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TOWN OF DRUMHELLER

WILLOW ESTATES

BERM PACKAGE

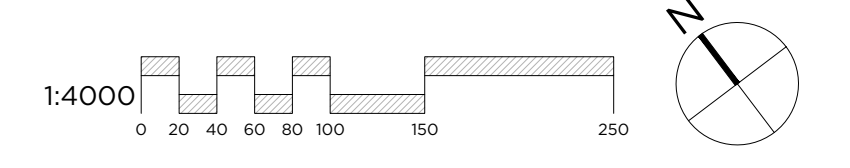
TREE AND SHRUB
LANDSCAPE PLANTING TENDER PACKAGE
ISSUED FOR TENDER

DRAWING LIST

Sheet Number	Sheet Title
L-100	Key Plan
L-101	Legend and Notes
L-200	Planting Plan
L-201	Planting Plan
L-202	Planting Plan
L-203	Planting Plan
L-204	Planting Plan
L-205	7th Street & 7th Avenue SE Planting Plan
L-300	Details

A1 KEY PLAN - WILLOW ESTATES

L-100 Scale 1:4000



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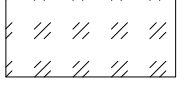


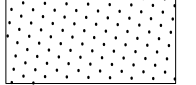

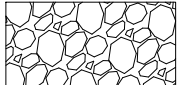


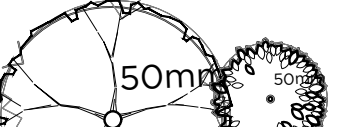

DRUMHELLER RESILIENCY & FLOOD MITIGATION OFFICE
RESILIENCY AND FLOOD MITIGATION PROGRAM

WILLOW ESTATES TREE AND SHRUB
KEY PLAN

Project No. CW2384 Drawing No. L-100 Rev. A
Group WILLOW ESTATES

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Landscape Legend

 **proposed boulder steps**
 **seed mix 1 - wet tolerant mix**
 **seed mix 2A - upland mix**
 **seed mix 3 - top of berm**
 **manicured sod**
 **wood mulch**
 **gravel surface - refer to engineering drawings**
 **rip rap - refer to engineering drawings**
 **existing trees & vegetation - to remain**
 **proposed deciduous tree - refer to planting plans and planting schedule**
 **proposed deciduous tree - refer to planting plans and planting schedule**

REFER TO CONTRACT 1 BERM CONSTRUCTION

Seed Mix Schedule

note: seed mix schedules provided for reference only, for areas requiring repair and rehabilitation as part of this scope of work. refer to specifications in contract 1 - berm construction + sodding/seeding.

- .1 **Wet Tolerant Seed Mix 1** – Below 1:2 year high water mark – Application Rate of 58 kg / ha.

Site Characteristics	
Seeding Method	broadcast
Habitat Type	wetland
Natural Subregion	Dry Mixedgrass
Incorporation Method	ATV Harrow or hand rake
Depth of Incorporation	5 cm to 10 cm

Botanical Name	Common Name	Target Cover	% of Seed Mix (PLS)	Kg Required (PLS)
Deschampsia ceaspitosa	Tufted Hairgrass	25%	3%	1.97
Pascopyrum smithii / Agropyron smithii	Western Wheatgrass	20%	32%	18.60
Bromus carinatus	Mountain Brome	5%	10%	5.68
Elymus trachycaulus / Agropyron trachycaulum var.	Slender Wheatgrass	10%	11%	6.39
Elymus canadensis	Canada Wildrye	15%	23%	13.34
Spartina pectinata	Alkali Cordgrass	25%	21%	11.66

- .1 Cover Crop for Wet Tolerant Seed Mix 1: Add a cover crop of Beckmannia Syzigachne (Slough Grass) at 5kg / ha in areas of highwater erosion prone areas.

- .1 **Upland Seed Mix 2A** – Upland Areas - Application Rate of 58 kg / ha.

Site Characteristics	
Seeding Method	broadcast
Habitat Type	deciduous forest
Natural Subregion	Dry Mixedgrass
Incorporation Method	ATV Harrow or hand rake
Depth of Incorporation	5 cm to 10 cm

Botanical Name	Common Name	Target Cover	% of Seed Mix (PLS)	Kg Required (PLS)
Elymus lanceolatus / Agropyron dasystachyum	Northern Wheatgrass	15%	16%	9.30
Pascopyrum smithii / Agropyron smithii	Western Wheatgrass	20%	30%	17.36
Elymus trachycaulus / Agropyron trachycaulum var.	Slender Wheatgrass	10%	10%	5.97
Bouteloua gracilis	Blue Grama	10%	2%	0.88
Elymus canadensis	Canada Wildrye	10%	14%	8.30
Nassella viridula / Stipa viridula	Green Needlegrass	25%	27%	15.82
Koeleria macrantha	Junegrass	10%	1%	0.58

- .1 Cover Crop for Upland Seed Mix 2: Add a cover crop of Lolium multiflorum (Annual Ryegrass) at 5kg / ha for entirety of Upland Seed Mix areas.

- .1 **Top of Berm Seed Mix 3**– Top of Berm - Application rate of 50 kg/ha.

