AQUAPARIAN
Environmental Consulting Ltd.

October 9, 2019
Revised January 24, 2024

Patrick Brandreth
Island West Coast Developments Ltd.
2214 McCullough Road
Nanaimo BC, V9S 4M8

Via Email: [redacted]

RE: 200 TENTH STREET ACCESS IMPROVEMENTS, NANAIMO, BC
RIPARIAN COMPENSATION PLAN

1.0 INTRODUCTION

Aquaparian Environmental Consulting Ltd (Aquaparian) was retained by Island West Coast Developments Ltd (IWCD) to provide Environmental Services in association with the development of 200 Tenth Street in Nanaimo, BC. The subject parcel is an irregularly shaped 3.78-acre lot legally identified as Lot B, Section 1, Nanaimo District, Plan EPP17767. A site location map has been included as Figure 1 and a selection of site photographs have been included in Appendix A.

The subject parcel is a panhandle lot with the driveway on the north side of Tenth Street. The site was cleared in the past but is currently undeveloped. The driveway is located adjacent to a wetland reach of the north tributary of Wexford Creek which passes under Tenth Street next to the driveway. Figure 2 is a site plan produced by Aplin & Martin Consultants Ltd. The reach upstream of the culvert is a wetland with a strip of Apple Green Park between the watercourse and the subject parcel.

In July 2022, the City of Nanaimo adopted a new Official Community Plan (Bylaw No. 6600) which identifies an Environmentally Sensitive Areas Development Permit Area (DPA1) which extends 15m from the natural boundary of wetlands. Because there is no other access to the property, the first section of the driveway must be located within the DPA. A Riparian Areas Regulation (RAR) Assessment was submitted and reviewed as compliant by the province January 27, 2000. This regulation has since been replaced by the Riparian Areas Protection Regulation (RAPR) which is an approval process.

As understood, the property will be undergoing a development permit application to construct an access driveway and a proposed storage facility on the site. Driveway upgrades are required to improve access to the subject parcel and to provide public access to Applegreen Park. As

understood, the first phase of development includes paving the existing dirt driveway and constructing a new gravel, multi-use public path along the west side of the road. Fill material will need to be imported to the site to build the path and a 23m long concrete lock-block retaining wall will be required to support a portion of the fill. The retaining wall and addition of fill material will result in an encroachment into the riparian setback to approximately 5m from the natural boundary of the wetland for approximately 23m of the road alignment starting near the entrance to the site.

The driveway slopes down on the west side to the wetland boundary and the slope is vegetated predominantly with Himalayan blackberry with a red alder canopy. Existing trees and understory vegetation will be removed for the access improvements.

Aquaparian recommends planting native trees and shrubs to replace disturbance areas outside the road, path and retaining wall and to offset the proposed development within the Environmentally Sensitive Areas DPA1. Development Permit Area Guidelines within Section 18 of the City of Nanaimo Zoning Bylaw states the following:

> "The principle of net gain will be followed, and a *Qualified Registered Professional* must demonstrate how an increase in the quality and quantity of functional habitat within the *ESA* and *ESA leave strip* will be achieved once the proposed development is complete, such that any areas restored shall be of better ecological value and shall be contiguous with the original *ESA* and *ESA leave strip.* The following principles will apply to establishing net gain:
>
> i. Outcomes through habitat creation, enhancement, and/or restoration;
> ii. Target condition (functional habitat in 20 years); and,
> iii. Target metric (twice the area of encroachment into the leave strip)."

The proposed development is subject to the City's Management and Protection of Trees Bylaw 2013 No. 7126 (amended Nov 21, 2022) and will require a Tree Management Plan as part of a tree removal permit application for the proposed development. Based on the revised City of Nanaimo Tree Replacement Guidelines (Schedule G of the Bylaw for the Management and Protection of Trees within the City of Nanaimo Bylaw No. 7126.01), replacement trees will be required for all living trees removed with a diameter of 6cm or more and is capable of reaching a mature height of 4.5m or greater within its natural range. This bylaw requires at least 20% of the trees to be retained exclusive of any area set aside for park dedication when the parcel is > than 1.0 ha in size.

The following Riparian Revegetation Plan has been provided to reinstate and offset riparian habitat impacts in the DPA, to achieve the principles of net gain and to meet the replacement requirements of the Management and Protection of Trees Bylaw. A survey of trees within the site produced by Williamson & Associates Professional Surveyors is included as Figure 3. A

landscape plan by LADR Landscape Architects has been included as Figure 4 which identifies all of the required compensation plantings and other landscape planting for the project.

2.0 VEGETATION REMEDIATION PLAN

The following planting plan is recommended to remediate and offset the loss of riparian vegetation within the 15m DPA. Within the panhandle, the re-establishment of native tree and shrub vegetation is proposed along the newly constructed fill slopes on both sides of the gravel path to help restore impacted riparian habitat.

In addition to the riparian vegetation compensation, replacement trees are required for the removal of trees within the property including 11 'Significant Trees' (as defined in Schedule C of the Bylaw for the Management and Protection of Trees within the City of Nanaimo Bylaw No. 7126). The tree inventory and tree replacement requirement table is included as Appendix B. Tree replacement criteria are included in Schedule G of the Bylaw. The total number of tree replacements required for the trees to be removed within the panhandle and main portion of the property is 113 trees. The riparian offsetting planting plan below incorporates the 113 replacement trees. Replacement plantings are to be with the same species if possible and the replacement species composition would be as follows: 59 Douglas fir, 34 red alder, 7 bigleaf maple, 1 bitter cherry, 8 black hawthorn, 2 native willow and 2 oak trees. Based on the moisture regime and site conditions of the proposed planting areas, the following species composition is recommended for the 113 trees: 30 Douglas fir, 44 red alder, 28 bigleaf maple, 1 bitter cherry, 8 black hawthorn and 2 native willow.

The permanent impact area of the project in the DPA is 232m^2 with an additional 103m^2 area that will be disturbed and replanted for a total impact area of 335m^2. The net gain required by the new DPA is calculated at a 2:1 ratio which is 670m^2 for this project. Replacement trees and shrubs will be located within the identified planting areas of the property as shown in the landscape plan.

Table 1. Riparian Restoration / Compensation Area Calculation

AREA DESCRIPTION	CALCULATION	AREA
DPA / SPEA Area within parcel	15m setback on east side of the wetland	**~700m^2**
Development footprint within the DPA	Includes the paved driveway, multi-use path, fill placement and retaining wall 232m^2 and an area of fill 103m^2	**~335m^2**
Restoration Area on west side of multi-use path	Compensation planting to offset impact of road, path, retaining wall and fill area in riparian area	**~335m^2**
Additional Restoration Area on east side of multi-use path	Additional restoration area along fill slope on the east side of the path (between path and road) to achieve "net gain"	**~340m^2**

Total Restoration Area		**675m²**

Native species were selected based on existing native shrubs and tree species present and suitability to the site conditions (see Table 2). Overall planting density to be achieved is a minimum of one shrub per m^2, and one tree per $3m^2$ with the goal of 100% cover within 2-3 years. Riparian plantings should be installed in either early spring or fall when rains begin (October) for optimal planting success. The following cost estimate for plants has been provided for planning purposes.

Table 2. Riparian Planting Plan

COMMON NAME	SPECIES	SPACING	SIZE	NO.	COST PER	TOTAL
Tree Planting Area: west and south boundary of main portion of parcel (1335m²) to be hydro-seeded with meadow mix and planted with native trees						
Red alder	*Alnus rubra*	3 m^2	Min. 60mm DBH	24	$18	$432
Bigleaf maple	*Acer macrophyllum*	3 m^2	Min. 60mm DBH	10	$18	$180
Native willow	*Salix* sp.	3 m^2	Min. 60mm DBH	2	$18	$36
Sub-total				**36**		**$648**
Compensation Restoration Area: west side of pedestrian path (335m²) to be planted with native trees, shrubs and groundcover species						
Red alder	*Alnus rubra*	3 m^2	Min. 60mm DBH	14	$18	$252
Bigleaf maple	*Acer macrophyllum*	3 m^2	Min. 60mm DBH	18	$18	$324
Douglas fir	*Pseudotsuga menziesii*	3 m^2	Min. height 1.5m	30	$18	$540
Bitter cherry	*Prunus emarginata*	3 m^2	Min. 60mm DBH	1	$18	$18
Black hawthorn	*Crataegus douglasii*	1 m2	1 Gallon	8	$10	$80
Nootka rose	*Rosa nutkana*	1 m^2	1 Gallon	50	$10	$500
Snowberry	*Symphoricarpos albus*	1 m^2	1 Gallon	50	$10	$500
Salmonberry	*Rubus spectabilis*	1 m^2	1 Gallon	30	$10	$300
Sword fern	*Polystichum munitum*	1 m^2	1 Gallon	91	$10	$910
Dull Oregon grape	*Mahonia nervosa*	0.5 m^2	1 Gallon	40	$10	$400
Salal	*Gaultheria shallon*	0.5 m^2	1 Gallon	40	$100	$400
Sub-total				**372**		**$4224**
Compensation Restoration Area: east side of pedestrian path (340m²) to be planted with native shrubs, groundcover species and a few red alder trees						
Red alder	*Alnus rubra*	3 m^2	Min. 60mm DBH	6	$18	$108
Nootka rose	*Rosa nutkana*	1 m^2	1 Gallon	90	$10	$900
Snowberry	*Symphoricarpos albus*	1 m^2	1 Gallon	90	$10	$900
Sword fern	*Polystichum munitum*	1 m^2	1 Gallon	80	$10	$800
Oceanspray	*Holodiscus discolor*	1 m^2	1 Gallon	14	$10	$140
Dull Oregon grape	*Mahonia nervosa*	0.5 m^2	1 Gallon	60	$10	$600

Salal	*Gaultheria shallon*	0.5 m^2	1 Gallon	60	$10	$600
Sub-total				**400**		**$4048**
TOTAL				**808**		**$8920**

*Note: cost estimates are based on the current Streamside Native Plants Wholesale Price Guide. Cost will vary depending on supplier.

The restoration area of 335m^2 proposed on the west side of the pedestrian path is intended to offset the proposed encroachment within the DPA. The additional 340m^2 planting area on the east side of the path is intended to achieve the net gain target metric of "twice the area of encroachment into the leave strip" (CON Zoning Bylaw). The restoration area is contiguous with the existing intact riparian forest to the west of the panhandle. The species selected for the riparian compensation area are expected to naturally infill over time with the goal of 100% cover in 2-3 years.

The total area of encroachment in the DPA leave strip is 335m^2 and the total restoration area is 675m^2. This represents a net gain of just over 2:1 in habitat restoration. The native tree and shrub species selected are expected to spread and naturally infill to create functional habitat within 20 years. The tree planting area along the west and south boundary of the main portion of the parcel that is planned to be hydro-seeded with a meadow seed mix is an additional tree planting area for replacement trees that is currently devoid of trees.

2.1 Maintenance and Bond Estimate

As understood, the City of Nanaimo requires an assurance bond to be posted for the value of the plants, mulch, labour and maintenance (including irrigation) of plants to ensure the restoration plan is carried out as planned. The standard calculation to include labour is based on two times the cost of the plants and materials. For release of the bond, a completion inspection report is required following planting to release a portion of the bond with a second inspection report submitted after the end of the maintenance period.

A layer of topsoil (6" deep) will be required for the fill slope planting area which may be reused from excavated topsoil on site if available, and the entire restoration area should be covered with a layer of organic composted mulch (5cm deep) which is estimated to require approximately 44 yards (33m^3) of mulch. The recommended mulch for native plantings is 50% composted large organic woody debris and 50% organic composted soils. The cost will vary by the supplier but a conservative estimate of $30/yrd has been used in the calculation.

BOND CALCULATION:

Plants cost	$8920
Mulch cost (44 cubic yards x $30/yrd)	$1320
Bone meal cost	$200
Total	**$10,440 (not including irrigation)**

Bond Estimate: $20,880 plus irrigation

The cost of irrigation will need to be determined by the type of system proposed to be installed by IWCD and added to the above bond calculation.

2.2 Plant Sources

Green Thumb Nurseries
6261 Hammond Bay Road
Nanaimo BC V9T 5M4
250-758-0808
E-mail: grnthumb@shaw.ca

Streamside Native Plants
7455 Island Highway West, Bowser, BC
Phone/Fax: 250-757-9999 / Toll Free: 877-570-3138
http://www.streamsidenativeplants.com/
E-mail: orderdesk@streamsidenativeplants.com

3.0 INSTALLATION & MAINTENANCE RECOMMENDATIONS

- Installation of vegetation should be completed in the fall (October) and/or early spring and must be maintained and irrigated as necessary through at least three summer seasons to optimize survival. Planting in cool wet weather will reduce transplant shock and allow the plants to establish root systems without drought stress. Installing a temporary irrigation system for the first two years (at least) is recommended to ensure plants become established.

