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TOWN OF DRUMHELLER **RESILIENCY AND FLOOD MITIGATION OFFICE**

ROSEDALE & SCARLETT BERMS ISSUED FOR TENDER 06 November 2024

DRAWING LIST

Sheet Number	Sheet Name
L-000	LANDSCAPE KEY PLAN
L-001	LEGEND & NOTES
L-100	SITE & SOIL PREPARATION PLAN
L-200	LANDSCAPE PLAN
L-201	LANDSCAPE PLAN
L-202	LANDSCAPE PLAN
L-203	LANDSCAPE PLAN
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L-205	LANDSCAPE PLAN
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L-208	LANDSCAPE PLAN
L-209	LANDSCAPE PLAN
L-210	LANDSCAPE PLAN
L-300	LANDSCAPE DETAILS
L-301	LANDSCAPE DETAILS

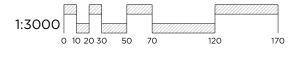
NOTE:

EXISTING VEGETATION LOCATION AND EXTENTS ARE BASED ON AERIAL IMAGERY AND ARE APPROXIMATE ONLY.

EXISTING VEGETATION IS SHOWN TO PROVIDE RELEVANT CONTEXT FOR THE FOLLOWING:

• PROTECTING EXISTING VEGETATION WHERE POSSIBLE; AND • LOCATING PROPOSED PLANT MATERIAL.

5



roject No. **3446-005**

LANDSCAPE

DRUMHELLER RESILIENCY & FLOOD MITIGATION OFFICE **RESILIENCY AND FLOOD MITIGATION PROGRAM**

ROSEDALE & SCARLETT BERM LANDSCAPE KEY PLAN

6

L-000 A

Drawing No.

Tree Harvest

Intent: To harvest trees designated for removal for future reuse on properties within the Drumheller Valley that have been designated as Environmental Reserve lands. Harvested trees will be used strategically to control access, create pollinator habitat, encourage habitat diversity, and to slow water flows in in riparian zones during flood events.

Prior to mobilization of tree removal equipment, the Contractor shall coordinate a site review with the Consultant to select and mark approximately 30 large caliper trees designated for removal to be allocated for harvest purposes.

Selected trees shall be removed per removal specifications and shall be transported to a site designated by the Owner (site to be confirmed, within 15km of removal site).

Site + Soil Preparation Notes

Soil Decompaction

Application: For all previously-developed or highly compacted areas, including areas formerly covered by structures, paving, heavily-used pathways, and those uses for construction staging and access.

Intent: To facilitate restoration of soil structure, enhancing the soil hydrological function and aeration that is critical to plant root system development, vegetation establishment, and successful long-term revegetation.

References:

David Polster, NAIT, Boreal Reclamation Program - Technical Note: Making Site Rough and Loose: A Soil Adjustment Technique, June 2023.

Natural Resources Canada, Silviculture Knowledge for Reclamation of Oil and Gas Disturbances: Soil Decompaction, 2016.

Canadian Society of Landscape Architects & Canadian Nursery Landscape Association, Canadian Landscape Standard: The Guide for Landscape Construction Projects Across Canada, Current Edition.

Design Criteria:

Decompact all areas that meet the above criteria to a minimum depth of 750mm throughout compacted areas.

Select a technique that is suitable for the on-site soil conditions, grades, equipment availability, and access considerations. Obtain Consultant approval prior to proceeding.

Techniques: Refer to Reference Documents for options, which include:

- Winged Subsoiler Technique
- Straight Ripper Shank Technique
- Standard Mounding Technique
- Rough and Loose Mounding Technique
- Discing Technique

Grade all areas following decompaction per Drawings and as required to suit intended application / vegetative cover prior to installation of growing media.

Finalize soil / growing media installation, grading, and preparation, as well as installation of seed, sod or other plant material, as soon as possible following subgrade and soil decompaction to minimize weed establishment.

Soil Roughening / Texturing

Application: For all areas prepared for seed installation.

Intent: To supplement specification requirements for soil / growing media installation and fine grading, roughening the soil / growing media surface prior to seeding naturalized areas will optimize germination and vegetation establishment by improving seed - soil contact, facilitating proper seeding depth, and enhancing soil moisture and microclimate.

