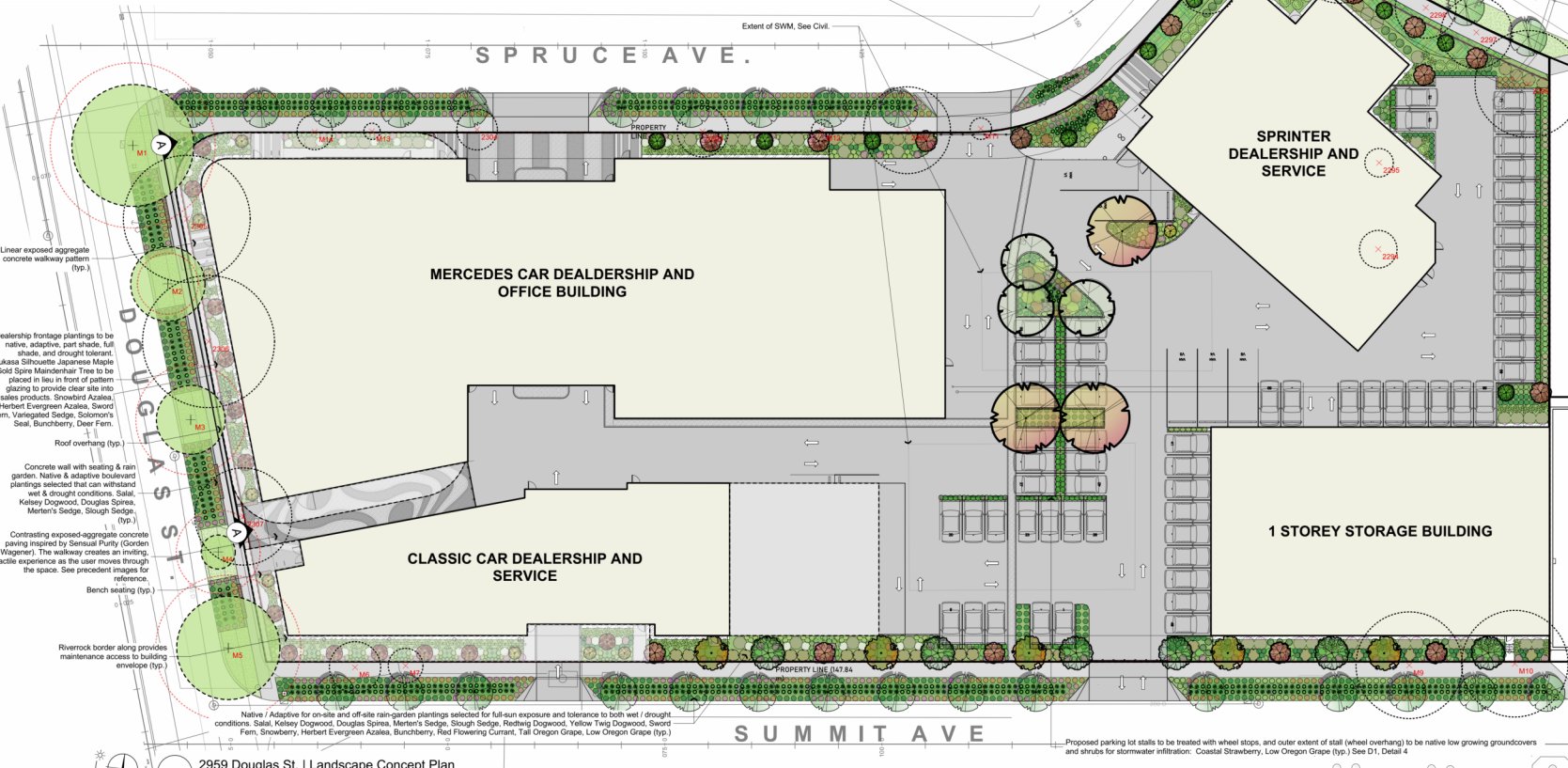


MATERIALS LEGEND

- Planting Bed
- Exposed Aggregate Concrete - Colour: Charcoal
- Exposed Aggregate Concrete - Colour: Natural
- 1/2" Crushed Stone Maintenance Pathway
- Grass Lawn
- Road - See Civil
- Broom Finish Concrete - Colour: Natural
- Native Meadow Seed Mix
- Rain Garden