- For restoration area: a layer of topsoil is to be placed on the top of the fill slope as a planting medium overlaid with organic composted bark mulch (~5cm deep) to help retain moisture and reduce weeds. Excavate a hole twice as big as the pot and place topsoil in the hole with the plant and a handful of bone meal (reduces transplant shock).

- Overall shrub density should be a minimum of one shrub per m^2 and one tree per $3m^2$. Plant placement should mimic a natural growth pattern i.e. clusters of same species.

Concentrate sword fern plantings under trees as this species is shade tolerant. Concentrate wet tolerant plants closer to the wetland (salmonberry, alder, willow).

- A fence appropriate to the site that delineates the edge of the restoration areas on both sides of the trail should be installed to prevent trampling by users of the public access trail. The restoration area should be considered a No-Go zone and left to naturally infill.

- Every year the site will need to be inspected for invasive species growth and dead plants. Invasives are to be removed as often as necessary.

- A maintenance period of three years is recommended to determine planting success. Dead plants are to be replaced until 100% cover is achieved. Infill is expected to occur from the selected species.

- No sedimentation of the wetland is to be allowed. Applying mulch to the surface of the exposed soils immediately after planting or over any exposed soil surfaces will help prevent runoff and migration of fines if a heavy rain event occurs.

- Install silt fencing at the edge of the restoration area adjacent to the wetland; leave in place until the site is stable.

4.0 CLOSURE

If all mitigation measures are implemented as recommended in this report and the RAR report, the risk of negative impacts to the wetland and riparian habitat will be minimized and impacted conditions will be mitigated with the intent of restoring a naturally functioning riparian buffer zone in the long term.

This report has been based on site assessments, past project experience and in accordance with generally accepted biological practices. No other warranty is made, either expressed or implied. Aquaparian trusts that the information provided in this report meets your requirements. If there are any questions regarding information provided in this document, please contact the undersigned at (250) 591-2258.

Sincerely,

AQUAPARIAN ENVIRONMENTAL CONSULTING LTD

Prepared by:

Crystal Campbell
Environmental Technician

Reviewed/Revised by:

COLLEGE OF APPLIED BIOLOGY
Sarah E. Bonar
R.P. Bio #1947
CAB

Sarah Bonar B.Sc., R.P.Bio
Biologist/Principal

https://netorg5387218.sharepoint.com/sites/Shared/Shared Documents/Documents/Projects/Projects/N478 200-10th Street/Reports/Tenth Street Revegetation Plan - Revised January 2024.docx

FIGURE 1

SITE LOCATION MAP

FIGURE 1
SITE LOCATION MAP

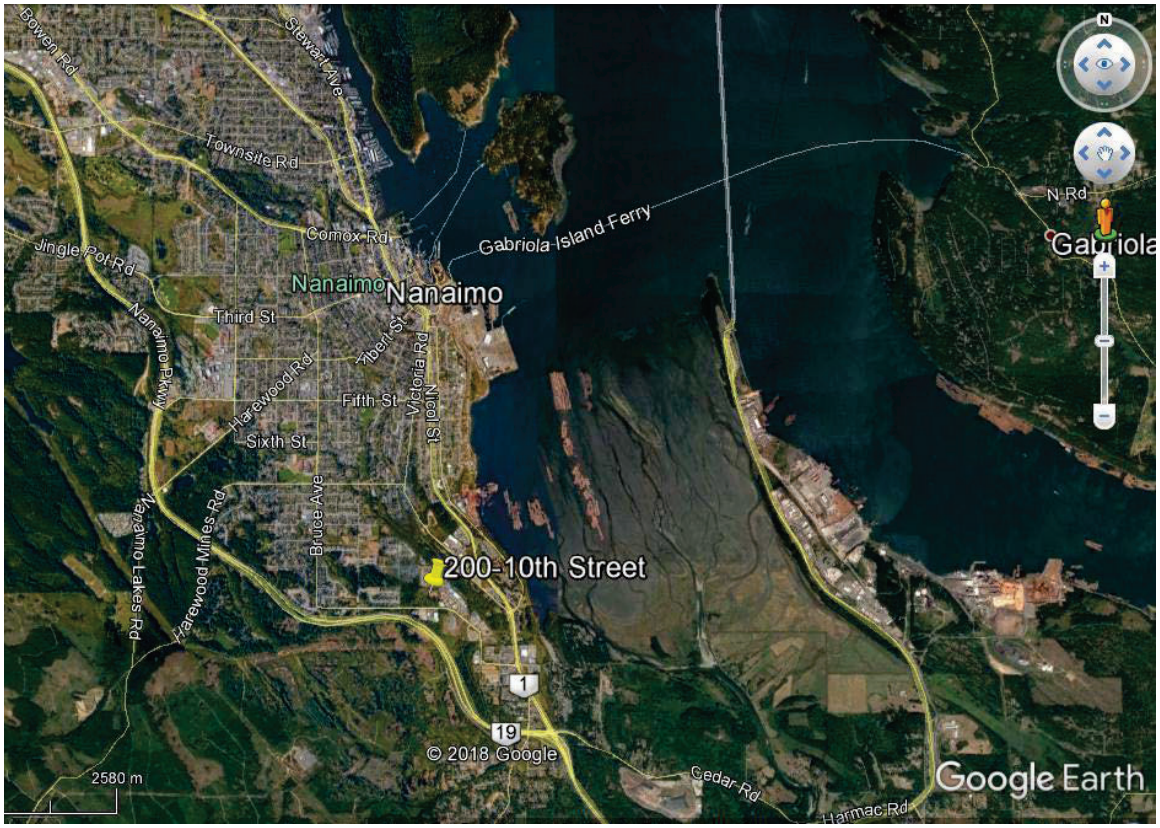
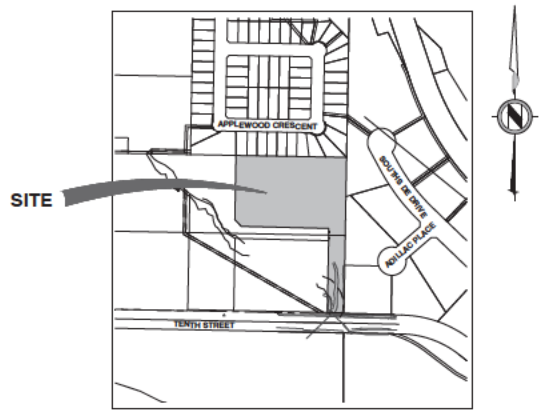


FIGURE 2

SITE PLAN
APLIN MARTIN CONSULTANTS

APLIN MARTIN
ENGINEERING ARCHITECTURE PLANNING SURVEYING

Aplin & Martin Consultants Ltd.
#1818 – 1177 West Hastings Street, Vancouver, B.C. V6E 2K3
Tel: (604) 678-9434, Fax: (604) 597-9061, Email: general@aplinmartin.com



SITE LOCATION PLAN
1:2500

DRAWING INDEX

CITY DWG NO.	A&M DWG NO.	REVISION	TITLE
XXXXX	18-5090-01	01	COVER
XXXXX	18-5090 02	01	GENERAL NOTES
XXXXX	18-5090 03	01	KEY PLAN
XXXXX	18-5090 04	01	GRADING PLAN
XXXXX	18-5090 05	01	ROADWORKS - ACCESS ROAD PROFILE
XXXXX	18-5090 06	01	ACCESS ROAD SECTIONS
XXXXX	18-5090 07	01	ONSITE SERVICING PLAN
XXXXX	18-5090 08	01	ONSITE SERVICING PROFILE
XXXXX	18-5090 09	01	ONSITE SERVICING DETAILS
XXXXX	18-5090-10	01	RETAINING WALL
XXXXX	18-5090-11	01	STORM WATER MANAGEMENT PLAN

CLIENT:

ISLAND WEST COAST DEVELOPMENT LTD.
2214 McOULLOUGH ROAD,
NANAIMO, BC V9S4M8 CANADA

PROJECT:

SHOP, WAREHOUSE AND STORAGE FACILITY
200 TENTH STREET,
NANAIMO, BC

MUNICIPAL PROJECT No. XXX

APLIN & MARTIN PROJECT No. 18-5090

GENERAL NOTES:

1. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH CITY OF NANAIMO ENGINEERING STANDARDS AND SPECIFICATIONS.
2. 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.
3. COORDINATES ARE GROUND LEVEL (UTM NAD 83 WITH COMBINED SCALE FACTOR OF 1/0.99965) AND ALL ELEVATIONS ARE TO GEODETIC DATUM.
4. LOCATION OF SERVICE CONNECTIONS TO BE DETERMINED ON SITE UNLESS SHOWN OTHERWISE.
5. ANY ALTERNATIVES TO SPECIFIED MATERIALS OR APPURTENANCES TO BE APPROVED BY THE CITY ENGINEER PRIOR TO CONSTRUCTION.
6. THE LOCATIONS OF EXISTING SERVICES ARE APPROXIMATE AND SHALL BE CONFIRMED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION. EXISTING AND PROPOSED SERVICES MAY REQUIRE ADJUSTMENT WHERE A CONFLICT OCCURS. THE ENGINEER SHALL BE NOTIFIED OF ANY CONFLICT.
7. TRENCHING DETAIL TO BE AS CITY OF NANAIMO STANDARD DWG T-1. TRAVELED AREA BACKFILL TO BE IMPORTED GRANULAR MATERIAL COMPACTED TO MINIMUM 95% MODIFIED PROCTOR, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
8. ASPHALT RESTORATION TO BE AS CITY OF NANAIMO STANDARD DWG T-4 OR T-4A PERMANENT PAVEMENT RESTORATION.
9. ALL DISTURBED SURFACES TO BE RESTORED TO EXISTING CONDITION OR BETTER.

SANITARY SEWER NOTES:

1. ALL MAINS SHALL BE PVC SDR35, AND HAVE A MINIMUM 1.5m OF COVER IN ROAD RIGHT-OF-WAYS AND 1.0m IN UNTRAVELED AREAS, UNLESS APPROVED BY ENGINEER.
2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING SERVICE TO EXISTING USERS DURING CONSTRUCTION THROUGH BYPASS PUMPING. THE CONTRACTOR IS TO PROVIDE A BYPASS PUMPING PLAN PRIOR TO STARTING CONSTRUCTION. THE CONTRACTOR SHALL ENSURE THAT THE PUMPING EQUIPMENT IS KEPT IN GOOD WORKING CONDITION DURING THE PROJECT.
3. ALL ASBESTOS CEMENT PIPING ENCOUNTERED WITHIN THE TRENCHLINE SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH WORKSAFE BC AND CITY OF NANAIMO REQUIREMENTS.
4. ALL SANITARY SERVICES SHALL BE 150ø PVC SDR28 UNLESS NOTED OTHERWISE .
5. ALL SANITARY SERVICE BOXES SHALL BE IN ACCORDANCE WITH CITY OF NANAIMO STD S-7, S-8 AND S-8A.
6. ALL PIPING AND RELATED APPURTENANCES TO BE INSPECTED PRIOR TO BACKFILLING OF THE TRENCH.
7. THE CONTRACTOR IS TO FLUSH AND PROVIDE TO THE CITY OF NANAIMO CCTV INSPECTION OF ALL MAINS PRIOR TO ASPHALT RESTORATION.
8. ALL TESTING TO CITY OF NANAIMO STANDARDS AND SPECIFICATIONS.
9. ALL SANITARY GRAVITY PIPES TO BE PVC SDR 35 AND SANITARY FORCEMAINS HDPE DR12 PIPES.

STORM DRAINAGE NOTES:

1. ALL MAINS SHALL BE PVC SDR35, AND HAVE A MINIMUM 1.5m OF COVER IN ROAD RIGHT-OF-WAYS AND 1.0m IN UNTRAVELED AREAS, UNLESS APPROVED BY ENGINEER.
2. ALL CATCH BASINS TO BE CITY OF NANAIMO TYPE 1 AS PER STD ST-1, UNLESS NOTED OTHERWISE .
3. ALL CATCH BASIN & LAWN BASIN LEADS TO BE 200ø PVC SDR35, UNLESS NOTED OTHERWISE.
4. DO NOT PLUG OR ABANDON AN EXISTING STORM DRAINAGE CONNECTION WITHOUT WRITTEN APPROVAL FROM THE CITY OF NANAIMO CONSTRUCTION REPRESENTATIVE.
5. ALL STORM DRAINAGE SERVICE CONNECTIONS TO BUILDINGS SHALL BE 150ø PVC SDR28, UNLESS NOTED OTHERWISE.
6. ALL PERFORATED DRAIN PIPES TO BE PVC SDR35, UNLESS NOTED OTHERWISE.
7. ALL STORM DRAINAGE SERVICE BOXES SHALL BE IN ACCORDANCE WITH CITY OF NANAIMO STD SW-22, SW-23 AND SW-24.
8. PROPOSED STORM DRAINAGE SERVICES ARE TO BE INSTALLED BELOW EXISTING BASEMENT ELEVATION OR AT THE SAME INVERT AS THE SANITARY SERVICES WHERE POSSIBLE, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
9. NOT ALL STORM CONNECTIONS ARE SHOWN. SOME PROPERTIES MAY HAVE MORE THAN ONE CONNECTION TO THE EXISTING DITCH OR ADJACENT CULVERT.
10. ALL EXISTING CULVERTS AND STORM DRAIN SYSTEMS THAT ARE TO BE ABANDONED SHALL BE INSPECTED FOR EXISTING STORM SERVICE LEADS. ALL EXISTING LEADS ARE TO BE CONNECTED TO THE NEW STORM SEWER SYSTEM.
11. ALL PIPING AND RELATED APPURTENANCES TO BE INSPECTED AND APPROVED PRIOR TO BACKFILLING OF TRENCH.
12. THE CONTRACTOR IS TO FLUSH AND PROVIDE THE CITY OF NANAIMO CCTV INSPECTION OF ALL MAINS PRIOR TO ASPHALT RESTORATION.