Site Characteristics	
Seeding Method	Broadcast or manual
Habitat Type	Deciduous forest
Natural Subregion	Dry Mixedgrass
Incorporation Method	ATV Harrow or hand rake
Depth of Incorporation	5 cm to 10 cm

Botanical Name	Common Name	Target Cover	% of Seed Mix (PLS)	Kg Required (PLS)
Elymus lanceolatus / Agropyron dasystachyum	Northern Wheatgrass	23%	46%	22.91
Pascopyrum smithii / Agropyron smithii	Western Wheatgrass	10%	23%	11.16
Bouteloua gracilis	Blue Grama	20%	6%	2.83
Hesperostipa comata / Stipa comata	Needle and Thread	2%	4%	2.13
Poa sandbergii	Sandberg Bluegrass	15%	6%	3.07
Nassella viridula / Stipa viridula	Green Needlegrass	5%	9%	4.24
Koeleria macrantha	Junegrass	23%	4%	2.13
Dalea purpurea	Purple Prairie Clover	2%	2%	1.02

- .1 Cover Crop for Top of Berm Seed Mix 3: Add a cover crop of Lolium multiflorum (Annual Ryegrass) at 5kg / ha for entirety of Top of Berm Seed Mix areas.

Sodding + Seeding Notes

1. any damage or disturbance to existing seeded areas will require repair and rehabilitation by Contractor. Refer to Contract 1 specifications for seed and sod requirements.

Planting Notes

- all plant material shall be installed in accordance with the guidelines and specifications of Drumheller Valley and Preserving & Enhancing the Urban Forest: Standards & Techniques
- plant material list was prepared for estimating purposes only. contractor shall make their own quantity take-offs using drawings to determine quantities - contractor shall report any discrepancies promptly
- stake out locations of trees, shrubs and planting beds; all plants shall be reviewed and approved by Consultant prior to installation; plant material installed without review and approval may require transplanting or relocation as directed by Consultant at no additional cost
- ensure all trees and shrubs are installed outside of berm extents - refer to civil drawings for berm alignment and construction
- contractor shall ensure that all plant material meets utility setback requirements
- all damage and disturbances to adjacent areas shall be repaired to the satisfaction of the Consultant
- slopes > 3:1 and < 2:1 - s150 straw fibre erosion control matting with biodegradable stakes. refer to manufacturers specifications for staking pattern
- slopes > 2:1 - sc150 coconut and straw fibre erosion control matting with biodegradable stakes. refer to manufacturers specifications for staking pattern
- all development and construction activities within 6 meters of existing vegetation must be supervised by an ISA (International Society of Arboriculture) certified arborist
- all pruning of existing vegetation must be supervised by an ISA certified arborist

Planting Schedule

code	botanical / common name	qty	hght	sprd	calp	root	spcg	remarks
acne	acer negundo boxelder maple	22	14m	15m	#15	---	shown	
beoc	betula occidentalis river birch	6	5m	3m	#15	---	shown	
crmo	crataegus x mordenensis 'toba' toba hawthorn	6	3m	2m	75mm	90cm	shown	ornamental, protected location, fireblight susceptible
frpeh	fraxinus pennsylvanica 'Heuver' foothills green ash	4	15m	8m	75mm	90cm	shown	fall color
frpep	fraxinus pennsylvanica 'Patmore' patmore green ash	9	12m	8m	75mm	90cm	shown	susceptible to sun scald
frper	fraxinus pennsylvanica 'Rugby' prairie spire green ash	14	10m	5m	50mm	70cm	shown	
pipug	picea pungens 'glauca' blue colorado spruce	9	12m	5m	2m ht.	90 cm	shown	evergreen
poas	populus x 'assiniboine' assiniboine poplar	16	20m	15m	50mm	70cm	shown	
pode	populus deltoides plains cottonwood	6	30m	20m	50mm	70cm	shown	male variety only
pode	populus deltoides plains cottonwood	6	30m	20m	#15	---	shown	male variety only
potr	populus tremuloides trembling aspen	13	10m	6m	50mm	70cm	shown	very hardy
prvi	prunus virginiana black chokecherry	10	5m	3m	40mm	60cm	shown	ornamental
prvisc	prunus virginiana 'schubert' schubert chokecherry	3	5m	5m	50mm	70cm	shown	
sape	salix pentandra laurel leaf willow	9	15m	15m	#15	---	shown	
sode	sorbus decora showy mountain ash	3	6m	4m	75mm	90cm	shown	fireblight susceptible ornamental

code	botanical / common name	qty	hght	sprd	calp	spcg	remarks
amal	amelanchier alnifolia saskatoon	18	3m	2m	#5	shown	1.5-2.0m O.C. ornamental, edible fruit
amal	amelanchier alnifolia saskatoon	23	3m	2m	#2	shown	1.5-2.0m O.C. ornamental, edible fruit
arme	aronia melanocarpa black chokecherry	36	1.5m	1m	#2	shown	1.0m O.C. native shrub, fall colour
cost	cornus stolonifera / sericea red osier dogwood	94	2m	3m	#1	shown	2.5-3.0m O.C. shade tolerant
elco	elaegnus commutata wolf willow	69	2m	2m	#1	shown	1.5-2.0m O.C.
juco	juniperus communis common juniper	3	0.6m	2.0m	#5	shown	1.5-2.0m O.C. evergreen
phop	physocarpus opulifolius common ninebark	6	2.5m	2m	#2	shown	1.5-2.0m O.C. ornamental
riau	ribes aureum golden flowering currant	12	2m	2m	#2	shown	1.5-2.0m O.C. ornamental, shade tolerant
rhrtr	rhus trilobata lemonade sumac	2	1m	2m	#5	shown	1.5-2.0m O.C.
sabe	salix bebbiana bebb's beaked willow	48	3m	2m	#2	shown	1.5-2.0m O.C. reclamation planting
sain	salix interior sandbar willow	57	2m	2m	#2	shown	1.5-2.0m O.C. reclamation planting