References:

Ann Smreciu, Heather Sinton, David Walker, and Jeanie Bietz, Alberta Agriculture, Food and Rural Development, *Establishing Native Plant* Communities, 2003.

United States Environmental Protection Agency, *Stormwater Best* Management Practice: Soil Roughening, December 2021.

Government of Alberta, Field Guide for Erosion and Sediment Control -Section 7: Erosion and Sediment Control Methods, June 2011.

Design Criteria:

Roughen soils after final grading has been approved by Consultant.

Select a technique that is suitable for the on-site soil conditions, grades, equipment availability, and access considerations. Obtain Consultant approval prior to proceeding.

Technique: Grooving

- Create a series of ridges and depressions along the contour of the slope.
- Equipment options may include: disks, tillers, spring harrows, teeth on front-end loader bucket.
- Groove depth: 25-50mm
- Groove spacing: 75-150mm

Ensure soils are not compacted during soil roughening operations.

1

Install amendments, seed, and erosion control materials as soon as possible following soil preparation to minimize erosion, dust, and weed establishment.

Planting Notes

Advance procurement of all sod products and plant material is re-Contractor shall source and procure/reserve all products within s of contract award.

Plant material list was prepared for estimating purposes only. Contractor shall make their own quantity take-offs from Landscape Drawings and shall report any discrepancies prior to bid submission.

All construction activities within six (6) meters of existing vegetation must be supervised by an ISA (International Society of Arboriculture) certified arborist.

No bark mulch shall be used on wet side of berm construction.

All pruning of existing vegetation, if required, must be supervised by an ISA certified arborist and completed in accordance with all regulations.

Refer to Technical Specifications for detailed supply and installation requirements.

Planting Layout Notes

Final layout of all plant material shall be reviewed on-site and approved by the Consultant prior to excavation and installation - trees locations shall be staked, planting beds shall be marked, and container plant material shall be placed.

Plant material installed without review and approval may require relocation or replacement as directed by the Consultant at the Contractor's sole expense.

Locations of all trees and shrubs shown on Landscape Plans illustrate the planting design intent and reflect the following layout criteria:

Existing Vegetation - approximate extents/types per aerial imagery:

Where existing vegetation is removed to accommodate berm footprint, construction extents, and/or construction access, new plant material may be specified and located to provide similar long-term ecosystem and/or aesthet benefits.

Where existing vegetation is protected and will remain following berm construction, new plant material may be located to avoid conflicts with, and/or to enhance and supplement, this vegetation.

Landowner Input

Proposed plant material located within 5m of private property or between private property and the Red Deer River may require on-site consultation with landowner to finalize location prior to installation.

For all plant material installed on private property, Contractor shall coordinate directly with landowners. Refer to specifications for additional details.

Setbacks

Plant material shall be located relative to the setback criteria established by geotechnical engineering requirements, utility providers, and transportation safety requirements. Measurements reflect minimum dimensions and shall be made from centre of plant material.

Berm geometry setbacks - per Geotechnical Engineering requirements.

- 5m from toe of berm Trees
- Shrubs 2m from toe of berm
- Best practice setbacks

Trees

- Deciduous Trees 1m from pathway / hardscape edge
- Coniferous Trees ¹/₂ mature spread from pathway / hardscape edge
- ¹/₂ mature spread from pathway / hardscape edge Shrubs

Utility setbacks - per City of Calgary Parks and Open Spaces Development Guidelines and Standard Specifications: Landscape Construction, Current Edition.

- 3m from Sanitary Line 3m from Storm Line 2.5m from Water Line 2.5m from Fire Hydrant
- 2.0m from Power/Electrical Line
 - 7.5m from Overhead Power/Electrical Line

The Contractor shall ensure compliance with all setback requirements.