WATERMAIN NOTES:

1. MINIMUM COVER OVER WATERMAIN TO BE 1.20 METERS.
2. EXISTING PIPE TO BE REMOVED ONCE EXISTING WATERMAIN IS DECOMMISSIONED OR AS APPROVED BY THE ENGINEER.
3. ALL WATERMAIN JOINTS WITHIN 3.0m HORIZONTAL OR 0.45m VERTICAL OF SANITARY OR STORM DRAIN MAINS TO BE PROTECTED BY SHRINK WRAP OR PETROLEUM TAPE.
4. PRESSURE TESTS, CHLORINATION AND BACTERIOLOGICAL TESTING TO CITY OF NANAIMO STANDARD SPECIFICATIONS.
5. ALL WATERMAINS TO BE PVC DR18.
6. ALL WATERMAIN JOINTS TO BE FULLY RESTRAINED.

EROSION & SEDIMENT CONTROL NOTES

1. UNDER THIS PLAN, ALL PERSONS INCLUDING BUT NOT LIMITED TO THE DEVELOPER, OWNER OF THE LAND, THE ENGINEER OF RECORD, ESC SUPERVISOR, CIVIL CONTRACTOR, CIVIL SUB-CONTRACTOR, BUILDER & BUILDING SUB-TRADES, HEREIN AFTER REFERRED TO AS THE OWNER/DEVELOPER/PERSON RESPONSIBLE, ENGAGED ON SITE SHALL COMPLY WITH ALL REGULATORY REQUIREMENTS SPECIFIED BY FEDERAL, PROVINCIAL, AND MUNICIPAL AUTHORITIES; PERTAINING TO ON SITE MANAGEMENT AND DISCHARGE ASSOCIATED WITH EROSION AND SEDIMENT CONTROL REGULATIONS.
2. ALL WORK ASSOCIATED WITH THE SUBJECT PROJECT SHALL COMPLY WITH THE REQUIREMENTS OF THE FISHERIES Act, AND ALL OTHER APPLICABLE LAWS, LEGISLATION, AND BEST MANAGEMENT PRACTICES. NOTE THAT SECTION 36(3) OF THE FEDERAL FISHERIES Act PROHIBITS THE DISCHARGE OF DELETERIOUS SUBSTANCES TO WATERS FREQUENTED BY FISH EITHER DIRECTLY OR INDIRECTLY AS BY STORM SEWER. DUE DILIGENCE IS REQUIRED AT ALL TIMES TO PREVENT SUCH DISCHARGES AND ADHERENCE TO THESE CONDITIONS DOES NOT PROVIDE RELIEF FROM ONGOING RESPONSIBILITIES IN THIS REGARD. SEDIMENT AND EROSION CONTROL MEASURES SHOULD MEET OR SURPASS THE STANDARDS OUTLINED IN THE FISHERIES AND OCEANS CANADA "LAND DEVELOPMENT GUIDELINES FOR THE PROTECTION OF AQUATIC HABITAT"
3. THE DEVELOPER/PERSON RESPONSIBLE SHALL ENSURE THAT ALL CONSTRUCTION ACTIVITIES ARE UNDERTAKEN IN A MANNER THAT ENSURE THE BEST MANAGEMENT PRACTICES ARE IMPLEMENTED TO PREVENT AND CONTAIN ON-SITE SILT LADEN RUNOFF THAT EXCEEDS 75/MG/L TSS, FROM ENTERING DOWNSTREAM DRAINAGE INFRASTRUCTURE AND AQUATIC SYSTEMS.
4. THE ESC SUPERVISOR IS RESPONSIBLE TO MONITOR, INSPECT AND REPORT TO THE DEVELOPER AND CONTRACTOR ON EROSION AND SEDIMENT FACILITIES & SITE DISCHARGE PERFORMANCE IN ACCORDANCE WITH THE BEST SEDIMENT CONTROL MANAGEMENT PRACTICES.
5. THE DEVELOPER/OWNER/PERSONS RESPONSIBLE MUST COMPLY WITH THE ESC PLAN WITHIN THE SPECIFIED TIMEFRAME, AND COMPLY WITH ALL INSTRUCTIONS ISSUED BY THE ESC SUPERVISOR TO RECTIFY DEFICIENCIES.
6. CONTRACTOR SHALL UNDERTAKE MEASURES TO LIMIT THE TRANSPORT OF SEDIMENT ONTO CITY ROADWAYS.

MAINTENANCE ALL STAGES (AS APPLICABLE)

1. UPON INSTRUCTION/NOTIFICATION BY THE ENGINEER OF RECORD OR ESC SUPERVISOR; PERSONS RESPONSIBLE ARE REQUIRED TO UNDERTAKE MAINTENANCE ACTIVITIES AS DEEMED SPECIFIED TO MODIFY OR MAINTAIN ESC FACILITIES.
2. ALL CATCH BASIN FILTER SOCKS ARE TO BE INSPECTED WEEKLY OR FOLLOWING STORM EVENTS, INLINE FILTERS ARE TO BE REMOVED AND CLEANED AT 40% CAPACITY.
3. DEVELOPER OR BUILDER MUST REGULARLY CLEAN PAVED ROAD SURFACES OF ACCUMULATED SEDIMENTS AT THE END OF EACH DAY OR AS REQUIRED. NO SOIL, SAND OR OTHER MATERIAL WITH HIGH SEDIMENT CONTENT SHALL BE DEPOSITED OR PILED OUTSIDE OF THE PROPERTY BOUNDARIES, PARTICULARLY ON PAVED ROAD SURFACES.
4. DUST NUISANCE WILL BE REDUCED BY USE OF WATER SPRAYED ON THE EXPOSED SOURCE OF THE DUST. FREQUENCY OF THE SUPPRESSION WILL BE AS REQUIRED OR AS DIRECTED BY THE ENGINEER
5. SEDIMENT FENCES/BARRIERS TO BE INSPECTED AND REPAIRED PRIOR TO EXPECTED RAIN EVENTS AND FOLLOWING ALL SIGNIFICANT STORM EVENTS OR PERIODS OF EXTENDED RAIN; ACCUMULATED SEDIMENTS GREATER THAN 30% OF THE FENCE CAPACITY OR DEFICIENCIES SHOULD BE DEALT WITH ACCORDINGLY.
6. ALL SEDIMENT FROM ESC CONTROL FACILITIES TO BE DISPOSED OF IN A MANNER AS TO NOT COMPOUND OR COMPROMISE THE SEDIMENT LOADING OF OTHER CONTROL MEASURES.
7. ROUTINE INSPECTION AND MAINTENANCE OF THE SITE WORKS WILL BE THE RESPONSIBILITY OF THE ESC SUPERVISOR. THE SUPERVISOR IS RESPONSIBLE FOR DAY-TO-DAY MAINTENANCE OF THE ESC WORKS. 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.
8. AN INSPECTION OF THE ESC WORKS IS TO BE CONDUCTED PRIOR TO ANY PREDICTED SIGNIFICANT RAINFALL EVENTS AND MAINTENANCE OR IMPROVEMENTS TO ENSURE THAT THE ESC WORKS ARE ADEQUATE TO ACCOMMODATE THE COMPLETION OF THE ANTICIPATED RAINFALL EVENT. A REPORT IDENTIFYING THE CONDITION OF THE ESC WORKS AND ANY MAINTENANCE OR IMPROVEMENT UNDERTAKEN BEFORE THE RAINFALL EVENT IS TO BE PROVIDED TO THE ENGINEER AND THE CITY OF NANAIMO FOR REVIEW.

CLEARING, ROAD STRIPPING, GRAVELLING AND ROUGH GRADING STAGE

1. CONTRACTOR TO NOTIFY THE ENGINEER OF RECORD THAT CLEARING AND GRUBBING HAS COMMENCED.
2. PERIMETER ESC MEASURES TO BE INSTALLED PRIOR TO INITIATING ONSITE CLEARING AND GRUBBING.
3. INSTALL PROTECTIVE MEASURES AT OR WITHIN EXISTING CATCH/LAWN BASINS AS APPLICABLE.
4. PRIOR TO LEAVING THE SITE, OFF-SITE CLEARING AND GRUBBING CONTRACTOR TO OBTAIN SIGN OFF BY THE ENGINEER OF RECORD.
5. GENERAL CONTRACTOR TO HAVE A COPY OF THE ESC PLAN ONSITE AT ALL TIMES, AND ENSURE SIGNAGE IS IN PLACE.
6. ANY STOCKPILED MATERIAL TO BE COVERED AND ENCIRCLED BY SEDIMENT FENCE AS SPECIFIED.
7. THE ENGINEER OF RECORD WILL BE RESPONSIBLE TO ENSURE THAT THE EXISTING ROADS ARE REVIEWED DAILY AND SWEPT REGULARLY. FLUSHING OF ROADWAYS IS PROHIBITED.

UTILITY AND ROADWORKS INSTALLATION STAGE

1. CONTRACTOR TO INSTALL TEMPORARY SEDIMENT CONTROL MEASURES AS SPECIFIED IN THE ESC PLAN AND AS DIRECTED BY ENGINEER OF RECORD.
2. APLIN & MARTIN MAY CONDUCT MONITORING
3. CONTRACTOR TO ENSURE THAT ESC MEASURES ARE WELL MAINTAINED, CLEARED, REPAIRED, OR REPLACED AS REQUIRED.
4. CATCH/LAWN BASINS COMPLETE WITH PROTECTIVE MEASURES ARE TO BE INSTALLED BY THE CONTRACTOR AT THE FIRST OPPORTUNITY.
5. CONTRACTOR TO CO-ORDINATE THE ELIMINATION OF TEMPORARY ESC FACILITIES IF THEY ARE NO LONGER REQUIRED OR TO FACILITATE SITE OPERATIONS WITH THE ENGINEER OF RECORD. ADDITIONAL ESC FACILITIES MAY NEED TO BE INSTALLED AS PER THE DIRECTION OF THE ENGINEER OF RECORD.
6. DURING CONSTRUCTION THE CONTRACTOR MAY NEED TO EMPLOY ADDITIONAL MEASURES BUT NOT LIMITED TO, INTERCEPTOR DITCHES, SILT FENCES, PORTABLE TREATMENT FACILITIES, FLOCCULANTS, ETC., TO PREVENT RELEASE OF SILTY AND SEDIMENT LADEN WATER TO EXISTING STORM SYSTEM.
7. ANY IRREGULARITIES SHALL BE REPORTED TO THE ENGINEER-OF-RECORD IMMEDIATELY.

FINAL STAGE THROUGH TO COMPLETION

1. GENERAL CONTRACTOR TO ENSURE THAT STORMWATER CONVEYANCE CHANNELS AND DISCHARGE POINTS TO ADJACENT STREAMS, DITCHES, OR ENTRY POINTS TO PIPED NETWORKS ARE ADEQUATELY PROTECTED.
2. CONTRACTOR TO ENSURE THAT ESC FACILITIES SPECIFIED IN THE ESC PLAN OR ANY ADDENDUMS ARE IMPLEMENTED ACCORDINGLY.
3. CONTRACTOR TO CO-ORDINATE THE ELIMINATION OF TEMPORARY FACILITIES AS THEY ARE NO LONGER REQUIRED WITH THE ENGINEER OF RECORD. ADDITIONAL ESC FACILITIES MAY NEED TO BE INSTALLED AS PER THE DIRECTION OF THE ENGINEER OF RECORD.
4. ALL SEDIMENT CONTROL FACILITIES SHOWN MUST REMAIN IN PLACE UNTIL 90% OF ON-SITE CONSTRUCTION IS COMPLETE.