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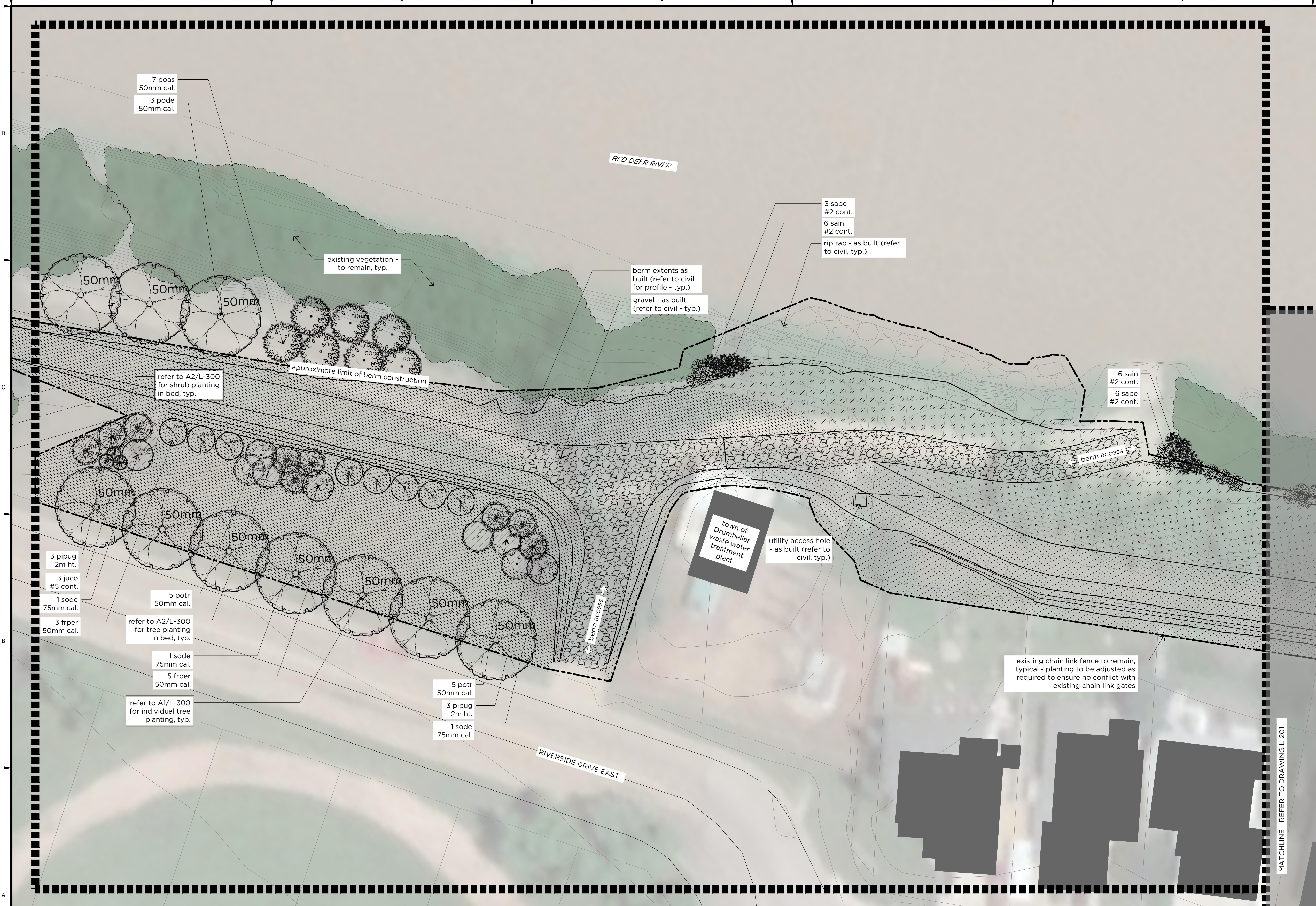
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WILLOW ESTATES TREE AND SHRUB
LEGEND AND NOTES

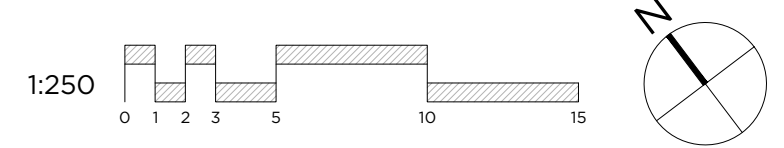
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Group	WILLOW ESTATES				