Northeast low-traffic zone to feature native and adaptive plantings that are part sun, shade, and drought tolerant. Larger planting beds and understorey areas beneath existing trees to be restored with a native meadow mix. Pacific Rhododendron, Evergreen Huckleberry, Tall Oregon Grape, Red Flowering Currant, Low Oregon Grape, Salal, Sword Fern, Kelsey Dogwood, Coastal Strawberry, Bathup Rose, Snowberry

Native / Adaptive for on-site and off-site rain-garden plantings selected for full-sun, part-sun exposure and tolerance to both wet / drought conditions. Salal, Kelsey Dogwood, Douglas Spirea, Merten's Sedge, Slough Sedge, Red Twig Dogwood, Yellow Twig Dogwood, Vancouver Jade Kinricknick (typ.)



NOTE
Proposed rain gardens & seating walls along Douglas St. frontage to be modified if in conflict with existing trees critical root infrastructure.



Recommended Nursery Stock

Trees	Botanical Name	Common Name	Size	
On Site Total: 69	<i>Acer palmatum</i> 'Tokusa Silhouette'	Tokusa Silhouette Japanese Maple	60m cal.	
Off Site Total: 29	<i>Acer glabrum</i> 'Bowhall'	Bowhall Red Maple	60m cal.	
	<i>Betula nigra</i> 'Dura Heart'	River Birch	60m cal.	
	<i>Carpinus betulus</i> 'Frans Fontaine'	Columnar Hornbeam	60m cal.	
	<i>Grisea baileyi</i> 'Gold Spire'	Gold Spire Maidenhair Tree	60m cal.	
	<i>Liquidambar styraciflua</i> 'Slender Silhouette'	Columnar Sweet Gum	60m cal.	
	<i>Quercus robur</i> 'Fastigiat'	Pyramidal English Oak	60m cal.	
	<i>Zelkova serrata</i> 'Green Vase'	Japanese Zelkova	60m cal.	
Large Shrubs				
Total: 11	<i>Botanical Name</i>	<i>Common Name</i>	<i>Size</i>	
	<i>Comus stolonifera</i> 'Flavifram'	Redwing Dogwood	#3 pot	
	<i>Comus stolonifera</i> 'Flavifram'	Yellowwing Dogwood	#3 pot	
Medium Shrubs				
Total: 281	<i>Botanical Name</i>	<i>Common Name</i>	<i>Size</i>	
	<i>Azalea</i> 'Snoebird'	Snoebird Azalea	#3 pot	
	<i>Mahonia aquifolium</i>	Tall Oregon Grape	#3 pot	
	<i>Rhododendron maulandii</i>	Pacific Rhododendron	#3 pot	
	<i>Ribes sanguineum</i>	Red Flowering Currant	#3 pot	
	<i>Rosa gymnocarpa</i>	Bathup Rose	#3 pot	
	<i>Symphoricarpos albus</i>	Snowberry	#3 pot	
	<i>Vaccinium ovatum</i>	Evergreen Huckleberry	#3 pot	
Small Shrubs				
ID Total: 1256	<i>Quantity</i>	<i>Botanical Name</i>	<i>Common Name</i>	<i>Size</i>
		<i>Azalea japonica</i> 'Herbert'	Herbert Evergreen Azalea	#1 pot
		<i>Comus stolonifera</i> 'Kelsey'	Kelsey Dogwood	#1 pot
		<i>Gaultheria shallon</i>	Salal	#1 pot
		<i>Mahonia nervosa</i>	Low Oregon Grape	#1 pot
		<i>Spiraea douglasii</i>	Douglas Spirea	#1 pot
Perennials, Annuals and Ferns				
Total: 1200	<i>Botanical Name</i>	<i>Common Name</i>	<i>Size</i>	
	<i>Blechnum aquilinum</i>	Dear Fern	#1 pot	
	<i>Carex lasiocarpa</i>	Variiegated Sedge	#1 pot	
	<i>Carex medialis</i>	Merten's Sedge	#1 pot	
	<i>Carex obovata</i>	Slough Sedge	#1 pot	
	<i>Polyschum murinum</i>	Sword Fern	#1 pot	
	<i>Silene acaulis</i>	Solomon's Seal	#1 pot	
Groundcovers				
Total: 272	<i>Botanical Name</i>	<i>Common Name</i>	<i>Size</i>	
	<i>Actinostaphylos uva-ursi</i> 'Vancouver Jade'	Vancouver Jade Kinricknick	#1 pot	
	<i>Comus canadensis</i>	Bunchberry	#1 pot	
	<i>Fragaria chiloensis</i>	Coastal Strawberry	#1 pot	