POWER, COMMUNICATIONS AND GAS:

1. THE CONTRACTOR SHALL CONTACT BC ONE CALL A MINIMUM OF THREE WORKING DAYS PRIOR TO START OF CONSTRUCTION.
2. THE CONTRACTOR SHALL CONSTRUCT UNDERGROUND BC HYDRO, TELUS, SHAW CABLE AND FORTIS BC IN ACCORDANCE WITH THE APPLICABLE UTILITY COMPANY'S CURRENT SPECIFICATIONS.
3. THE CONTRACTOR SHALL NOTIFY ALL UTILITY OWNERS REQUIRED PRIOR TO THE START OF CONSTRUCTION TO ARRANGE INSPECTION AND APPROVALS.
4. THE CONTRACTOR SHALL CONTACT BC HYDRO AND TELUS TO INSTALL RISERS ON EXISTING JUNCTION BOXES TO BRING LID ELEVATIONS FLUSH TO GRADE.
5. CONNECTION TO, OR ALTERATION OF, EXISTING TOWN OF VIEW ROYAL OWNED UTILITIES REQUIRES AUTHORIZATION BY THE TOWN'S REPRESENTATIVE.
6. ALL LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES SHOWN ARE APPROXIMATE ONLY AND SHALL BE CONFIRMED BY THE USE OF A PIPE LOCATOR AND MANUAL DIGGING. ALL OR ANY STRUCTURES NOT NECESSARILY SHOWN.
7. ALL SURFACE RESTORATION (ROADS, CURBS, SIDEWALKS, ETC) SHALL BE ORIGINAL CONDITION OR BETTER.
8. THE CONTRACTOR SHALL NOTIFY ALL RESIDENCES AND/OR BUSINESSES AFFECTED BY THE CONSTRUCTION FIVE DAYS PRIOR TO STARTING THE CONSTRUCTION. THE CONTRACTOR SHALL ALSO EACH DAY INDIVIDUALLY NOTIFY EACH RESIDENCE OR BUSINESS WHICH WILL BE AFFECTED BY THE NEXT DAYS' WORK.
9. THE DRAWINGS MAY NOT SHOW ALL INDIVIDUAL UNDERGROUND HOME SERVICE CONNECTIONS. THE CONTRACTOR SHALL EXPOSE ALL EXISTING UNDERGROUND FACILITIES BY HAND DIGGING BEFORE USING MECHANICAL EXCAVATING EQUIPMENT.

NOT FOR CONSTRUCTION

NOTICE TO CONTRACTOR

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LEGAL DESCRIPTION: LOT B, SECTION 1, NANAIMO DISTRICT, PLAN EPP17787

B.M. MONUMENT NO. 83H6010 & 83H6011 ELEVATION: 47.19m & 29.89m LOCATED AT STREET & . AVENUE

REV. NO.	DESCRIPTION	DR	CH	DATE	APP
00	FOR DISCUSSION	VG	SL	2019JUN14	SL
01	ISSUED FOR DEVELOPMENT PERMIT	CL	SL	2019SEP23	SL

APLIN MARTIN

Aplin & Martin Consultants Ltd.
201 - 12448 82 Avenue, Surrey, B.C. Canada V3W 3E9
Tel: 604) 597.9058. Fax: (604) 597.9061. Email: general@aplinmartin.com

CLIENT: ISLAND WEST COAST DEVELOPMENT LTD.
2214 McCULLOUGH ROAD, NANAIMO BC V9S 4M8 CANADA
PH. (250) 756-9665

PROJECT: SHOP, WAREHOUSE AND STORAGE
200 TENTH STREET, NANAIMO BC

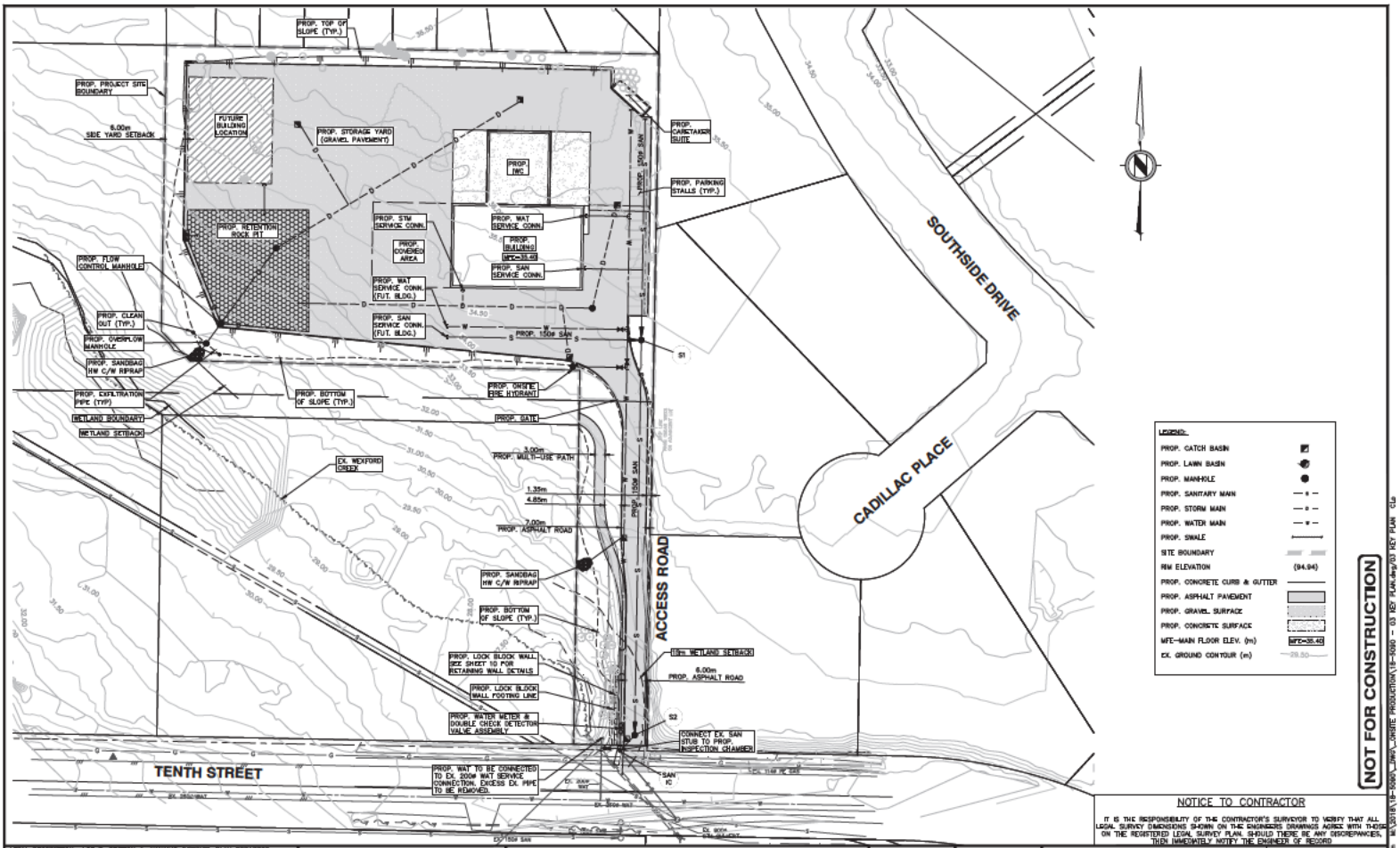
TITLE: GENERAL NOTES

DESIGN: VG CHECK: SL
DRAWN: VG APPR: SL

A & M FILE: 18-5090

PROJECT NO. -
SCALE : HORZ. VERT.
DRAWING DATE: JUNE 2019

DRAWING NO. -
A & M DRAWING NO. 18-5090 - 02
SHEET NO. 02 OF 11
REV. 01



LEGAL DESCRIPTION: LOT B, SECTION 1, NANAIMO DISTRICT, PLAN EPP17787

B.M. MONUMENT NO. 83H8010 & 83H8011 ELEVATION: 47.19m & 29.89m
LOCATED AT STREET & . AVENUE

REV. NO.	DESCRIPTION	DR	CH	DATE	APP
00	FOR DISCUSSION	VG	SL	2019JUN14	SL
01	ISSUED FOR DEVELOPMENT PERMIT	CL	SL	2019SEP23	SL

APLIN MARTIN

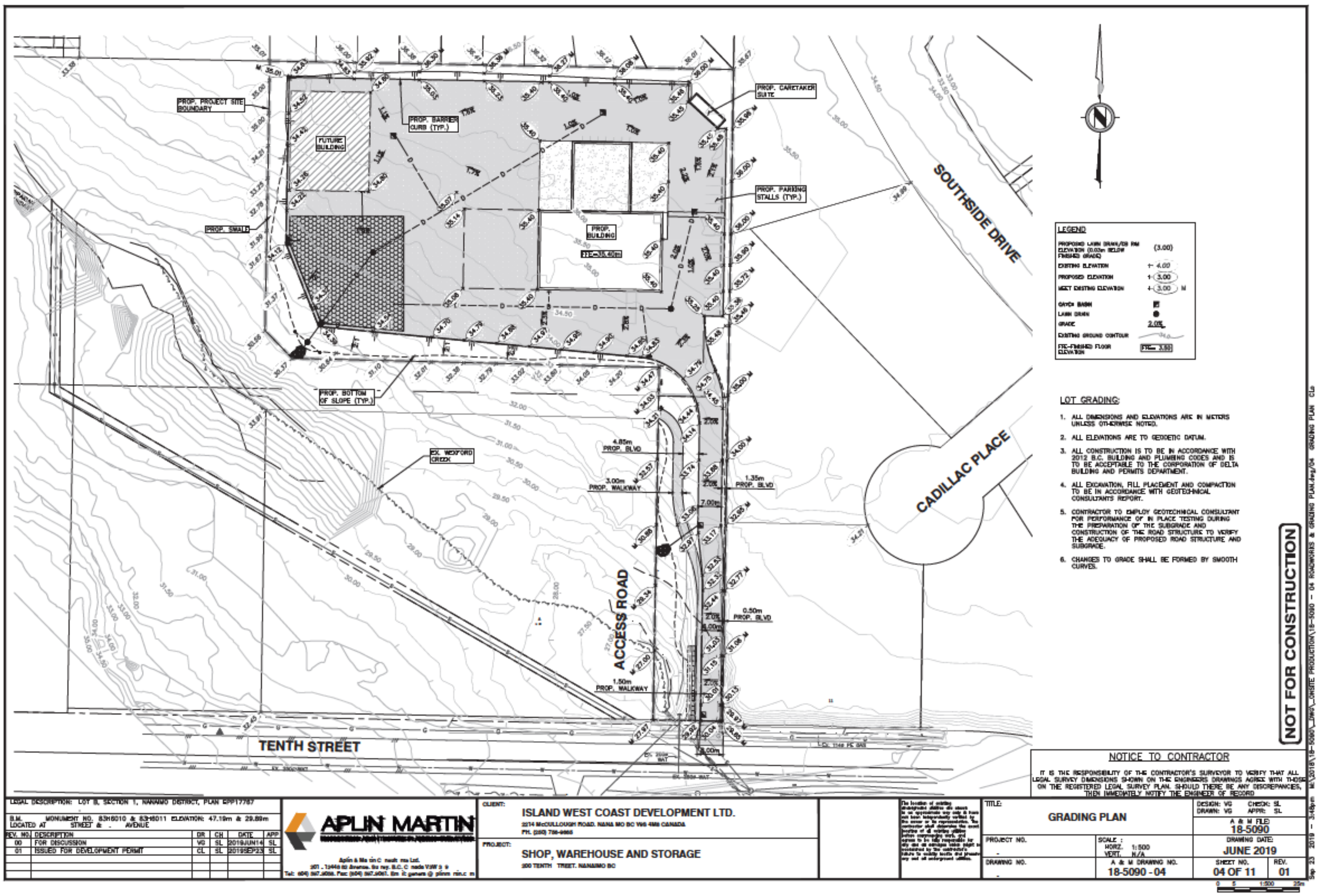
CLIENT: ISLAND WEST COAST DEVELOPMENT LTD.
2214 McCULLOUGH ROAD, NANAIMO BC V9S 4M8 CANADA
PH. (250) 756-4868