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A1 PLANTING PLAN

L-200 Scale 1:250



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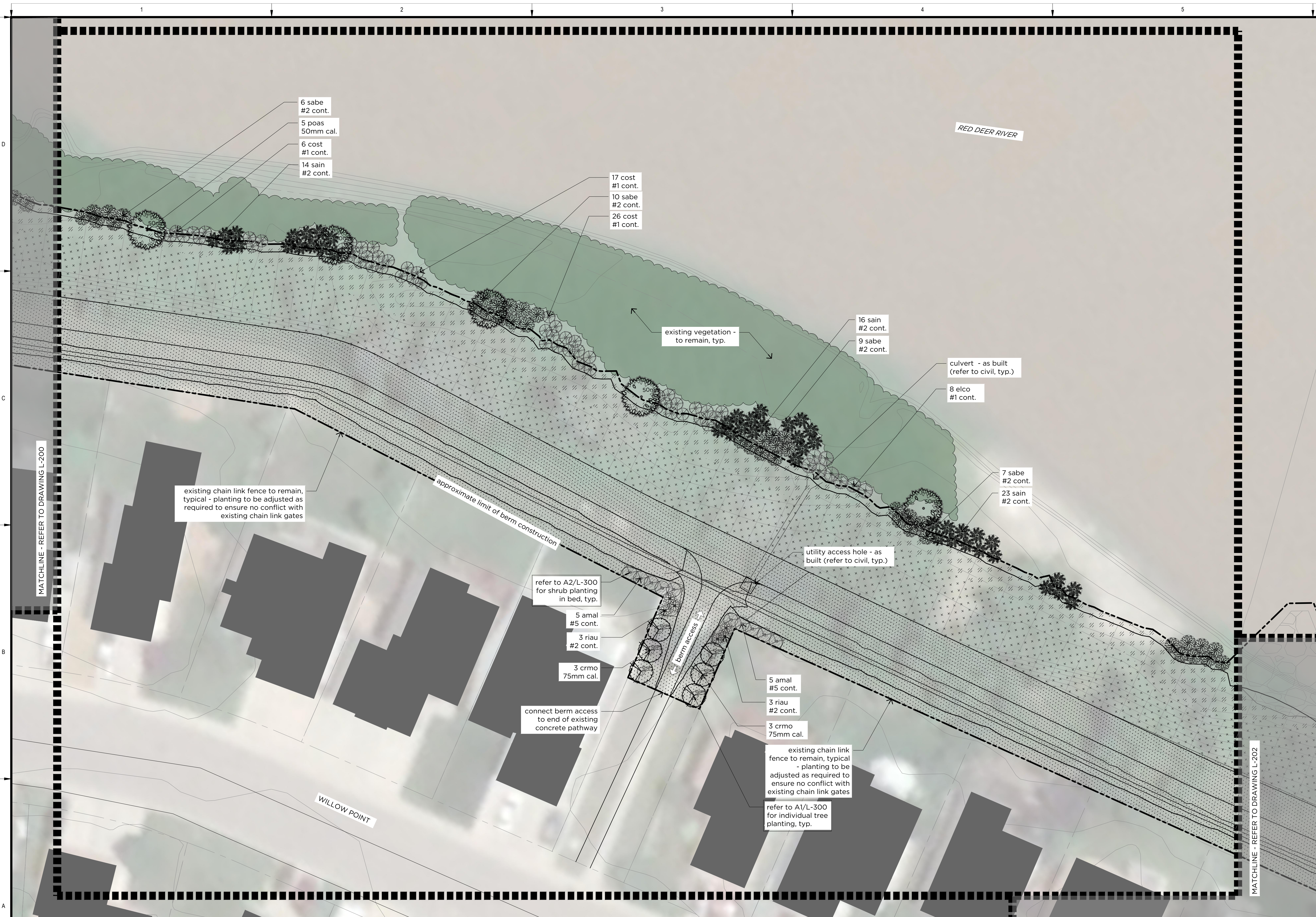
**WILLOW ESTATES TREE AND SHRUB
PLANTING PLAN**

Project No.	CW2384	Drawing No.	L-200	Rev.	A
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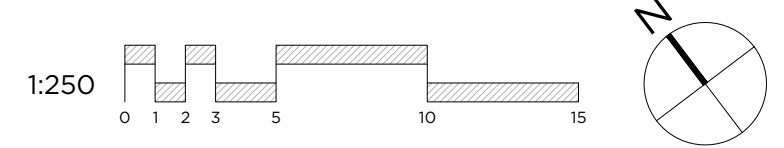
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A1 PLANTING PLAN

