Drawn: JG Checked: JG
Scale: NOTED
sheet: L1 OF 1
RDN DWG. No. GN-L-GEN-221





IRRIGATION EQUIPMENT LEGEND

SYMBOL	MANUFACTURER	MODEL	DESCRIPTION
	HUNTER	ICV-101G	1" (25mm) ELECTRIC REMOTE CONTROL VALVE TO BE INSTALLED IN A MOULDED STRUCTURAL FOAM VALVE BOX WITH BOLT DOWN COVER PER DETAIL E/I-2 AND MANUFACTURER'S RECOMMENDATIONS.
	HUNTER	ICZ-101-40	1" (25mm) DRIP ZONE CONTROL KIT WITH ELECTRIC REMOTE CONTROL VALVE, WYE FILTER AND PRESSURE REGULATOR TO BE INSTALLED IN A MOULDED STRUCTURAL FOAM VALVE BOX IWTH BOLT DOWN COVER, REFER TO DETAIL D/I-2. SIZE PER PLAN.
	NIBCO	T113	LINE-SIZE BRONZE GATE VALVE IN VALVE BOX WITH WITH BOLT DOWN COVER, REFER TO DETAIL B/I-2
BF	HUNTER	007	1" (25mm) DOUBLE CHECK VALVE BACKFLOW PREVENTER TO INSTALLED DOWNSTREAM OF WATER CHAMBER PER MANUFACTURER'S RECOMMENDATIONS AND PER DETAIL A/I-2.
C	HUNTER	NODE-600	6-STATION BATTERY OPERATED IRRIGATION CONTROLLER MOUNTED IN ZONE C1 VALVE BOX PER MANUFACTURER'S RECOMMENDATIONS.
AVR	NDS	AVRV 50	AIR VACUUM RELEASE VALVE, INSTALL PER DETAIL J/I-2
FV	HUNTER	PLD BV	FLUSH VALVE, INSTALL PER DETAIL K/I-2
		CLASS 200	PVC LATERAL LINE, 3/4" (19mm) UNLESS NOTED OTHERWISE AT THE BEGINNING AND END OF EACH LENGTH OF PIPE, REFER TO DETAIL C/I-2
		SCHEDULE 40	1" (25mm) PVC MAINLINE, REFER TO DETAIL C/I-2

C1 — VALVE NUMBER AND CONTROLLER DESIGNATION
10.0 GPM — GALLONS PER MINUTE
2" LAWN SPRAY — ZONE DESCRIPTION
2" — VALVE SIZE

IRRIGATION SPRINKLER LEGEND - REFER TO DETAIL F/I-2

SYMBOL	MFR	MODEL	PATTERN	RADIUS ft / m	FLOW RATE @ 40 PSI / 2.76bar GPM (l/m)
	HUNTER	PROS-12-PRS40-CV-MP2000-90	90° - 210°	13-20 / 4-6	0.43-0.86 (1.6-3.3)
	HUNTER	PROS-12-PRS40-CV-MP2000-210	210° - 270°	13-20 / 4-6	0.86-1.10 (3.3-4.2)
	HUNTER	PROS-12-PRS40-CV-MP2000-360	360°	13-20 / 4-6	1.48 (5.6)

IRRIGATION DRIPLINE LEGEND - REFER TO DETAILS G - K/I-2

SYMBOL	MAKE	MODEL	MAX. LENGTH OF RUN ft / m	LINE SPACING ft / m	EMITTER SPACING ft / m	FLOW RATE @ 40 PSI / 2.75 bar GPH (l/h)
	NDS	SFCV-BR-1712	460 / 140	0.45	1.0 / 0.3	0.6 (2.27)