PROJECT: SHOP, WAREHOUSE AND STORAGE
300 TENTH STREET, NANAIMO BC

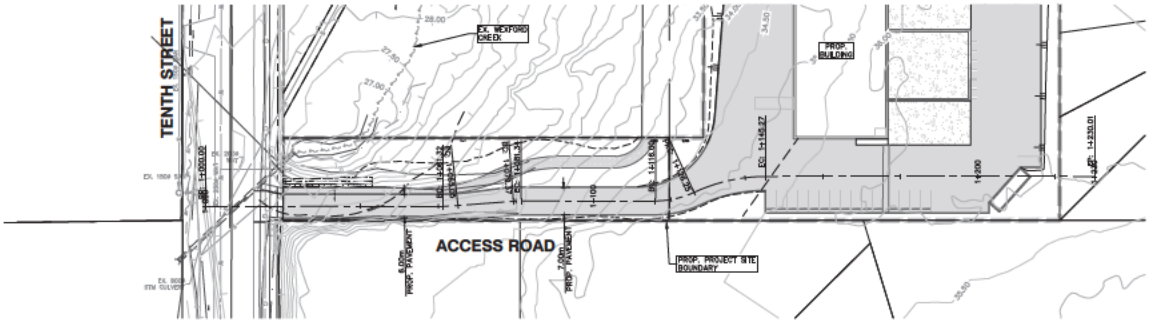
TITLE: KEY PLAN

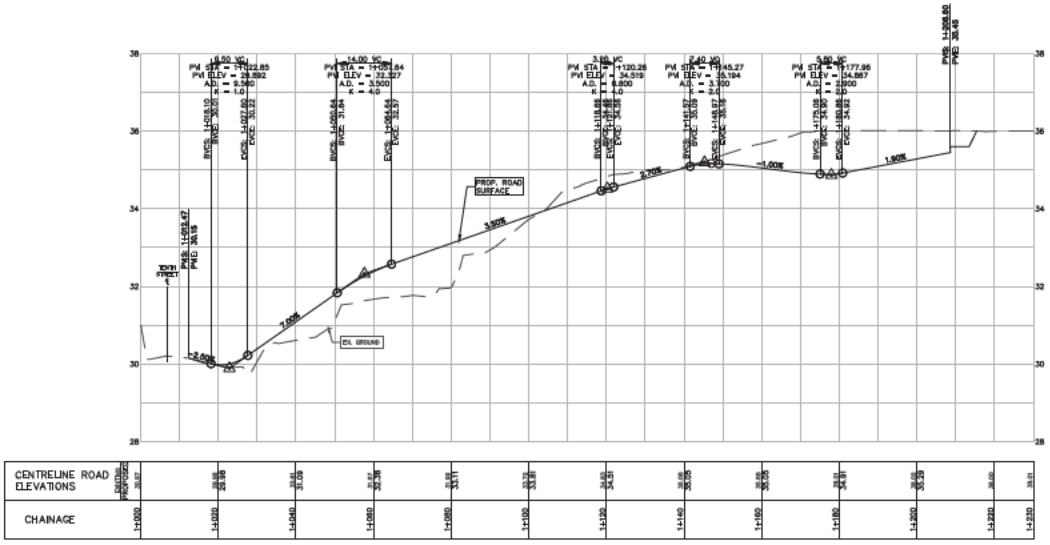
PROJECT NO. -	SCALE: HORIZ. 1:500 VERT. N/A	DESIGN: VG DRAWN: VG CHECK: SL APPR: SL
DRAWING NO. -	A & M DRAWING NO. 18-5090 - 03	A & M FILE: 18-5090
	SHEET NO. 03 OF 11	DRAWING DATE: JUNE 2019
	REV. 01	

0 5 1:500 25m



PROP. PROJECT SITE BOUNDARY
FUTURE BUILDING
PROP. BARRIER CURB (TYP.)
PROP. CARETAKER SUITE
PROP. PARKING STALLS (TYP.)
PROP. BUILDING
PROP. SWALE
PROP. BOTTOM OF SLOPE (TYP.)
EX. WEXFORD CREEK
4.85m PROP. BLVD
3.00m PROP. WALKWAY
1.35m PROP. BLVD
0.50m PROP. BLVD
1.50m PROP. WALKWAY
ACCESS ROAD
TENTH STREET
SOUTHSIDE DRIVE
CADILLAC PLACE
LEGEND
CATCH BASIN
LAWN DRAIN
GRADE
EXISTING GROUND CONTOUR
FFE-FINISHED FLOOR ELEVATION
LOT GRADING:
1. ALL DIMENSIONS AND ELEVATIONS ARE IN METERS UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE TO GEODETIC DATUM.
3. ALL CONSTRUCTION IS TO BE IN ACCORDANCE WITH 2012 B.C. BUILDING AND PLUMBING CODES AND IS TO BE ACCEPTABLE TO THE CORPORATION OF DELTA BUILDING AND PERMITS DEPARTMENT.
4. ALL EXCAVATION, FILL PLACEMENT AND COMPACTION TO BE IN ACCORDANCE WITH GEOTECHNICAL CONSULTANTS REPORT.
5. CONTRACTOR TO EMPLOY GEOTECHNICAL CONSULTANT FOR PERFORMANCE OF IN PLACE TESTING DURING THE PREPARATION OF THE SUBGRADE AND CONSTRUCTION OF THE ROAD STRUCTURE TO VERIFY THE ADEQUACY OF PROPOSED ROAD STRUCTURE AND SUBGRADE.
6. CHANGES TO GRADE SHALL BE FORMED BY SMOOTH CURVES.
NOT FOR CONSTRUCTION
NOTICE TO CONTRACTOR
IT IS THE RESPONSIBILITY OF THE CONTRACTOR'S SURVEYOR TO VERIFY THAT ALL LEGAL SURVEY DIMENSIONS SHOWN ON THE ENGINEERS DRAWINGS AGREE WITH THOSE ON THE REGISTERED LEGAL SURVEY PLAN. SHOULD THERE BE ANY DISCREPANCIES, THEN IMMEDIATELY NOTIFY THE ENGINEER OF RECORD
LEGAL DESCRIPTION: LOT B, SECTION 1, NANAIMO DISTRICT, PLAN EPP17767
REV. NO. DESCRIPTION DR CH DATE APP
00 FOR DISCUSSION VG SL 2019JUN14 SL
01 ISSUED FOR DEVELOPMENT PERMIT CL SL 2019SEP23 SL
APLIN MARTIN
CLIENT: ISLAND WEST COAST DEVELOPMENT LTD.
PROJECT: SHOP, WAREHOUSE AND STORAGE
TITLE: GRADING PLAN
DESIGN: VG CHECK: SL
DRAWN: VG APPR: SL
A & M FILE: 18-5090
SCALE: HORZ. 1:500 VERT. N/A
DRAWING DATE: JUNE 2019
A & M DRAWING NO. 18-5090 - 04
SHEET NO. 04 OF 11
REV. 01





NOT FOR CONSTRUCTION

NOTICE TO CONTRACTOR

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LEGAL DESCRIPTION: LOT B, SECTION 1, NANAIMO DISTRICT, PLAN EPP17787

B.M. MONUMENT NO. 83H6010 & 83H6011 ELEVATION: 47.19m & 29.89m
LOCATED AT STREET & . AVENUE

REV. NO.	DESCRIPTION	DR	CH	DATE	APP
00	FOR DISCUSSION	VG	SL	2019JUN14	SL
01	ISSUED FOR DEVELOPMENT PERMIT	CL	SL	2019SEP23	SL

APLIN MARTIN

CLIENT: ISLAND WEST COAST DEVELOPMENT LTD.
2214 McCULLOUGH ROAD, NANAIMO BC V9S 4M8 CANADA
PH. (250) 756-4868

PROJECT: SHOP, WAREHOUSE AND STORAGE
200 TENTH STREET, NANAIMO BC

TITLE: ROADWORKS - ACCESS ROAD PROFILE

DESIGN: VG DRAWN: VG CHECK: SL APPR: SL

A & M FILE: 18-5090

PROJECT NO. -

SCALE: HORZ. 1:500 VERT. 1:50

DRAWING DATE: JUNE 2019

DRAWING NO. -

A & M DRAWING NO. 18-5090 - 05

SHEET NO. 05 OF 11

REV. 01

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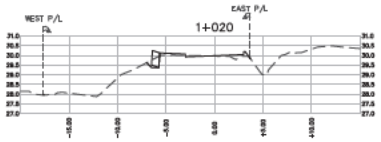
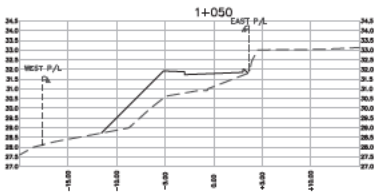
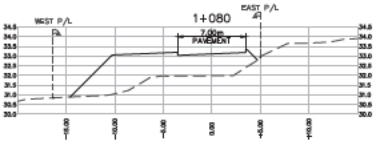
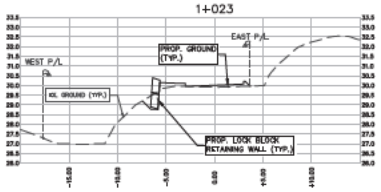
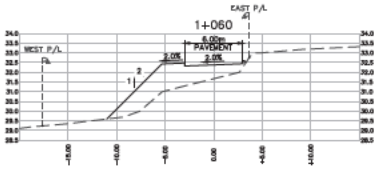
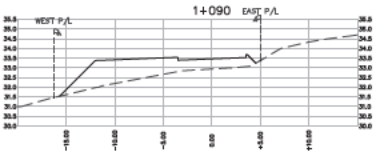


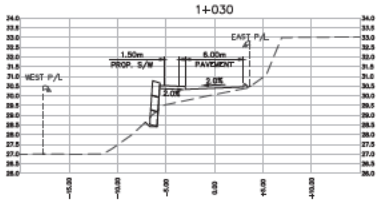


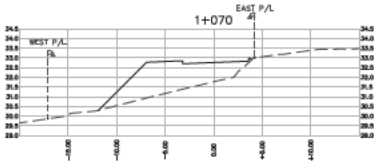


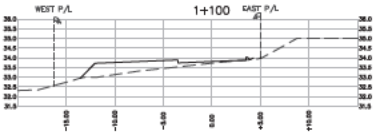


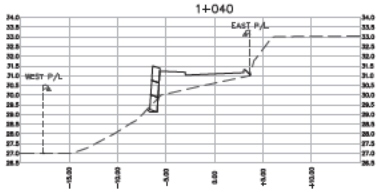


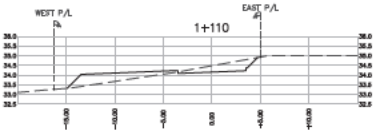












NOT FOR CONSTRUCTION

NOTICE TO CONTRACTOR

IT IS THE RESPONSIBILITY OF THE CONTRACTOR'S SURVEYOR TO VERIFY THAT ALL LEGAL SURVEY DIMENSIONS SHOWN ON THE ENGINEERS DRAWINGS AGREE WITH THOSE ON THE REGISTERED LEGAL SURVEY PLAN. SHOULD THERE BE ANY DISCREPANCIES, THEN IMMEDIATELY NOTIFY THE ENGINEER OF RECORD

LEGAL DESCRIPTION: LOT B, SECTION 1, NANAIMO DISTRICT, PLAN EPP17787

B.M. MONUMENT NO: 83H6010 & 83H6011 ELEVATION: 47.19m & 29.89m
LOCATED AT STREET & AVENUE

REV. NO.	DESCRIPTION	DR	CH	DATE	APP
00	FOR DISCUSSION	VG	SL	2019JUN14	SL
01	ISSUED FOR DEVELOPMENT PERMIT	CL	SL	2019SEP23	SL

APLIN MARTIN

CLIENT: ISLAND WEST COAST DEVELOPMENT LTD.
2214 McCULLOUGH ROAD, NANAIMO BC V9S 4M8 CANADA
PH. (250) 756-4868

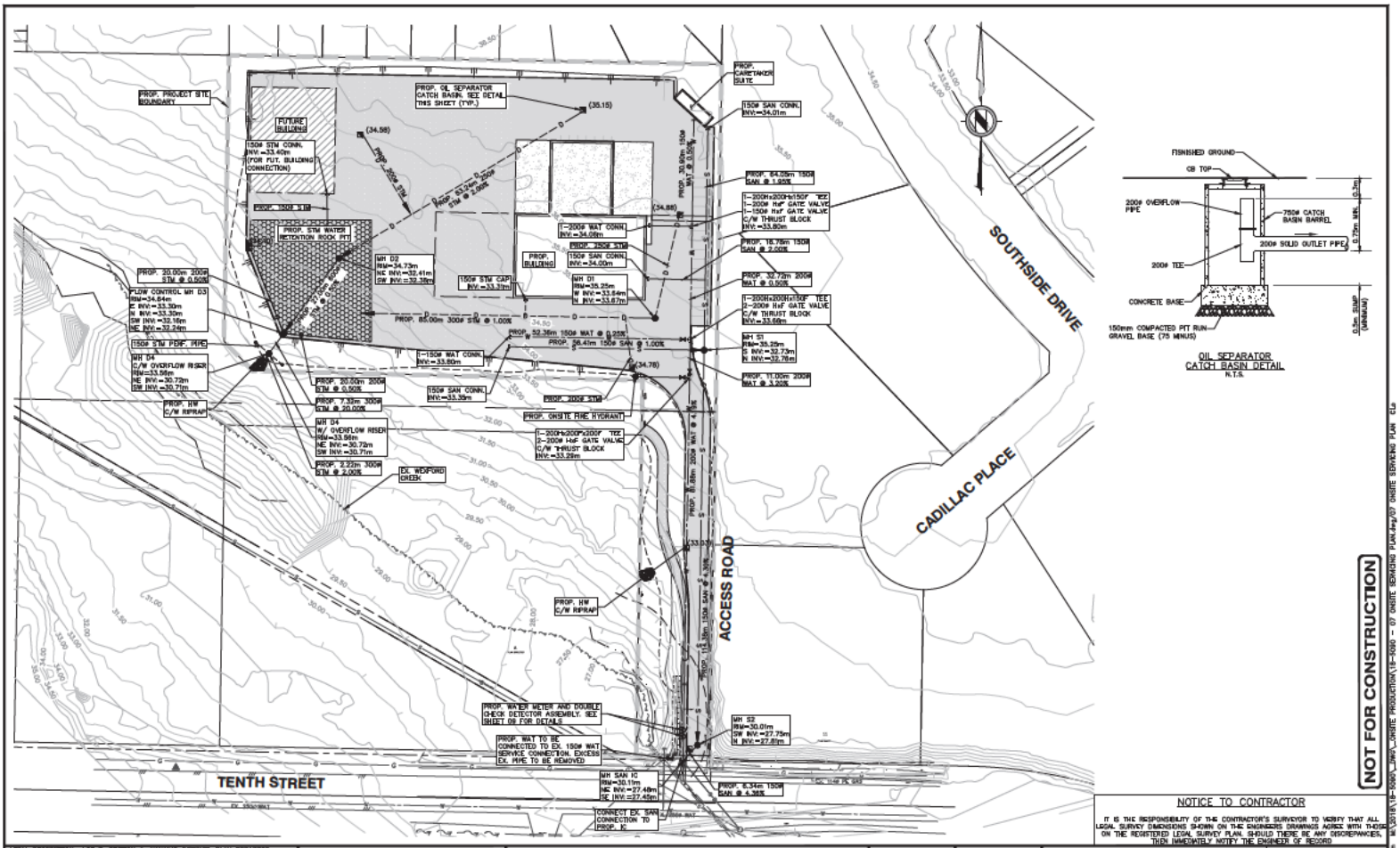
PROJECT: SHOP, WAREHOUSE AND STORAGE
200 TENTH STREET, NANAIMO BC

TITLE: ACCESS ROAD SECTIONS

DESIGN: VG DRAWN: VG CHECK: SL APPR: SL
A & M FILE: 18-5090
PROJECT NO. -
SCALE: HORIZ. 1:200 VERT. 1:100
DRAWING DATE: JUNE 2019
DRAWING NO. -
A & M DRAWING NO. 18-5090 - 06
SHEET NO. 06 OF 11
REV. 01