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Planting Schedule

equired.
sixty (60 days)

(code	botanical / common name	quantity	height	spread	size	spacing	remarks
	ninu	picea pungens	6	20m	5m	2m ht.	shown	
4	pipu	colorado spruce						
trees	pisy	pinus sylvestris	2	12m	5m	3m ht.	shown	
i t	pisy	scotch pine					•	ornamental
			•					
f	frper	fraxinus pennsylvanica 'Rugby'	9	10m	5m	50mm cal.	shown	
	irper	prairie spire green ash				·	•	
n	mass	malus x 'spring snow'	6	8m	5m	50mm cal.	shown	flowering ornamental
	liass	spring snow flowering crab					•	
	math	malus x 'thunderchild'	4	5m	4m	50mm cal.	shown	sunny well drained soil, hard
	math	thunderchild crabapple						dark pink
r	ooba	populus balsamifera	28	20m	15m	50mm cal.	shown	
-	5004	balsam poplar						
r	oode	populus deltoides	87	30m	20m	#15 cont.	shown	male variety only
-	Joue	plains cottonwood						
	prvi	prunus virginiana 'schubert'	9	5m	3m	50mm cal.	shown	ornamental
	prvi	schubert chokecherry						
	ulam	ulmus americana	5	24m	15m	75mm cal.	shown	
	uidiii	american elm						

quantity height spread size

28 | 2m | 2m | #2 cont. ±1.8m o.c.

48 1m 1m #2 cont. ±0.8m o.c.

total quantity of trees = 156

	code	botanical / common name
	amal	amelanchier alnifolia
	amai	saskatoon
sdu		elaeagnus commutata
shrubs	elco	wolf willow
2	roac	rosa acicularis
tic	TOac	prickly rose
	cain	salix interior
	SdIII	

or	syord	syringa x prestoniae 'Donald wyman'	33	3m	1.8m	#5 cont.	shown
	syprd	donald wyman preston lilac					

total quantity of shrubs = 168

Seed Mix Schedule

Seed Mix 4 - Multipurpose Mix

sandbar willow

Application Rates: seed mix = 60 kg (PLS) / ha cover crop = 5 kg (PLS) / ha

spacing remarks

27 | 3m | 2m | #2 cont. |±1.8m o.c.| ornamental, edible fruit

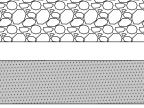
32 | 2m | 2m | #2 cont. ±1.8m o.c. reclamation planting

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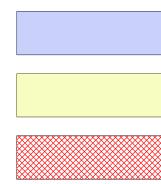
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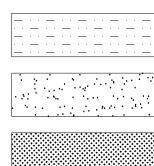


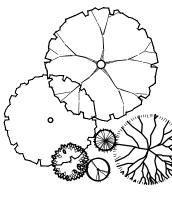


Subgrade &



Planting





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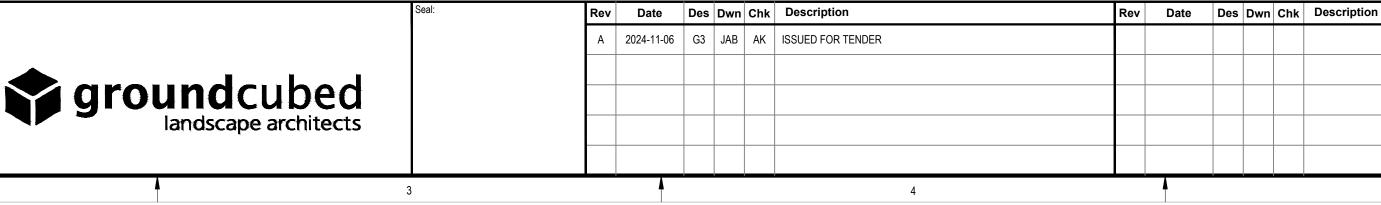
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Seeding Notes

Advance procurement of seed is required. Contractor shall source and procure/reserve all seed within sixty (60 days) of contract award.

Seed installation timing is critical to the successful establishment of vegetative cover. Refer to Technical Specifications for recommendations and parameters.