IRRIGATION NOTES

1. REFER TO TREE REPLACEMENT AND RIPARIAN ENHANCEMENT FOR GNPCC FRONTAGE WORKS REPORT PREPARED BY ENVIRONMENTAL DYNAMICS INC. (EDI) DATED MARCH 20, 2020 FOR ALL RIPARIAN AREA TREE AND VEGETATION REMOVAL AND REPLACEMENT SPECIFICATIONS AND PROCEDURES.
2. IRRIGATION SYSTEM INSTALLATION AND MAINTENANCE SHALL MEET OR EXCEED THE THE REQUIREMENTS SET OUT IN SECTION 5 - IRRIGATION SYSTEMS OF THE CANADIAN NURSERY LANDSCAPE ASSOCIATION (CNLA)/ CANADIAN SOCIETY OF LANDSCAPE ARCHITECTS (CSLA) CANADIAN LANDSCAPE STANDARD AND THE IRRIGATION DETAILS.
3. THE IRRIGATION SYSTEM IS DESIGNED TO OPERATE WITH A MINIMUM STATIC PRESSURE OF 110 PSI. THE MAXIMUM FLOW DEMAND FOR THE SYSTEM IS 12 GPM.
4. THE IRRIGATION PLAN IS DIAGRAMMATIC. NO IRRIGATION MAINLINE OR LATERAL LINE SHALL BE INSTALLED BEYOND ANY KNOWN LIMIT OF WORK, PROPERTY LINE OR ROAD RIGHT-OF-WAY. ALL EQUIPMENT AND PIPING SHALL BE INSTALLED WITHIN PLANTING AREAS.
5. THE CONTRACTOR SHALL ADJUST THE PLACEMENT AND RADIUS OF SPRINKLERS AS REQUIRED BY FIELD CONDITIONS TO ACHIEVE FULL COVERAGE OF ALL PLANTED AREAS AND TO MINIMIZE OVER-SPRAY ONTO ADJACENT HARD SURFACES, FENCES AND PROPERTY LINES.
6. OPERATE IRRIGATION CONTROLLERS WITHIN THE CITY OF NANAIMO WATER RESTRICTION SCHEDULE.
7. THE CONTRACTOR SHALL PROVIDE, INSTALL AND PROGRAM THE BATTERY OPERATED CONTROLLER AND ALL CONTROL WIRE.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ALL EXISTING SPRINKLER EQUIPMENT OR PROPERTY TO REMAIN DAMAGED BY CONSTRUCTION OPERATIONS.
9. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES TO ENSURE PROGRESS OF WORK IS NOT INTERRUPTED AND CAN BE COMPLETED IN A TIMELY MANNER.
10. INSTALL SPRINKLER HEADS PERPENDICULAR TO SLOPES OR GRADE.
11. ALL EQUIPMENT MAKES AND MODELS SHALL BE PER THE IRRIGATION LEGEND OR APPROVED EQUAL. CONTACT THE LANDSCAPE ARCHITECT IN WRITING PRIOR TO PURCHASE FOR SUBSTITUTIONS.
12. THE LANDSCAPE ARCHITECT CANNOT PROVIDE ASSURANCES FOR WORK WITHOUT THE FOLLOWING FIELD REVIEW ATTENDANCE:
    A. REVIEW OF UNCOVERED PRESSURIZED IRRIGATION MAINLINE AND LATERALS.
    B. REVIEW OF COMPLETE IRRIGATION INSTALLATION AND COVERAGE.

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Greater Nanaimo Pollution Control Centre Frontage Works

Regional District of Nanaimo

Nanaimo, BC

IRRIGATION PLAN

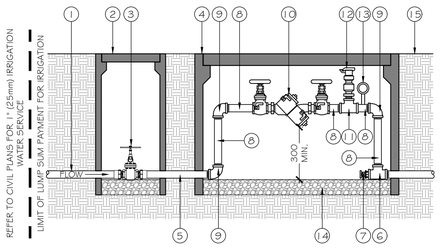
Date: March 26, 2020
Drawn: CM
Checked: NG
Scale: 1:250 metric
Project Number: 20-0260