0 2 1:200 10m

Sep 23 2019 - 3:49pm W:\2018\18-5090_DWG_CIVIL\PRODUCTION\18-5090 - 05 ACCESS ROAD SECTIONS.dwg/06 ACCESS ROAD SECTIONS clp



LEGAL DESCRIPTION: LOT B, SECTION 1, NANAIMO DISTRICT, PLAN EPP17787

B.M. MONUMENT NO. 83H8010 & 83H8011 ELEVATION: 47.19m & 29.89m
LOCATED AT STREET & . AVENUE

REV. NO.	DESCRIPTION	DR	CH	DATE	APP
00	FOR DISCUSSION	VG	SL	2019JUN14	SL
01	ISSUED FOR DEVELOPMENT PERMIT	CL	SL	2019SEP23	SL

APLIN MARTIN
Aplin & Martin Consultants Ltd.
201 - 12448 82 Avenue, Surrey, B.C. V3W 3E9
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CLIENT: ISLAND WEST COAST DEVELOPMENT LTD.
2214 McCULLOUGH ROAD, NANAIMO BC V9S 4M8 CANADA
PH. (250) 756-0355

PROJECT: SHOP, WAREHOUSE AND STORAGE
200 TENTH STREET, NANAIMO BC

The location of existing underground utilities as shown is an approximate only and is based on the records supplied to this office. It is the contractor's responsibility to determine the exact location of all existing utility services before commencing work, and the contractor is responsible for any and all damages which may be occasioned by the contractor's failure to satisfy himself as to the exact location of any and all underground utilities.

TITLE: ONSITE SERVICING PLAN

DESIGN: VG DRAWN: VG CHECK: SL APPR: SL

A & M FILE: 18-5090

PROJECT NO. -

SCALE: 1:500 HORIZ. VERT.

DRAWING DATE: JUNE 2019

DRAWING NO. -

A & M DRAWING NO. 18-5090 - 07

SHEET NO. 07 OF 11

REV. 01

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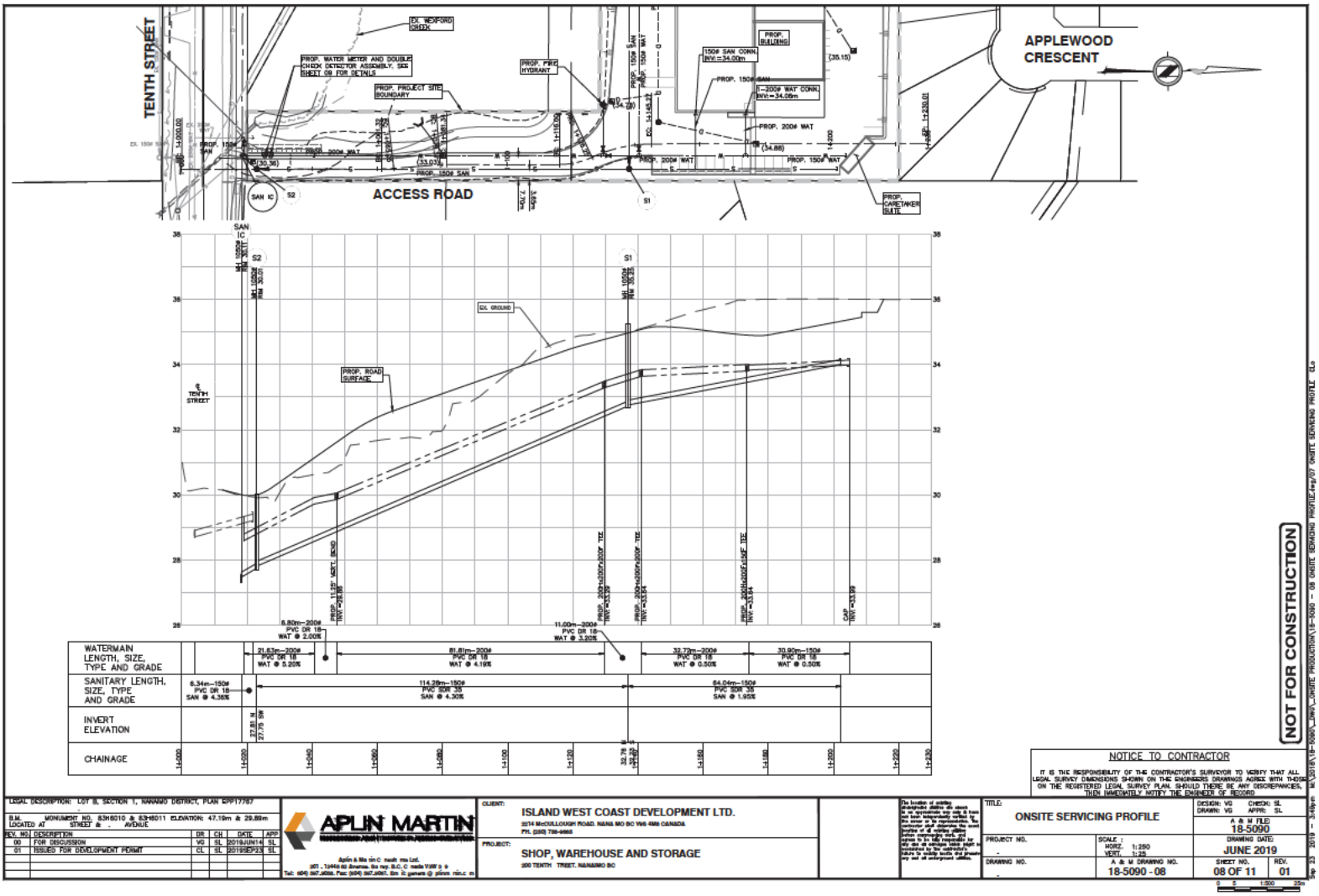

NOTICE TO CONTRACTOR

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NOT FOR CONSTRUCTION

LEGAL DESCRIPTION: LOT B, SECTION 1, NANAIMO DISTRICT, PLAN EPP17787

B.M. MONUMENT NO. 83H8010 & 83H8011 ELEVATION: 47.19m & 29.89m
LOCATED AT STREET & . AVENUE

REV. NO.	DESCRIPTION	DR	CH	DATE	APP
00	FOR DISCUSSION	VG	SL	2019JUN14	SL
01	ISSUED FOR DEVELOPMENT PERMIT	CL	SL	2019SEP23	SL

APLIN MARTIN

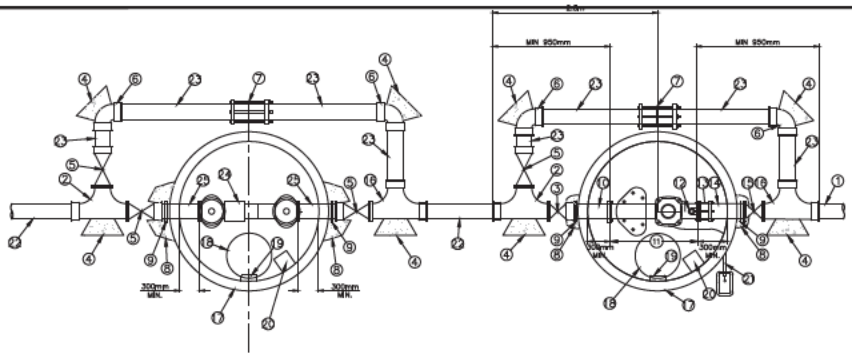
CLIENT: ISLAND WEST COAST DEVELOPMENT LTD.
2214 McCULLOUGH ROAD, NANAIMO BC V9S 4M8 CANADA
PH. (250) 756-4868

PROJECT: SHOP, WAREHOUSE AND STORAGE
200 TENTH TREET, NANAIMO BC

TITLE: ONSITE SERVICING PROFILE

DESIGN: VG DRAWN: VG CHECK: SL APPR: SL
A & M FILE: 18-5090
DRAWING DATE: JUNE 2019
PROJECT NO. -
SCALE: HORZ. 1:250 VERT. 1:25
DRAWING NO. -
A & M DRAWING NO. 18-5090 - 08
SHEET NO. 08 OF 11
REV. 01

0 5 1:500 25m

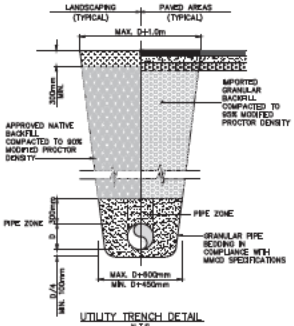


1. 150mm∅ PVC DR18 WATER SERVICE
2. 150mm∅ x 150mm∅F x 150mm∅F TEE
3. 150mm∅ FxH GATE VALVE
4. CONCRETE THRUST BLOCK. SEE NANAIMO SPECS. 5.09.3.1
5. 150mm∅ FxH GATE VALVE (CLOSED/LOCKED)
6. 150mm∅ HxH 90° BEND
7. 150mm∅ COUPLING
8. MASS CONCRETE THRUST BLOCK
9. 200mm∅ EPOXY COATED STEEL THRUST RING
10. 150mm∅ FxH EPOXY COATED STEEL SPOOL PIECE C/W THRUST RING (750mm MINIMUM)
11. SENSUS 150# OMNI F2 PIRE/DOMESTIC METER ASSEMBLY WITH RADIO READ TRANSMITTER
12. TEST PORT FOR LOCKING VALVE
13. 150mm∅ FLANGE COUPLING ADAPTER
14. 150mm P.E.xF EPOXY COATED STEEL SPOOL PIECE C/W THRUST RING (950mm MINIMUM)
15. 150mm∅ FxF GATE VALVE
16. 150mm∅H x 150mm∅F x 150mm∅H TEE
17. 1800mm∅ STANDARD PRECAST MANHOLE AS PER CITY OF NANAIMO STANDARD DRAWING M-11A BUT WITH 300mm THICK CONCRETE BASE TROWEL FINISHED AND SLOPED TO SUMP @ MINIMUM 2%
18. 1800mm∅ CONCRETE LID (H20) DESIGNED TO SUPPORT HIGHWAY LOADING TO SUIT 3 PIECE MANHOLE FRAME & COVER
19. 20mm∅ GALVANIZED STEEL LADDER RUNGS @ 300mm O/C CAST IN WALL
20. 300mm x 300mm x 200mm DEEP SUMP
21. 50mm∅ R.P.V.C. ELECTRICAL DUCT
22. 150mm∅ PVC DR18 MAIN ONSITE
23. 150mm∅ PVC DR18 BYPASS PIPE
24. 150mm∅ (6") WATTS 757 OSY DOUBLE CHECK VALVE ASSEMBLY
25. 150mm∅ PVC DR18 MAIN ONSITE C/W FLANGE COUPLING

NOTES:

1. ONLY PRODUCTS APPROVED BY THE DIRECTOR OF ENGINEERING AND PUBLIC WORKS AND LISTED IN THE CITY OF NANAIMO APPROVED PRODUCTS LIST ACCEPTED FOR INSTALLATION. ONLY UL LISTED AND FM APPROVED PRODUCTS APPROVED FOR FIRE LINE SERVICE.
2. METER AND DOUBLE CHECK ASSEMBLIES SUPPORTED BY STANDEN MODEL S92 STEEL PIPE SUPPORTS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
3. CONCRETE THRUST BLOCKING AND JOINT RESTRAINTS INSTALLED AS NOTED IN ACCORDANCE WITH THE CITY OF NANAIMO STANDARDS. SEE 5.09.3.1
4. EXTERIOR WALLS OF CHAMBER ARE WATERTIGHT. INSIDE WALLS ARE PAINTED WITH TWO COATS OF WHITE SOLUBLE CEMENT PAINT MANUFACTURED FOR THE PURPOSE OF SEALING CONCRETE
5. METER SET 0.6m ABOVE FLOOR LEVEL AND SUPPORTED WITH GALVANIZED STEEL PIPE SUPPORTS.
6. 1.8m CLEAR INTERIOR HEADROOM (FLOOR TO CEILING OF CHAMBER)
7. FOR DOUBLE CHECK VALVE TO BE LOCATED INSIDE THE MECHANICAL ROOMS OF THE PROPOSED BUILDINGS, PLEASE SEE MECHANICAL DRAWINGS FOR DETAILS

DETAILS OF FIRE/DOMESTIC WATER METER SYSTEM & DOUBLE CHECK VALVE ASSEMBLY
N.T.S.