- Notes:**
- All work to be completed to current (CLS) Canadian Landscape Standards
 - All soft landscape to be irrigated with an automatic irrigation system

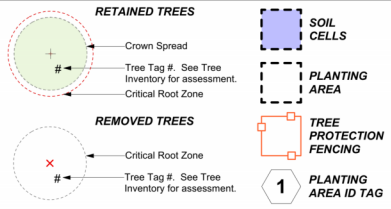


TREE SYMBOL LEGEND

- Japanese Zelkova (Medium)
- Columnar Sweet Gum (Medium)
- River Birch (Medium)
- Columnar Hornbeam (Medium)
- Bowhall Red Maple (Medium)
- Tokusa Silhouette Columnar Japanese Maple (Small)
- Pyramidal English Oak (Medium)
- Gold Spire Maidenhair Tree (Small)
- Boulevard Tree, Species TBD by CoV Parks Department

2959 Douglas St. | Landscape Concept Plan

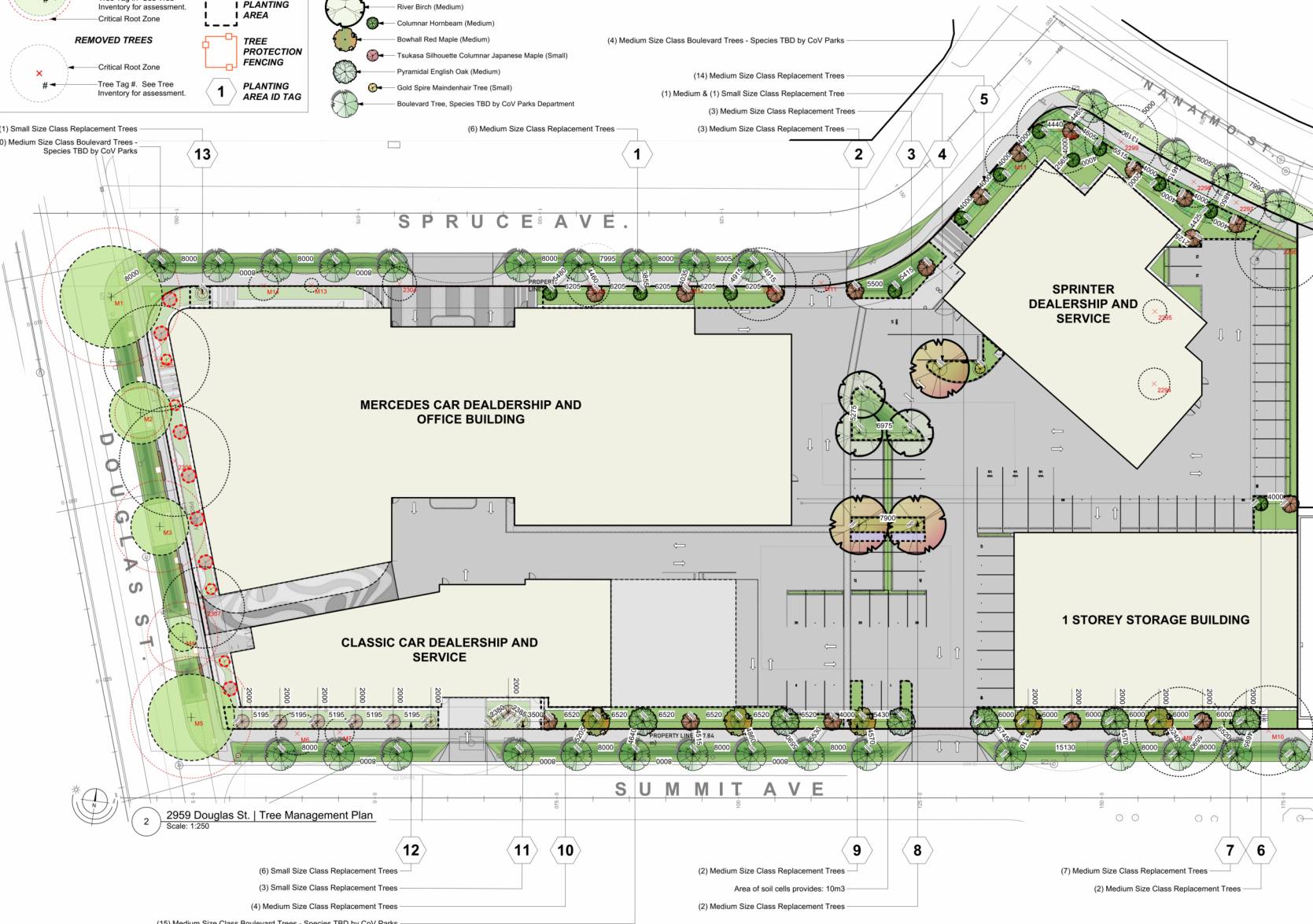
TREE MANAGEMENT LEGEND



TREE SYMBOL LEGEND



- (1) Small Size Class Replacement Trees
- (10) Medium Size Class Boulevard Trees - Species TBD by CoV Parks



2959 Douglas St. | Tree Management Plan
Scale: 1:250

- (6) Small Size Class Replacement Trees
- (3) Small Size Class Replacement Trees
- (4) Medium Size Class Replacement Trees