DRAWING NUMBER: I-1 of 2

RDN DWG. No. GN-L-GEN-222

REVISION SCHEDULE

#	Date	NOTES
0	26MAR2020	Issued for Tender

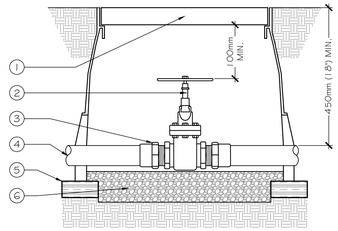


1. PIPE FROM POINT OF CONNECTION OFF EXISTING WATER MAIN
2. 14" X 19" (355mm X 480mm) LOCKING VALVE BOX
3. LINE-SIZED BRONZE GATE VALVE
4. 17" X 30" X 18" (430mm X 760mm X 450mm) LOCKING VALVE BOX
5. BRASS NIPPLE, (30cm) 12" LENGTH
6. BRASS TEE
7. BRASS REDUCING BUSHING, WITH 19mm HOSE BIB
8. BRASS NIPPLES, TYP. LENGTH AS REQUIRED
9. BRASS 90° ELL, TYP.
10. DOUBLE CHECK BACKFLOW PREVENTER. SEE IRRIGATION LEGEND FOR MAKE AND MODEL. FOLLOW MANUFACTURER'S INSTALLATION RECOMMENDATIONS
11. BRASS TEE
12. 1" (25mm) QUICK COUPLING VALVE WITH COVER, BRASS REDUCING BUSHING AND NIPPLE USED FOR MAIN BLOWOUT
13. LIQUID FILLED PRESSURE GAUGE
14. 19mm (3/4") MINUS DRAIN ROCK, 100mm DEPTH MIN.
15. FINISHED GRADE

NOTES:
1. ENSURE ALL DIMENSIONS AND CLEARANCES COMPLY WITH MANUFACTURER'S INSTALLATION RECOMMENDATIONS.
2. INSTALLATION MUST BE APPROVED BY LOCAL PLUMBING INSPECTOR.
3. ALL MATERIALS TO BE IN ACCORDANCE WITH CURRENT BC PLUMBING CODES.
4. UTILITY BOX SHOWN FOR BACKFLOW PREVENTER IS DIAGRAMMATIC.
5. PROVISIONS FOR FREEZING WINTER CONDITIONS ARE NOT SHOWN. WHERE CLIMATE REQUIRES THEY SHALL BE ADDED TO MEET THE REQUIREMETNS OF THE CITY ENGINEER.

A Backflow Preventer

Section — Not to Scale

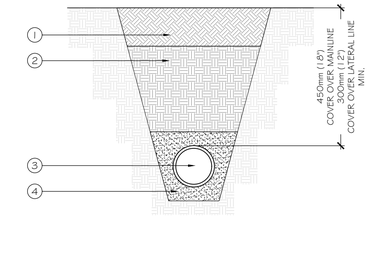


1. VALVE BOX WITH BOLT DOWN COVER
2. LINE-SIZED GATE VALVE, REFER TO IRRIGATION LEGEND
3. SCH. 40 PVC MALE ADAPTOR TYP. OF (2) PLACES
4. PVC MAINLINE PIPE, REFER TO IRRIGATION PLAN
5. BRICK, (4) PLACES
6. 4" (100mm) MIN. DEPTH OF 3/4" (19mm) MINUS WASHED GRAVEL

NOTES:
1. USE TEFLON TAPE ON ALL THREADED FITTINGS
2. REFER TO IRRIGATION PLANS AND LEGEND FOR ADDITIONAL INFORMATION.

B Gate Valve

Section — Not to Scale

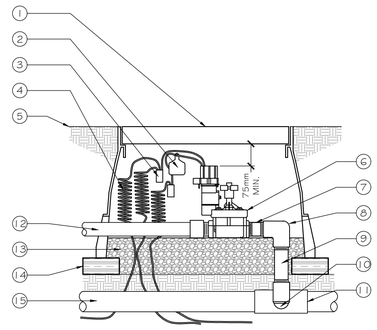


1. SURFACE MATERIAL TO MATCH ADJACENT LANDSCAPE AREAS
2. COMPACTED BACKFILL TO MATCH ADJACENT BACKFILL BELOW REQUIRED DEPTH OF GROWING MEDIUM IN LANDSCAPE AREAS
3. PVC PIPE, REFER TO IRRIGATION PLAN
4. COMPACTED BEDDING MATERIAL HAND-PLACED 50mm (2") MIN. ON ALL SIDES OF PIPE. BEDDING MATERIAL TO BE FREE OF ROCKS, OTHER DELETERIOUS MATERIAL

NOTES:
1. PARALLEL PIPES TO BE MIN. 50mm HORIZONTAL DISTANCE APART.
2. IRRIGATION PIPING TO BE SEPARATED A MIN. OF 300mm FROM ELECTRICAL & OTHER UTILITIES.