L-201 Scale 1:250



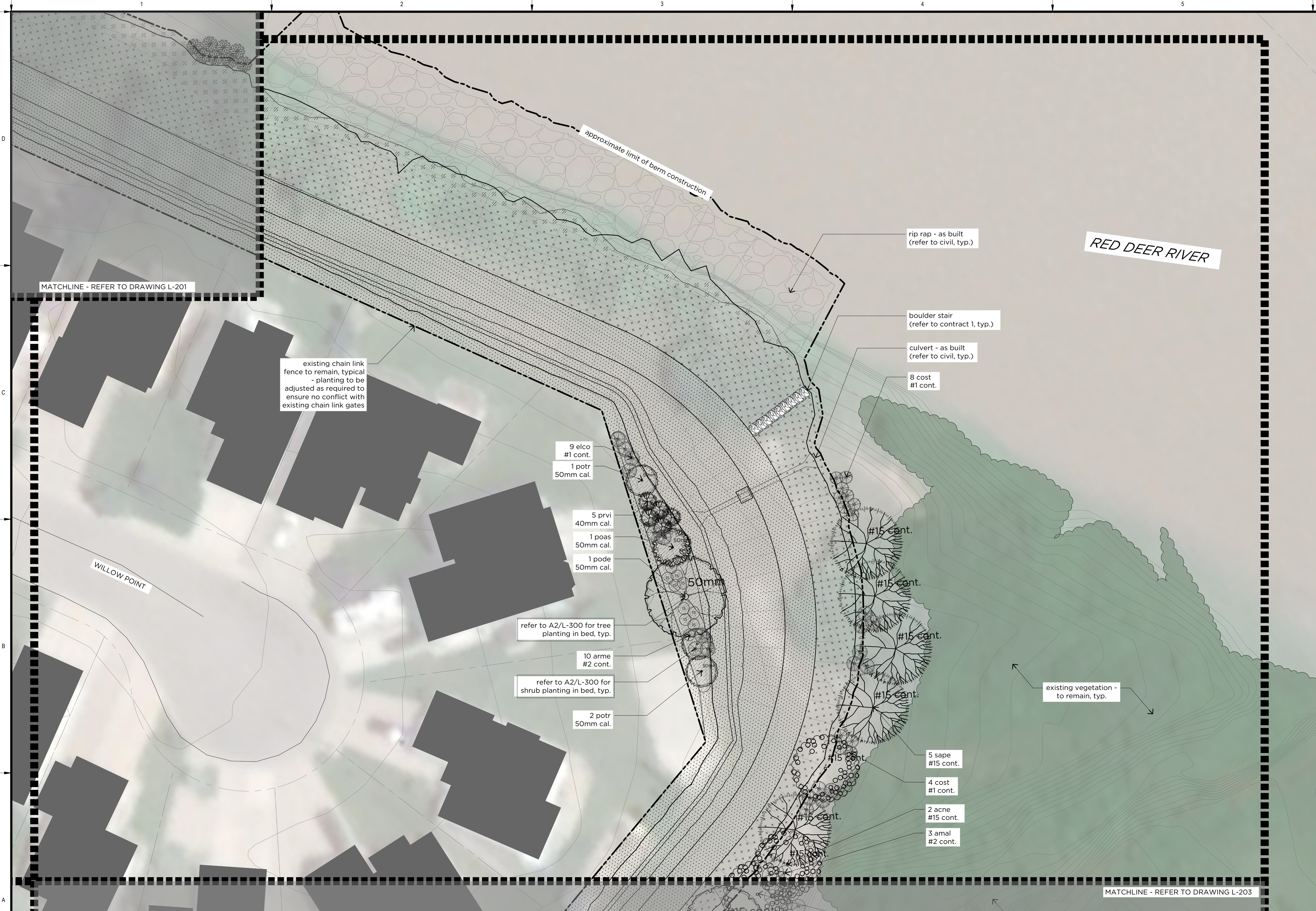
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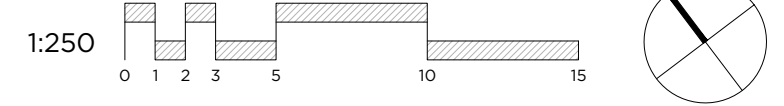
**WILLOW ESTATES TREE AND SHRUB
PLANTING PLAN**

Project No.	CW2384	Drawing No.	L-201	Rev.	A
Group	WILLOW ESTATES				



A1 PLANTING PLAN

L-202 Scale 1:250

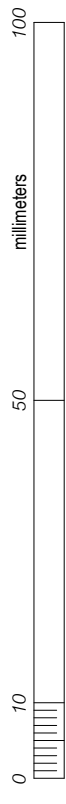


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WILLOW ESTATES TREE AND SHRUB
PLANTING PLAN

Project No. CW2384 Drawing No. L-202 Rev. A
Group WILLOW ESTATES

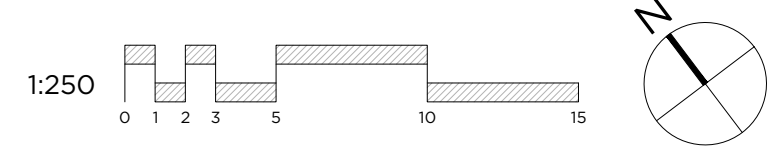


MATCHLINE - REFER TO DRAWING L-202

MATCHLINE - REFER TO DRAWING L-204

A1 PLANTING PLAN

L-203 Scale 1:250



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WILLOW ESTATES TREE AND SHRUB
PLANTING PLAN

Project No.	CW2384	Drawing No.	L-203	Rev.	A
Group	WILLOW ESTATES				

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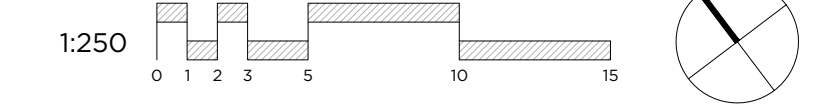
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A1 PLANTING PLAN