- (15) Medium Size Class Boulevard Trees - Species TBD by CoV Parks
- (2) Medium Size Class Replacement Trees
- Area of soil cells provides: 10m³
- (2) Medium Size Class Replacement Trees
- (7) Medium Size Class Replacement Trees
- (2) Medium Size Class Replacement Trees

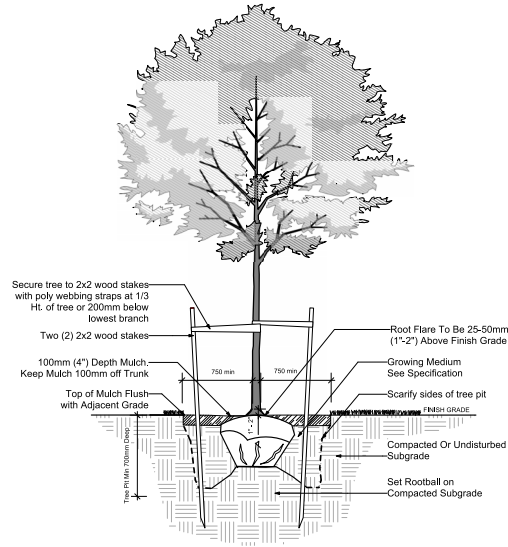
VICTORIA SOIL TABLE

Planting Area ID	Area (M ²)	Soil Volume (M ³)	Estimated Soil Volume	Replacement Tree Proposed						Soil Volume Required (M ³)	
				#Small	#Medium	#Large	Small	Medium	Large	Total	
1	87.00	1	51.69	0	0	0	0	0	0	0	0
2	51.16	1	51.16	0	0	0	0	0	0	0	0
3	45.58	1	45.58	0	0	0	0	0	0	0	0
4	28.4	1	28.4	0	0	0	0	0	0	0	0
5	228.17	1	228.17	0	0	0	0	0	0	0	0
6	39	1	39	0	0	0	0	0	0	0	0
7	116.7	1	116.7	0	0	0	0	0	0	0	0
8	39	1	39	0	0	0	0	0	0	0	0
9	30.64	1	30.64	0	0	0	0	0	0	0	0
10	116.94	1	116.94	0	0	0	0	0	0	0	0
11	25.05	1	25.05	0	0	0	0	0	0	0	0
12	87.67	1	87.67	0	0	0	0	0	0	0	0
13	81	1	81	0	0	0	0	0	0	0	0