C Trenching

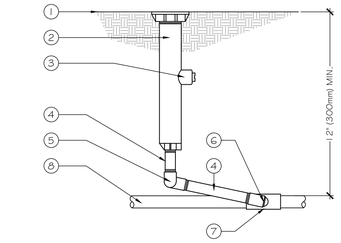
Section — Not to Scale



1. VALVE BOX WITH BOLT DOWN COVER
2. ID TAG
3. WATER PROOF CONNECTION, TYP. OF (2) PLACES
4. 30" (0.75m) LINEAR LENGTH OF WIRE, COILED
5. FINISH GRADE / TOP OF MULCH
6. REMOTE CONTROL VALVE, SIZE AS INDICATED ON PLAN. REFER TO IRRIGATION LEGEND.
7. PVC SCH. 80 NIPPLE (CLOSE)
8. PVC SCH. 40 ELL
9. PVC SCH. 80 NIPPLE, LENGTH AS REQUIRED
10. PVC SCH. 80 NIPPLE (2" [50mm] LENGTH, HIDDEN) AND SCH. 40 ELL
11. PVC SCH. 40 TEE OR ELL
12. PVC LATERAL PIPE
13. 4" (100mm) MIN. DEPTH OF 3/4" (19mm) MINUS WASHED GRAVEL
14. BRICK, TYP. OF (4) PLACES
15. PVC MAINLINE PIPE, REFER TO IRRIGATION PLAN

E Electric Remote Control Valve

Section — Not to Scale

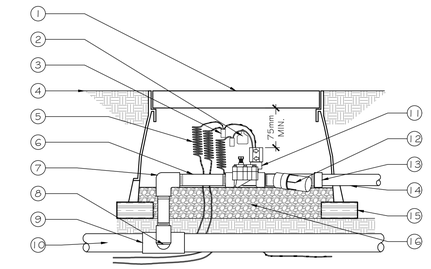


1. TOP OF MULCH IN PLANTING AREAS
2. POP-UP SPRAY SPRINKLER
3. DO NOT USE SIDE INLET
4. PVC SCH. 80 NIPPLE, LENGTH AS REQUIRED
5. PVC SCH. 40 ELL AND PVC SCH. 40 STREET ELL
6. PVC SCH. 40 STREET ELL
7. PVC SCH. 40 TEE OR ELL
8. PVC LATERAL PIPE, REFER TO IRRIGATION PLAN

NOTES:
1. REFER TO IRRIGATION PLAN, LEGEND AND NOTES FOR ADDITIONAL INFORMATION.

F Pop-up Spray Head

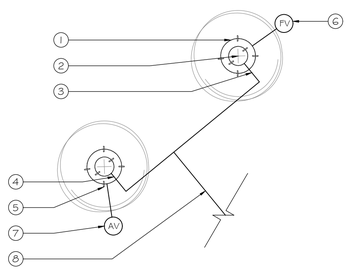
Section — Not to Scale



1. VALVE BOX WITH COVER
2. I.D. TAG
3. WATERPROOF CONNECTION
4. FINISHED GRADE
5. 30" (760mm) LINEAR LENGTH OF WIRE, COILED
6. PVC SCH. 80 NIPPLE, LENGTH AS REQUIRED
7. PVC SCH. 40 ELL
8. PVC SCH. 80 NIPPLE: 2" (50mm) LENGTH, HIDDEN AND PVC SCH. 40 ELL.
9. PVC SCH. 40 TEE OR ELL
10. PVC MAINLINE, REFER TO IRRIGATION PLAN
11. DRIP CONTROL ZONE KIT, REFER TO IRRIGATION LEGEND
12. PRESSURE REGULATING FILTER, REFER TO IRRIGATION LEGEND
13. PVC SCH. 40 FEMALE ADAPTER
14. LATERAL PIPE, REFER TO IRRIGATION PLAN
15. BRICK, TYP. OF (4) PLACES
16. 4" (100mm) MIN. DEPTH OF 3/4" (19mm) WASHED GRAVEL

D Electric Remote Control Valve - Drip

Section — Not to Scale

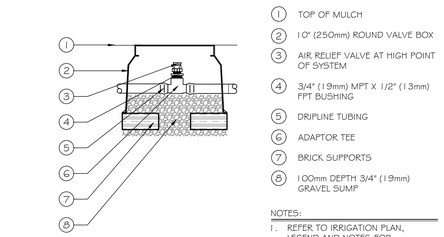


1. DRIPLINE TUBING: INSIDE RING 0.6m DIA. OUTSIDE RING 1.2m DIA
2. TREE STEM
3. START CONNECTION (LATERAL TO DRIPLINE), REFER TO DETAIL I/12
4. DRIPLINE TEE
5. TUBING STAKE AS REQUIRED TO TIE DOWN DRIPLINE
6. FLUSH VALVE, REFER TO IRRIGATION PLAN AND DETAIL K/12
7. AIR RELIEF VALVE, REFER TO IRRIGATION PLAN AND DETAIL J/12
8. LATERAL LINE, REFER TO IRRIGATION PLAN

NOTES:
1. REFER TO IRRIGATION AND PLAN AND LEGEND FOR ADDITIONAL INFORMATION.