L-204 Scale 1:250



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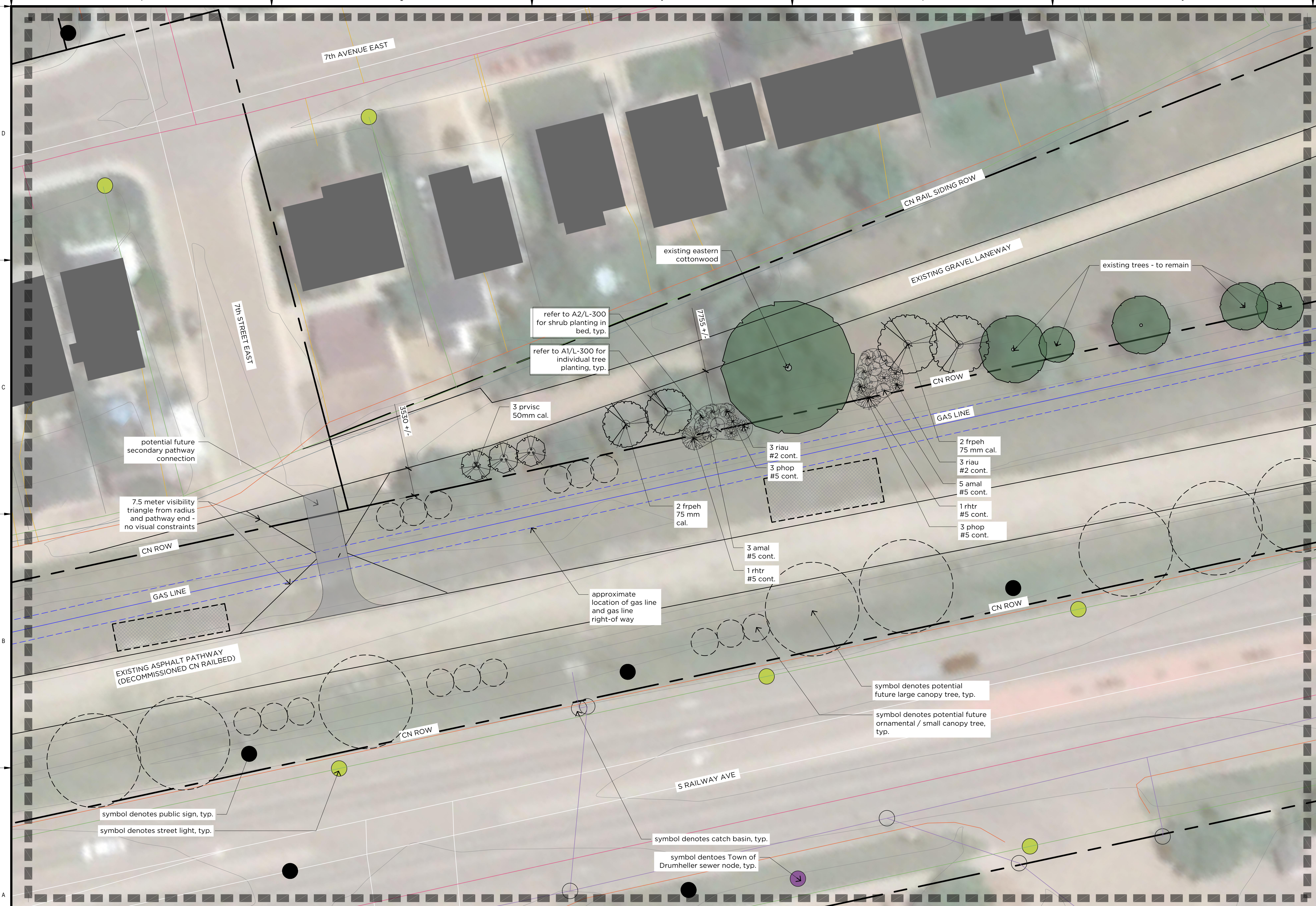
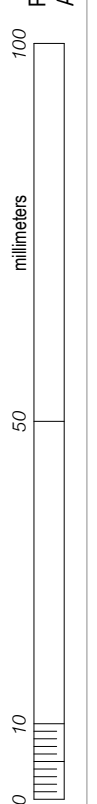
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WILLOW ESTATES TREE AND SHRUB
PLANTING PLAN

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 Group **WILLOW ESTATES**

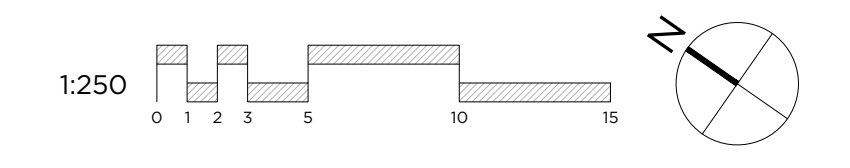
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Landscape Legend (this sheet only)

- existing tree to remain
- potential for future tree planting
- wood mulch
- potential for future amenity - i.e. bench, signage and wayfinding, gathering node