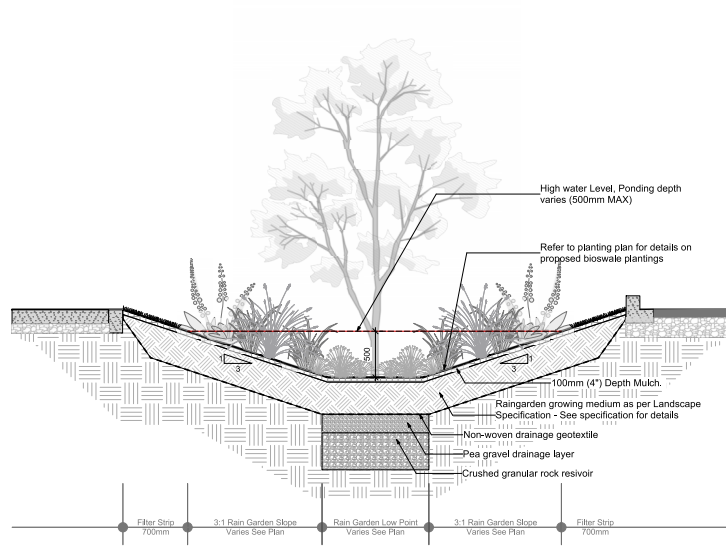
TREE PRESERVATION SUMMARY

Category	Count	Multipplier	Total
A. Protected Trees Removed	9	x 1	A. 9
B. Replacement Trees Proposed per Schedule "E", Part 1	47	x 1	B. 47
C. Replacement Trees Proposed per Schedule "E", Part 2	11	x 0.5	C. 5.5
D. Replacement Trees Proposed per Schedule "E", Part 3	0	x 1	D. 0
E. Total replacement trees proposed (B+C+D) Round down to nearest whole number	68		E. 62
F. Onsite replacement tree deficit (A-E) Record 0 if negative number	0		F. 0
G. Tree minimum on lot	0	x 1	G. 0
H. Protected trees retained (other than specimen trees)	0	x 3	H. 0
I. Specimen trees retained	0	x 3	I. 0
J. Trees per lot deficit (G-(H+I)) Record 0 if negative number	0		J. 0
K. Protected trees removed	0	x 1	K. 0
L. Replacement trees proposed per Schedule "E", Part 1 or Part 3	0	x 1	L. 0
M. Replacement trees proposed from Schedule "E", Part 2	0	x 0.5	M. 0
N. Total replacement trees proposed (L+M) Round down to nearest whole number	0		N. 0
O. Offsite replacement tree deficit (K-N) Record 0 if negative number	0		O. 0
P. Onsite trees proposed for cash-in-lieu. Enter F, or J, whichever is the greater number	0		P. 0
Q. Offsite trees proposed for cash-in-lieu. Enter 0	0		Q. 0
R. Cash-in lieu proposed ((P+Q) x \$2000)	0		R. 0

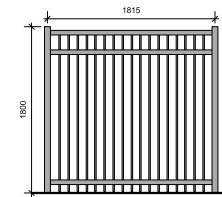
2959 Douglas St. | Tree Management Plan



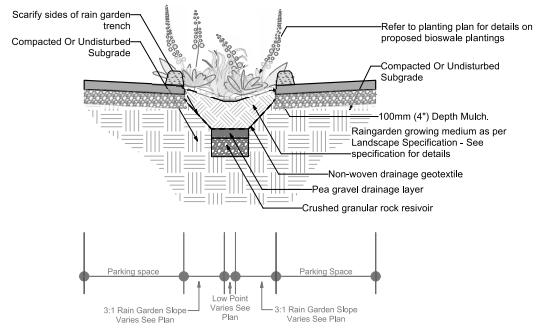
1 Typical Deciduous Tree Planting Detail
Scale: 1:25