H Dripline at Tree Locations

Plan — Not to Scale

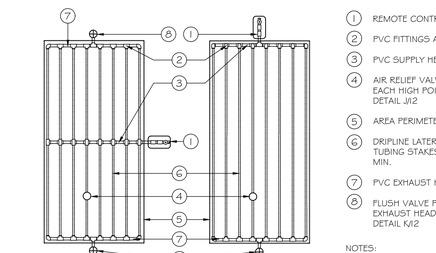


1. TOP OF MULCH
2. 10" (250mm) ROUND VALVE BOX
3. AIR RELIEF VALVE AT HIGH POINT OF SYSTEM
4. 3/4" (19mm) MPT X 1/2" (13mm) FPT BUSHING
5. DRIPLINE TUBING
6. ADAPTOR TEE
7. BRICK SUPPORTS
8. 100mm DEPTH 3/4" (19mm) GRAVEL SUMP

NOTES:
1. REFER TO IRRIGATION PLAN, LEGEND AND NOTES FOR ADDITIONAL INFORMATION.

J Dripline Air Relief Valve

Section — Not To Scale



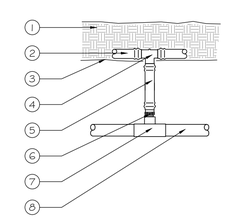
1. REMOTE CONTROL VALVE
2. PVC FITTINGS AS REQUIRED
3. PVC SUPPLY HEADER
4. AIR RELIEF VALVE PLUMBED TO EACH HIGH POINT, REFER TO DETAIL J/12
5. AREA PERIMETER
6. DRIPLINE LATERALS, STAKE WITH TUBING STAKES EVERY 3m (10') MIN.
7. PVC EXHAUST HEADER
8. FLUSH VALVE PLUMBED TO PVC EXHAUST HEADER, REFER TO DETAIL K/12

CENTRE FEED LAYOUT — END FEED LAYOUT

NOTES:
1. REFER TO IRRIGATION AND PLANTING PLANS FOR ADDITIONAL INFORMATION.
2. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

G Typical Dripline Layouts

Plan — Not To Scale

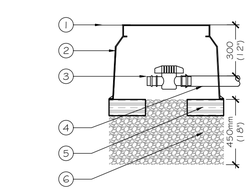


1. MULCH
2. DRIPLINE TUBING
3. FINISHED GRADE
4. DRIPLINE TEE (BARB x BARB)
5. BLANK TUBING
6. DRIPLINE ADAPTOR (BARB X THREAD)
7. 3/4" (19mm) FPT TEE
8. SUPPLY HEADER

NOTES:
1. REFER TO IRRIGATION PLAN, LEGEND AND NOTES FOR ADDITIONAL INFORMATION.
2. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

I Dripline Start Connection

Section — Not To Scale



1. TOP OF MULCH
2. 10" (250mm) ROUND VALVE BOX
3. LINE FLUSHING VALVE AT LOW POINT OF SYSTEM, REFER TO IRRIGATION LEGEND
4. BLANK DRIPLINE TUBING
5. BRICK SUPPORTS, (4) PER BOX
6. 100mm DEPTH 3/4" (19mm) GRAVEL SUMP

NOTES:
1. REFER TO IRRIGATION PLAN, LEGEND AND NOTES FOR ADDITIONAL INFORMATION.

K Dripline Flush Valve

Section — Not To Scale

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Greater Nanaimo Pollution Control Centre Frontage Works

Regional District of Nanaimo

Nanaimo, BC

IRRIGATION DETAILS

Date: March 26, 2020
Drawn: CM
Checked: NG
Scale: 1:250 metric
Project Number: 20-0260

DRAWING NUMBER: I-2 of 2

RDN DWG. No. GN-L-GEN-223

REVISION SCHEDULE

#	Date	NOTES
0	26MAR2020	Issued for Tender