A1 PLANTING PLAN
L-205 Scale 1:250



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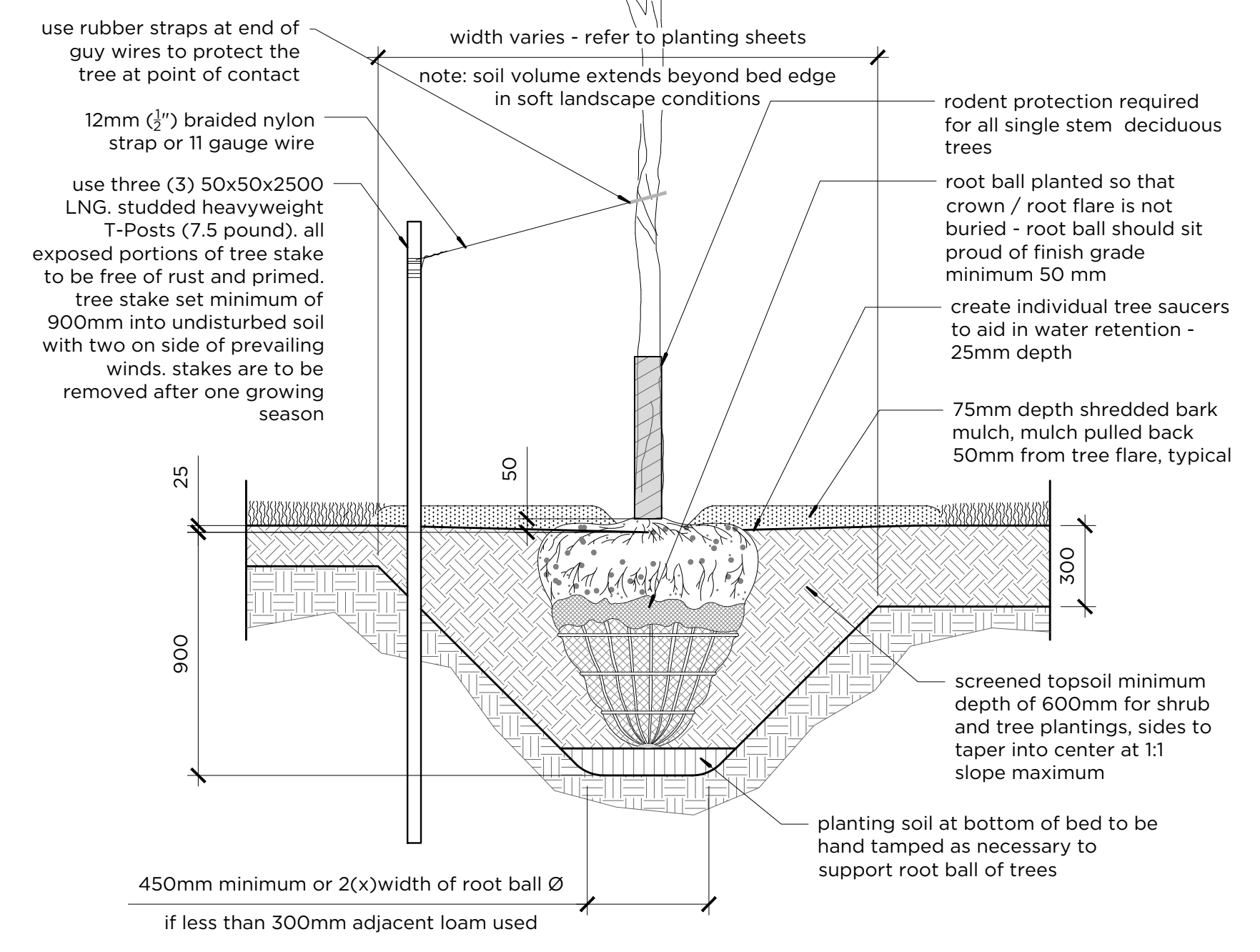
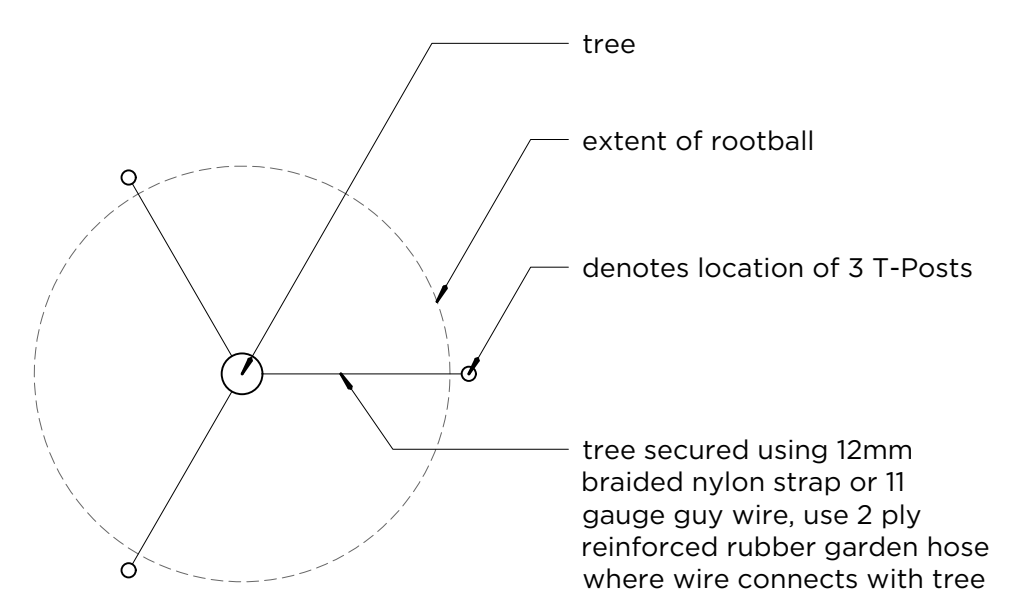
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**7th STREET & 7th AVENUE SE TREE AND SHRUB
PLANTING PLAN**