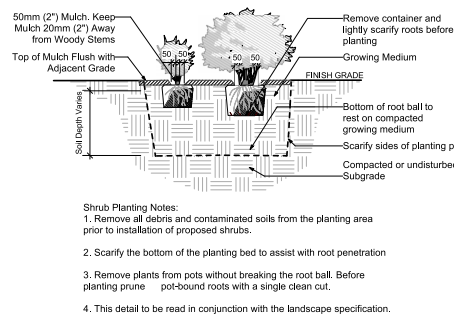
2 Typical Rain Garden Detail
Scale: 1:25



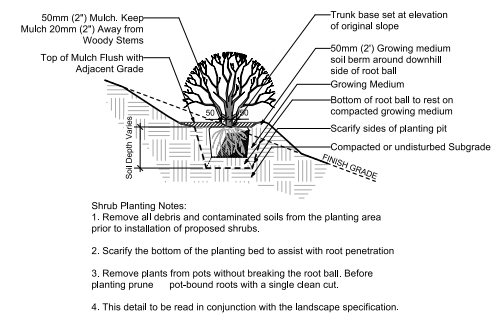
3 1.8m Ht Aluminium Fence
Scale: 1:25



4 Typical Wheel Overhang Planting Treatment
Scale: 1:25

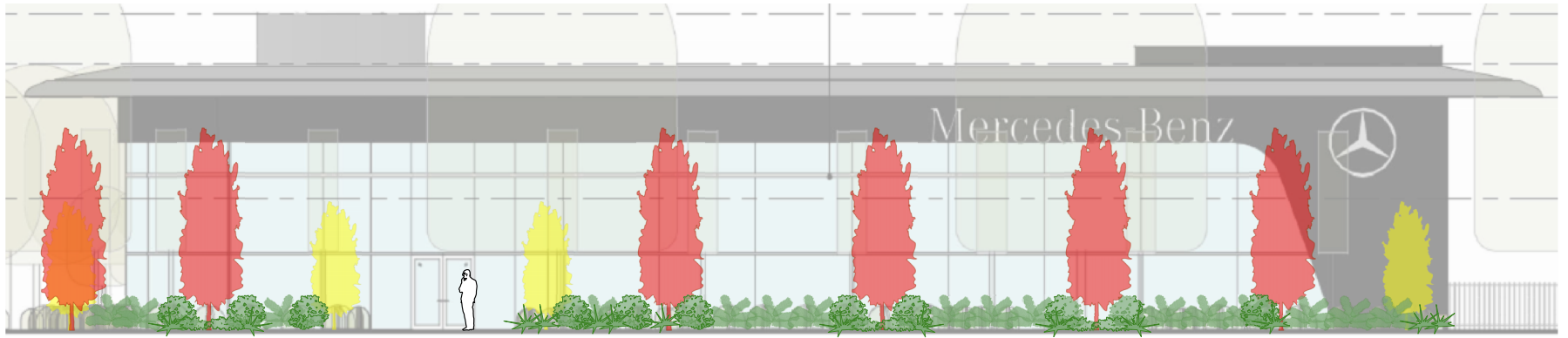


5 Typical Shrub Planting Detail
Scale: 1:25



6 Typical Shrub Planting on slope Detail
Scale: 1:25

2959 Douglas St. | Details



1 Section A - A' - Fall Seasonal Interest
Scale: 1:60



2 Section A - A'
Scale: 1:60

2959 Douglas St. | Sections

PRELIMINARY RAINWATER MANAGEMENT CALCULATIONS

PROPOSED MARRINO SOIL CELLS OR APPROVED ALTERNATIVE TO BE USED AS INFILTRATORS
 - SIZING AS PER CITY OF VICTORIA RAINWATER MANAGEMENT STANDARDS SIZING APPROACH FOR OPEN INFILTRATOR CHAMBER
 - DESIGN MUST MEET CITY OF VICTORIA'S RAINWATER MANAGEMENT STANDARD OF MANAGING 32mm / 24hrs.