UTILITY TRENCH DETAIL
N.T.S.

NOT FOR CONSTRUCTION

NOTICE TO CONTRACTOR

IT IS THE RESPONSIBILITY OF THE CONTRACTOR'S SURVEYOR TO VERIFY THAT ALL LEGAL SURVEY DIMENSIONS SHOWN ON THE ENGINEERS DRAWINGS AGREE WITH THOSE ON THE REGISTERED LEGAL SURVEY PLAN. SHOULD THERE BE ANY DISCREPANCIES, THEN IMMEDIATELY NOTIFY THE ENGINEER OF RECORD

LEGAL DESCRIPTION: LOT B, SECTION 1, NANAIMO DISTRICT, PLAN EPP17787

B.M. MONUMENT NO: 83H8010 & 83H8011 ELEVATION: 47.19m & 29.88m
LOCATED AT STREET & . AVENUE

REV. NO.	DESCRIPTION	DR.	CH.	DATE	APP.
00	FOR DISCUSSION	VG	SL	2019JUN14	SL
01	ISSUED FOR DEVELOPMENT PERMIT	CL	SL	2019SEP23	SL

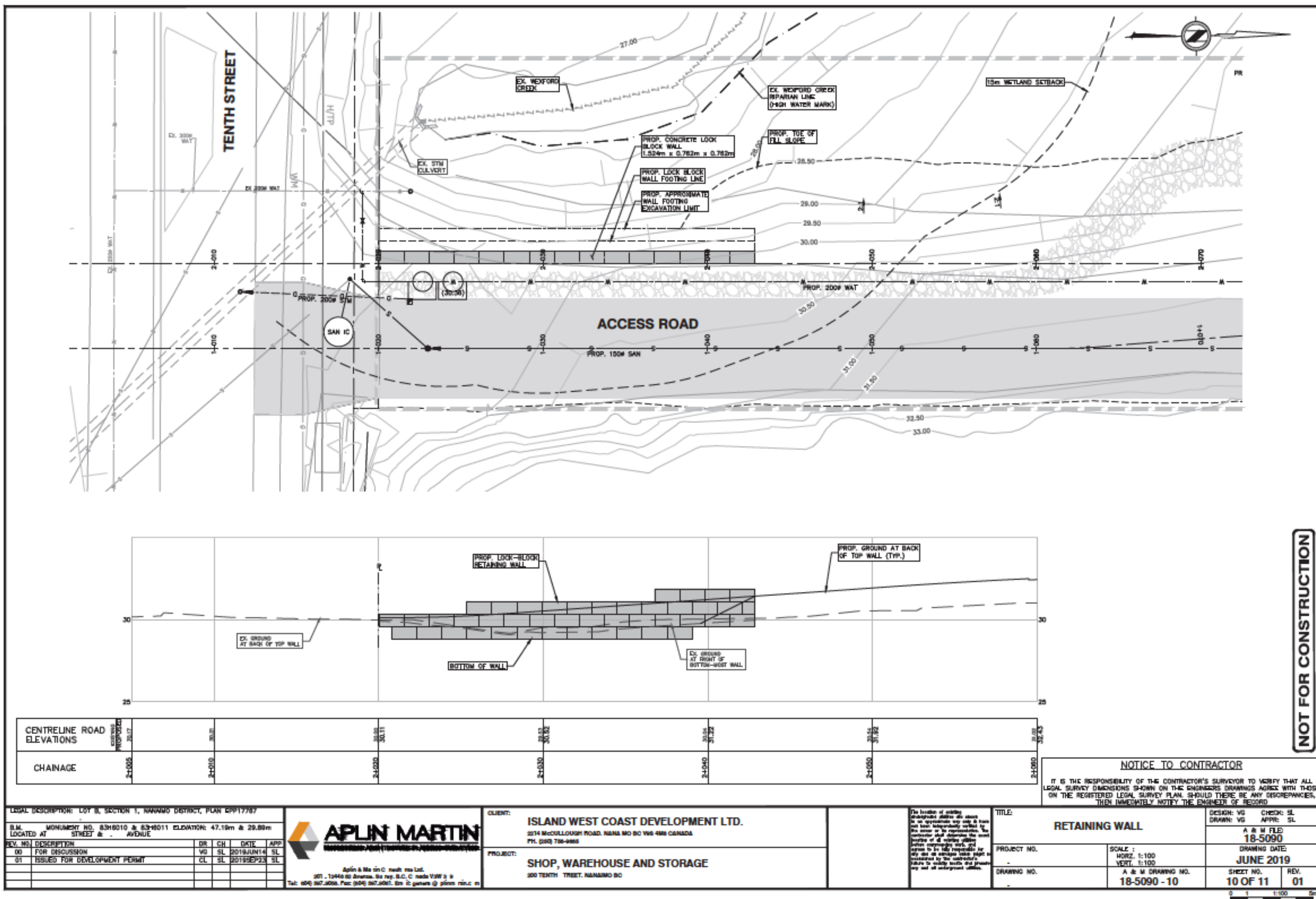
APLIN MARTIN

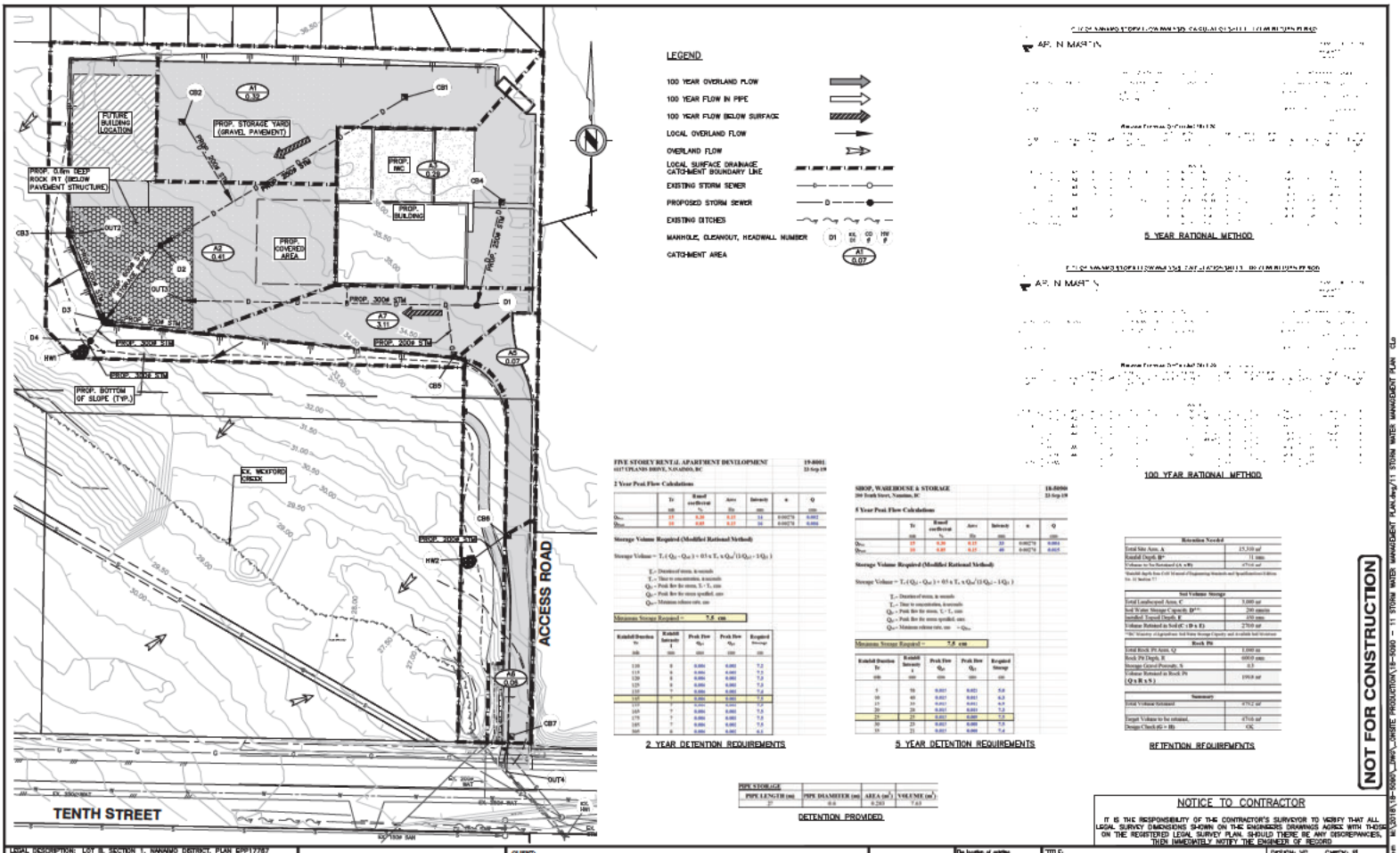
CLIENT: ISLAND WEST COAST DEVELOPMENT LTD.
2214 McCULLOUGH ROAD, NANAIMO BC V9S 4M8 CANADA
PH. (250) 756-4868

PROJECT: SHOP, WAREHOUSE AND STORAGE
300 TENTH STREET, NANAIMO BC

TITLE: ONSITE SERVICING DETAILS

PROJECT NO. -	SCALE: HORZ. AS SHOWN VERT.	DESIGN: VG DRAWN: VG CHECK: SL APPR: SL
DRAWING NO. -	A & M DRAWING NO. 18-5090 - 09	A & M FILE: 18-5090
	SHEET NO. 09 OF 11	DRAWING DATE: JUNE 2019
		REV. 01


TENTH STREET
ACCESS ROAD
EX. WEXFORD CREEK
EX. WEXFORD CREEK RIPARIAN LINE (HIGH WATER MARK)
15m WETLAND SETBACK
PROP. CONCRETE LOCK BLOCK WALL 1.524m x 0.762m x 0.762m
PROP. TOE OF FILL SLOPE
EX. STM CULVERT
PROP. LOCK BLOCK WALL FOOTING LINE
PROP. APPROXIMATE WALL FOOTING EXCAVATION LIMIT
PROP. 200ø WAT
PROP. 150ø SAN
SAN IC
PROP. LOCK-BLOCK RETAINING WALL
PROP. GROUND AT BACK OF TOP WALL (TYP.)
EX. GROUND AT BACK OF TOP WALL
BOTTOM OF WALL
EX. GROUND AT FRONT OF BOTTOM-MOST WALL
CENTRELINE ROAD ELEVATIONS
CHAINAGE
2+005
2+010
2+020
2+030
2+040
2+050
2+060
NOT FOR CONSTRUCTION
NOTICE TO CONTRACTOR
IT IS THE RESPONSIBILITY OF THE CONTRACTOR'S SURVEYOR TO VERIFY THAT ALL LEGAL SURVEY DIMENSIONS SHOWN ON THE ENGINEERS DRAWINGS AGREE WITH THOSE ON THE REGISTERED LEGAL SURVEY PLAN. SHOULD THERE BE ANY DISCREPANCIES, THEN IMMEDIATELY NOTIFY THE ENGINEER OF RECORD
LEGAL DESCRIPTION: LOT B, SECTION 1, NANAIMO DISTRICT, PLAN EPP17767
B.M. MONUMENT NO. 83H6010 & 83H6011 ELEVATION: 47.19m & 29.89m
REV. NO. DESCRIPTION DR CH DATE APP
00 FOR DISCUSSION VG SL 2019JUN14 SL
01 ISSUED FOR DEVELOPMENT PERMIT CL SL 2019SEP23 SL
APLIN MARTIN
CLIENT: ISLAND WEST COAST DEVELOPMENT LTD.
PROJECT: SHOP, WAREHOUSE AND STORAGE
TITLE: RETAINING WALL
DESIGN: VG CHECK: SL
DRAWN: VG APPR: SL
A & M FILE 18-5090
SCALE: HORZ. 1:100 VERT. 1:100
DRAWING DATE: JUNE 2019
A & M DRAWING NO. 18-5090 - 10
SHEET NO. 10 OF 11
REV. 01