Project No. **CW2384** Drawing No. **L-205** Rev. **A**

Group **WILLOW ESTATES**

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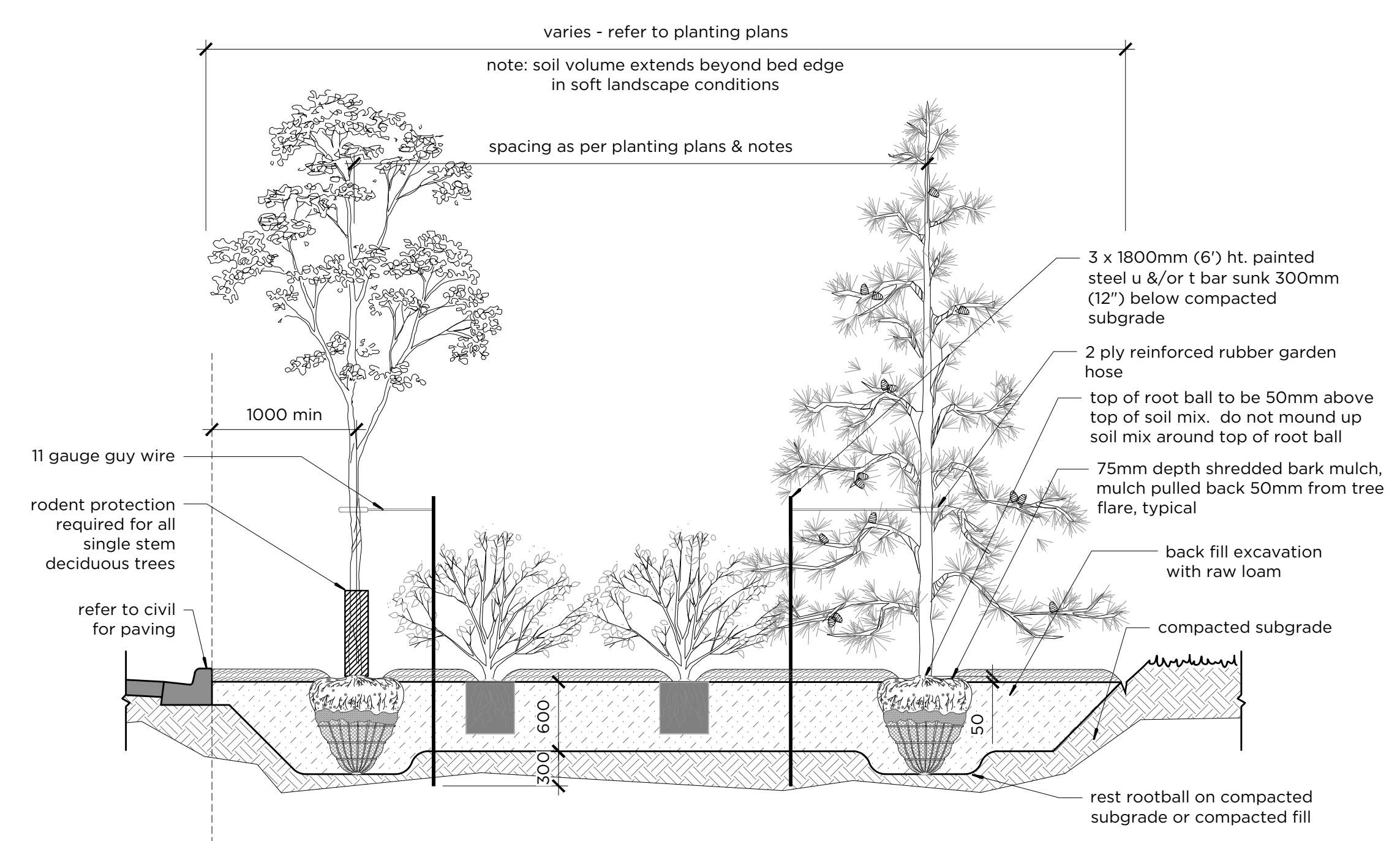


NOTES:

- MULCH IS NOT TO BE USED ALONG WET SIDE OF BERM OR IN NATURALIZED AREAS.
- ALL SHRUB AND TREE BEDS ARE TO BE LAID OUT IN THE FIELD AFTER COMPLETION OF THE BERM GRADING. PLANTING BED LOCATIONS TO BE VERIFIED CORRECT BY THE LANDSCAPE ARCHITECT IN THE FIELD, PRIOR TO EXCAVATION OF BEDS. ADJUSTMENTS MAY BE REQUIRED DEPENDING ON THE LOCATION OF ADJACENT EXISTING MATURE TREES AND VEGETATION.
- ANY PROPOSED ALTERNATE PLANT MATERIALS SHOULD COME FROM PLANT LISTS PROVIDED IN THE DOCUMENT "DRUMHELLER VALLEY PRESERVING & ENHANCING THE URBAN FOREST: STRATEGIES & TECHNIQUES" AND BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO ORDERING

NOTES:

- PLANTING LAYOUT PARAMETERS SPACING PER PLANT MATERIAL SCHEDULES
- MINIMUM 1m OFFSET FROM TOE OF BERM TO TREE or SHRUB CENTRELINE
- MINIMUM 1m OFFSET FROM EDGE OF PATHWAY OR CURB TO TREE CENTRELINE
- MINIMUM OFFSET FROM EDGE OF PATHWAY OR CURB TO SHRUB CENTRELINE SHALL BE 1/2 MATURE SPREAD



A1 TREE PLANTING DETAIL

L-300 Scale 1:20

A2 TREE AND SHRUB PLANTING IN COMBINED BED

L-300 Scale 1:40



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RESILIENCY AND FLOOD MITIGATION PROGRAM**

**WILLOW ESTATES TREES AND SHRUBS
DETAILS**

Project No. **CW2384** Drawing No. **L-300** Rev. **A**

Group **WILLOW ESTATES**