REQUIRED AREA OF INFILTRATORS = SIZING FACTOR x IMPERVIOUS CONTRIBUTORY AREA

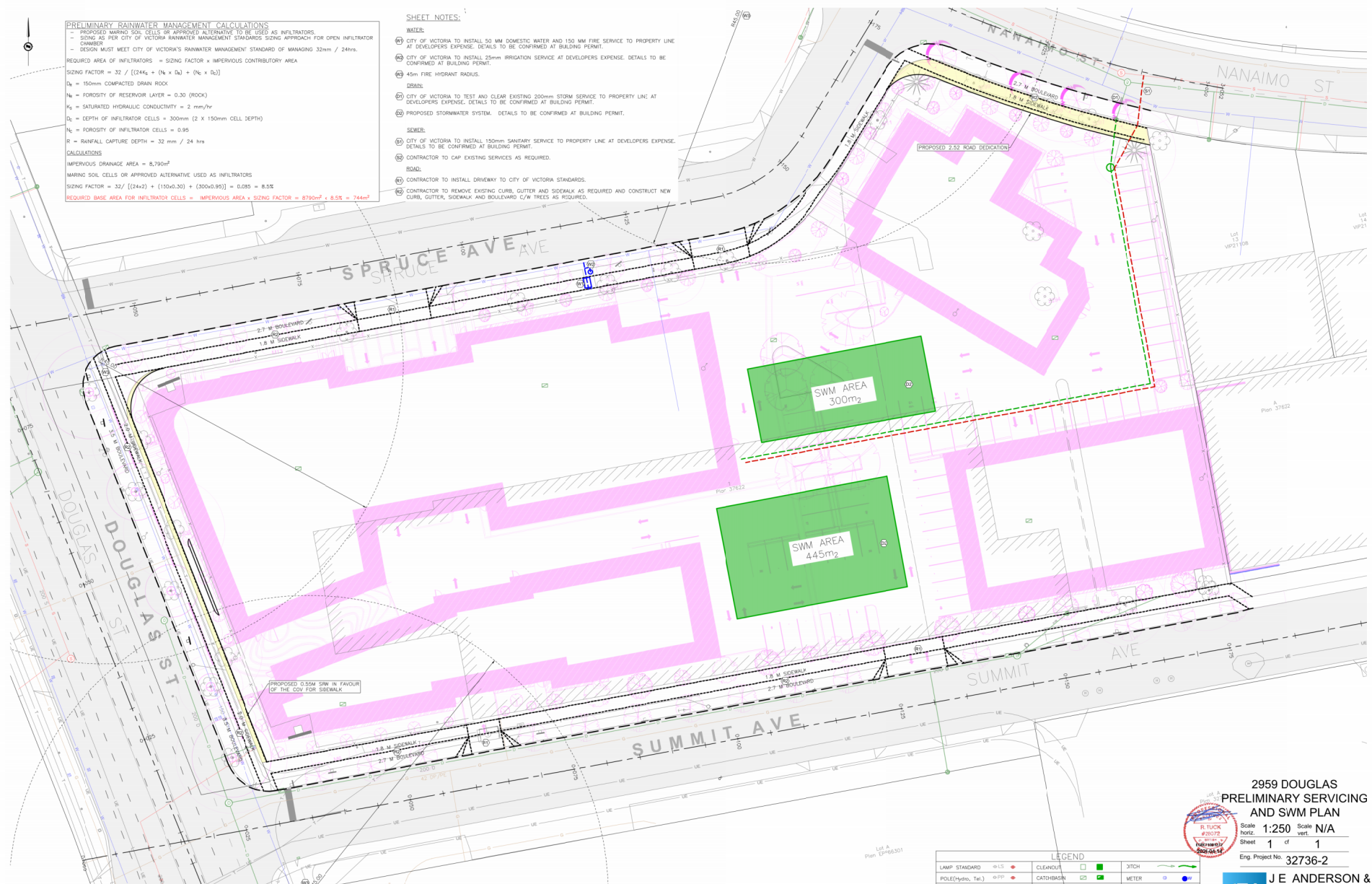
SIZING FACTOR = $32 / [(24K_2 + (K_1 \times D_1) + (K_1 \times D_2))]$