LEGAL DESCRIPTION: LOT B, SECTION 1, NANAIMO DISTRICT, PLAN EPP17787

B.M. MONUMENT NO. 83H8010 & 83H8011 ELEVATION: 47.19m & 29.88m
LOCATED AT STREET & . AVENUE

REV. NO.	DESCRIPTION	DR	CH	DATE	APP
00	FOR DISCUSSION	VG	SL	2019JUN14	SL
01	ISSUED FOR DEVELOPMENT PERMIT	CL	SL	2019SEP23	SL

APLIN MARTIN

CLIENT: ISLAND WEST COAST DEVELOPMENT LTD.
2214 McCULLOUGH ROAD, NANAIMO BC V9S 4M8 CANADA
PH. (250) 756-0355

PROJECT: SHOP, WAREHOUSE AND STORAGE
200 TENTH STREET, NANAIMO BC

TITLE: STORM WATER MANAGEMENT PLAN

DESIGN: VG DRAWN: VG CHKD: SL APPR: SL

A & M FILE: 18-5090

PROJECT NO. -

SCALE: HORIZ. 1:500 VERT. N/A

DRAWING DATE: JUNE 2019

DRAWING NO. -

A & M DRAWING NO. 18-5090 - 11

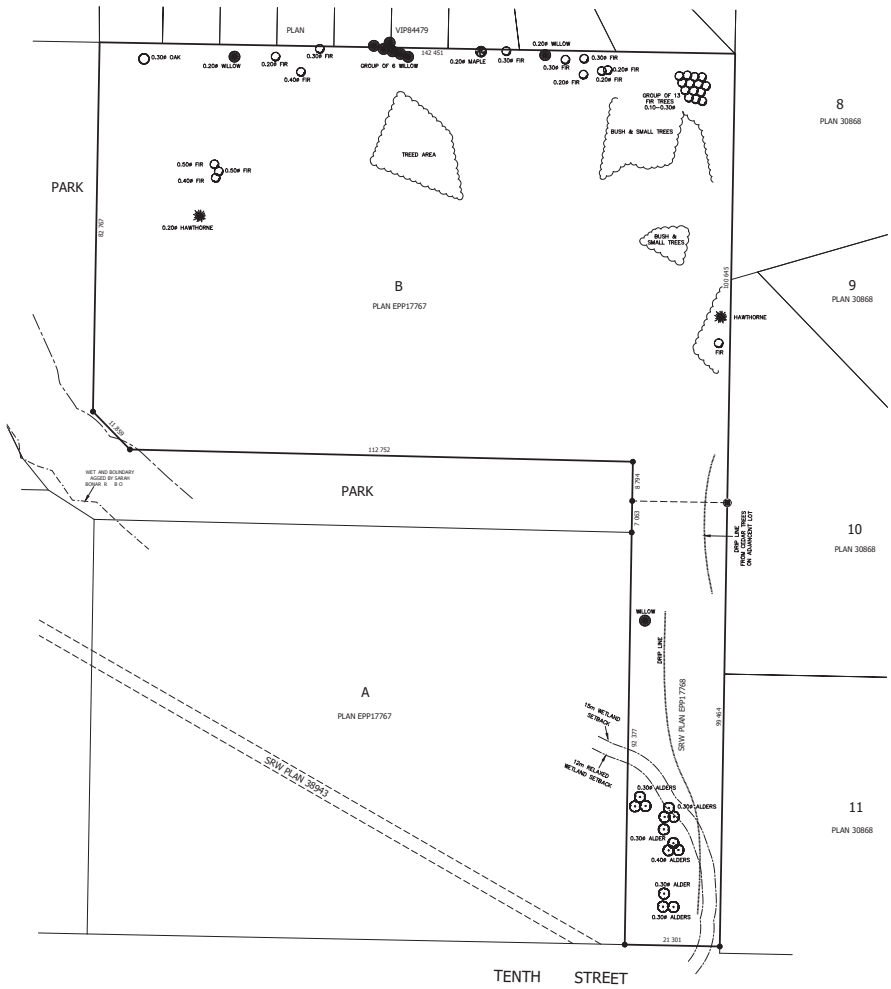
SHEET NO. 11 OF 11

REV. 01

0 5 1:500 25m

FIGURE 3

TREE PLAN
WILLIAMSON & ASSOCIATES PROFESSIONAL SURVEYORS



N

SCA E 1 400
0 5 10 20 metres

LEGEND
TREE INE / BUSH INE
DRI INE
HAWTHORNE
OAK
WI OW
A DER
MA E
R

NO	DATE	REVISION
00	JU Y 17 2019	RST ISSUE

GENERA NOTES

DISTANCES AND E EVATIONS ARE IN METRES E EVAT ONS ARE DERIVED ROM INTEGRATED SURVEY CONTRO MONUMENT 83H6010 OCATED AT THE INTERSECT ON O TENTH STREET AND DOUG AS AVENUE

THIS AN UR ORTS TO OSITION ON Y THE ACTUA AND / OR RO OSED IM ROVEMENT(S) SHOWN RE ATIVE TO ON Y THE BOUNDARIES SHOWN O OR A URTENANT TO THE SUBJECT ARCE (S)

THIS AN ROVIDES NO WARRANTY OR RE RESENTAT ON WHATSOEVER W TH RES ECT TO THE OCAT ON O ANY OTHER ACTUA OR RO OSED IM ROVEMENT(S) RE ATIVE TO ANY BOUNDARY O OR A URTENANT TO THE SUBJECT ARCE (S)

IE D SURVEY CDM ETED JU Y 5 2019

OT A SGNMENT DER VED ROM E D SURVEY AND AN E 17767

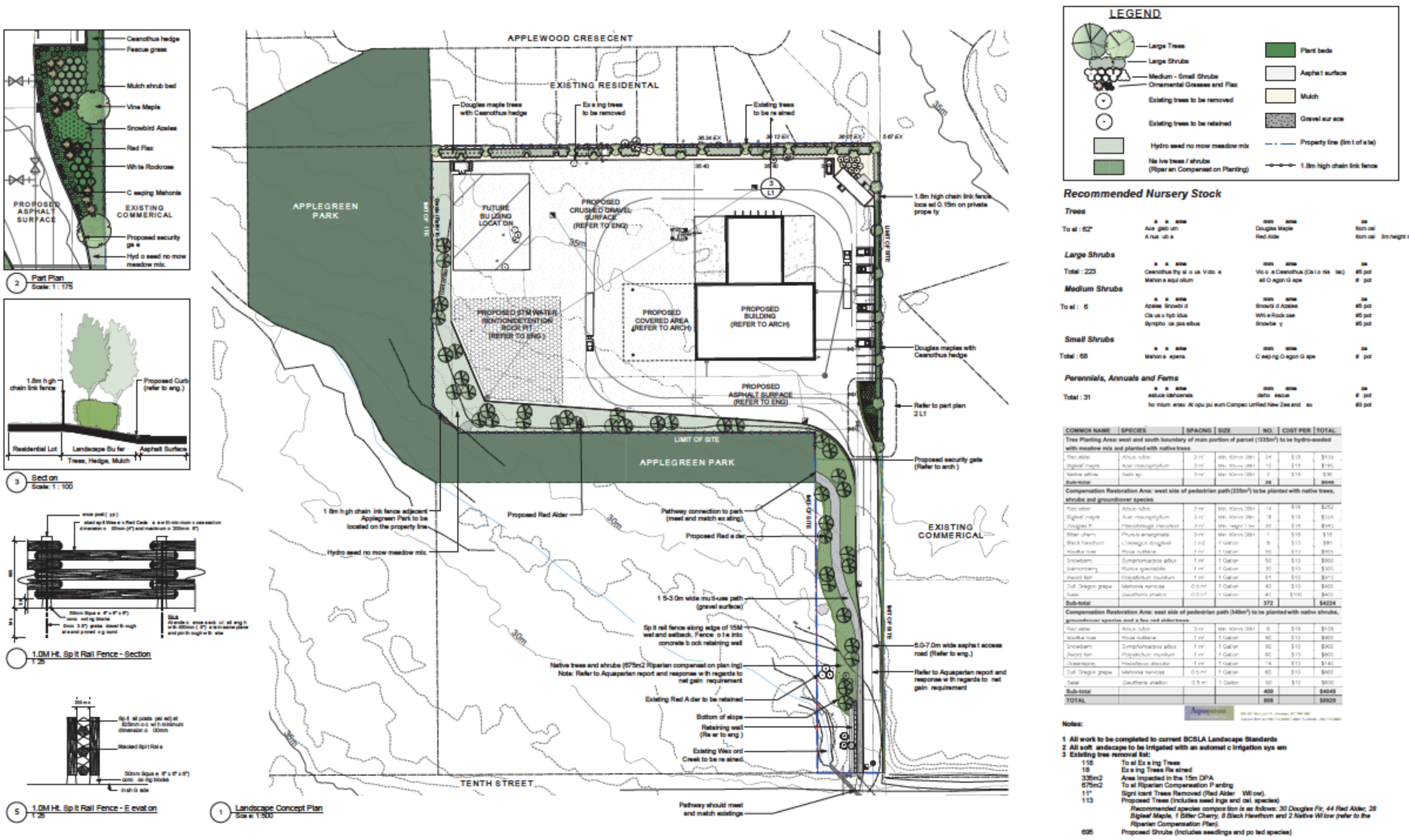
THIS ARCE MAY BE SUBJECT TO REG STERED CHARGES E EMENTS
- COVENANTS CA2476751 CA2476753 & CA2476756
- STATUTORY RIGHT O WAYS M5823 & CA2476761
THIS AN DOES NOT UR ORT TO VERI Y CON ANCE WITH THE RESTRICTIONS THEREIN

PROJEC	200 TENTH STREET LOT B, SECTION 1, NANAIMO DISTRICT, PLAN EPP17767
CLIEN	ISLAND WEST COAST DEVELOPMENT
DRAWING	TREE PLAN
SCA E	1 400
DRAWN	CH
I E	18071-2 B 17096
SHEET	I O 1

WILLIAMSON & ASSOCIATES
PROFESSIONAL SURVEYORS

FIGURE 4

LANDSCAPE PLAN
LADR LANDSAPE ARCHITECTS LTD.



Landscape Concept Plan - 200 Tenth St. Warehouse

LADR LANDSCAPE ARCHITECTS

APPENDIX A

SITE PHOTOGRAPHS

PHOTO SHEET 1

Photo 1. Looking toward the driveway entrance on Tenth Street. (January 2019)

Photo 2. View from the entrance of the riparian area of Wexford Creek (wetland reach). (June 2019)

Photo 3. Facing south from the driveway showing the riparian area of the wetland with a tree canopy of mostly red alder.

Photo 4. Looking across the Wexford Creek wetland located on the west side of the driveway into the property.

Photo 5. The wetland is dominated by a stand of red alder trees with salmonberry in the understory.

PHOTO SHEET 2

Photo 6. Panoramic view from the middle of the driveway showing the red alder stand where the Significant trees are located (red alders DBH ≥30cm) and the location of the proposed fill and retaining wall.

Photo 7. Panoramic view from the north end of the driveway showing the location of the Significant Sitka willow tree (multi-stemmed with DBH 26cm).

PHOTO SHEET 3

Photo 8. Most of the parcel was previously cleared of vegetation and topsoil.

Photo 9. Several piles of waste and topsoil are found within the site.

Photo 10. Wexford Creek wetland next to the southwest end of the parcel has a poorly defined flow of water but saturated soils and aquatic vegetation extending south.

Photo 11. The area appears to have once been used for farming evidenced by old fence posts and barbed wire. The saturated soils of the wetland southwest of the subject parcel appear to have been driven over by off-road vehicles forming ruts where water is ponding.

APPENDIX B

TREE INVENTORY &
TREE REPLACEMENT REQUIREMENTS

200 Tenth Street Tree Inventory				Total Replacement Requirement
Species (Coniferous)		**# & Size DBH (cm)**		
	6 to 30cm	**30.1 to 79.9cm**	**80cm+**	
Douglas fir	55 Remove / 5 Retain	2 Remove	0	59 (min height 1.5m)

Species (Deciduous)		**# & Size DBH (cm)**		
	6 to 30cm	**30.1 to 60cm**	**>60.1cm**	
Red alder	14 Remove	10 Remove / 3 Retain		34 (min 60mm DBH)
Bigleaf maple	7 Remove / 2 Retain		1 Retain	7 (min 60mm DBH)
Bitter cherry	1 Remove / 5 Retain			1 (min 60mm DBH)
English hawthorn	8 Remove			8 (min 60mm DBH)
Native willow	2 Remove / 2 Retain			2 (min 60mm DBH)
Non-native oak		1 Remove		2 (min 60mm DBH)

Total number trees cut	**100**
Total Significant trees cut	**11**
Tree Replacement Requirement	113 trees: 59 Douglas fir, 34 red alder, 7 bigleaf maple, 1 bitter cherry, 8 black hawthorn, 2 native willow, 2 oak