D_1 = 150mm COMPACTED DRAIN ROCK
 K_2 = POROSITY OF RESERVOIR LAYER = 0.30 (ROCK)
 K_1 = SATURATED HYDRAULIC CONDUCTIVITY = 2 mm/hr
 D_2 = DEPTH OF INFILTRATOR CELLS = 300mm (2 X 150mm CELL DEPTH)
 K_1 = POROSITY OF INFILTRATOR CELLS = 0.95
 R = RAINFALL CAPTURE DEPTH = 32 mm / 24 hrs

CALCULATIONS

IMPERVIOUS DRAINAGE AREA = 6,790m²
 MARRINO SOIL CELLS OR APPROVED ALTERNATIVE USED AS INFILTRATORS
 SIZING FACTOR = $32 / [(24 \times 2) + (100 \times 0.30) + (300 \times 0.95)] = 0.295 = 8.5\%$
 REQUIRED BASE AREA FOR INFILTRATOR CELLS = IMPERVIOUS AREA x SIZING FACTOR = 6790m² x 8.5% = 744m²

- SHEET NOTES:**
- WATER:**
- (1) CITY OF VICTORIA TO INSTALL 50 MM DOMESTIC WATER AND 150 MM FIRE SERVICE TO PROPERTY LINE AT DEVELOPERS EXPENSE. DETAILS TO BE CONFIRMED AT BUILDING PERMIT.
 - (2) CITY OF VICTORIA TO INSTALL 25mm IRRIGATION SERVICE AT DEVELOPERS EXPENSE. DETAILS TO BE CONFIRMED AT BUILDING PERMIT.
 - (3) 45m FIRE HYDRANT RADIUS.
- SEWER:**
- (4) CITY OF VICTORIA TO TEST AND CLEAR EXISTING 200mm STORM SERVICE TO PROPERTY LINE AT DEVELOPERS EXPENSE. DETAILS TO BE CONFIRMED AT BUILDING PERMIT.
 - (5) PROPOSED STORMWATER SYSTEM. DETAILS TO BE CONFIRMED AT BUILDING PERMIT.
- ROAD:**
- (6) CONTRACTOR TO CAP EXISTING SERVICES AS REQUIRED.
 - (7) CONTRACTOR TO INSTALL DRIVEWAY TO CITY OF VICTORIA STANDARDS.
 - (8) CONTRACTOR TO REMOVE EXISTING CURB, GUTTER AND SIDEWALK AS REQUIRED AND CONSTRUCT NEW CURB, GUTTER, SIDEWALK AND BOULEVARD C/W TREES AS REQUIRED.



ISSUED FOR DEV. PERMIT

X:_Projects\32736-2 - GAN - 2959 Douglas\05 - Engineering\03 - Drawings & Sketches (Eng)\PRODUCTION - 32736-2 - D1.dwg Plot Date: April 14, 2024



LEGEND	
LAMP STANDARD	Ø15
POLE (Hydro, Tel)	Ø150
U/G WIRING	Ø150
OS	Ø150
WATER	Ø150
SEWER	Ø150
DRAN	Ø150
CLEANDR	Ø150
CATCHBASIN	Ø150
MANHOLE	Ø150
SERVICE RISER	Ø150
MOUNTABLE CURB	Ø150
NON-MOUNT. CURB	Ø150
EDGE ASPHALT	Ø150
MITCH	Ø150
METER	Ø150
TURB	Ø150
VALVE	Ø150
REDUCER	Ø150
HYDRANT	Ø150
AIR VALVE	Ø150

**2959 DOUGLAS
 PRELIMINARY SERVICING
 AND SWM PLAN**

Scale: 1:250
 Scale: N/A
 Sheet: 1 of 1
 Eng. Project No: 32736-2

JEA J E ANDERSON & ASSOCIATES
 SURVEYORS - ENGINEERS
 VICTORIA NANAIMO PARKSVILLE CAMPBELL RIVER
 PHONE: 250-727-2214 info@janderson.com