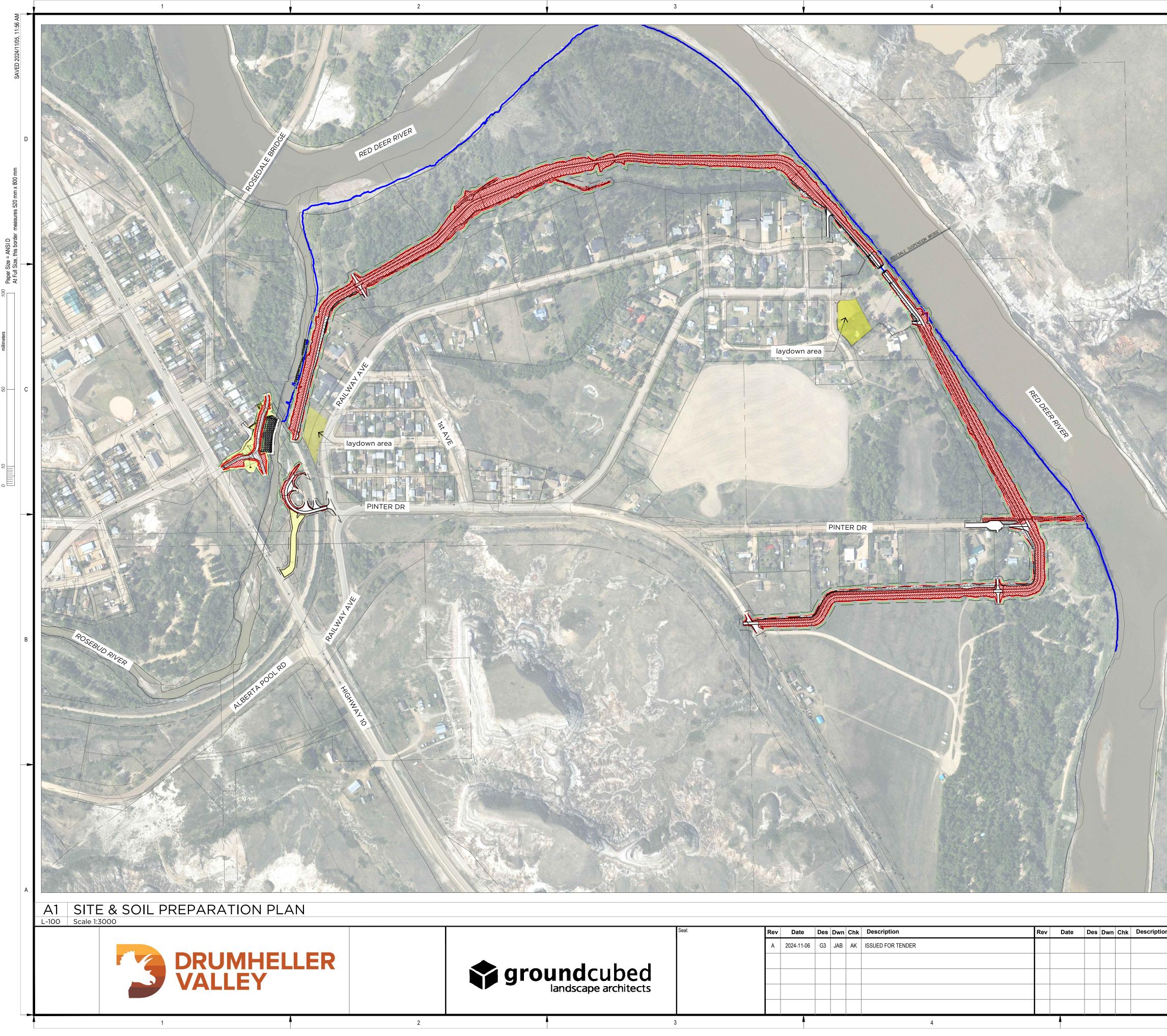
Refer to Technical Specifications for additional detailed supply and installation requirements.



Botanical Name	Common Name	Target Cover	Seed Mix (PLS)
Bouteloua gracilis	Blue Grama Grass	10%	3%
Elymus canadensis	Canada Wild Rye	17%	39%
Poa palustris	Fowl Bluegrass	10%	1%
Nasselia/Stipa viridula	Green Needle Grass	10%	16%
Festuca idahoensis	Idaho Fescue	10%	6%
Koeleria macrantha	June Grass	5%	0.7%
Artemisia frigida	Prairie Sagewort	5%	0.3%
Festuca saximontana	Rocky Mountain Fescue	15%	6%
Elymus trachycaulus ssp. trachycaulus	Slender Wheatgrass	18%	28%
	Total	100%	100%
Cover Crop		-	
Lolium multiflorum	Annual Ryegrass		

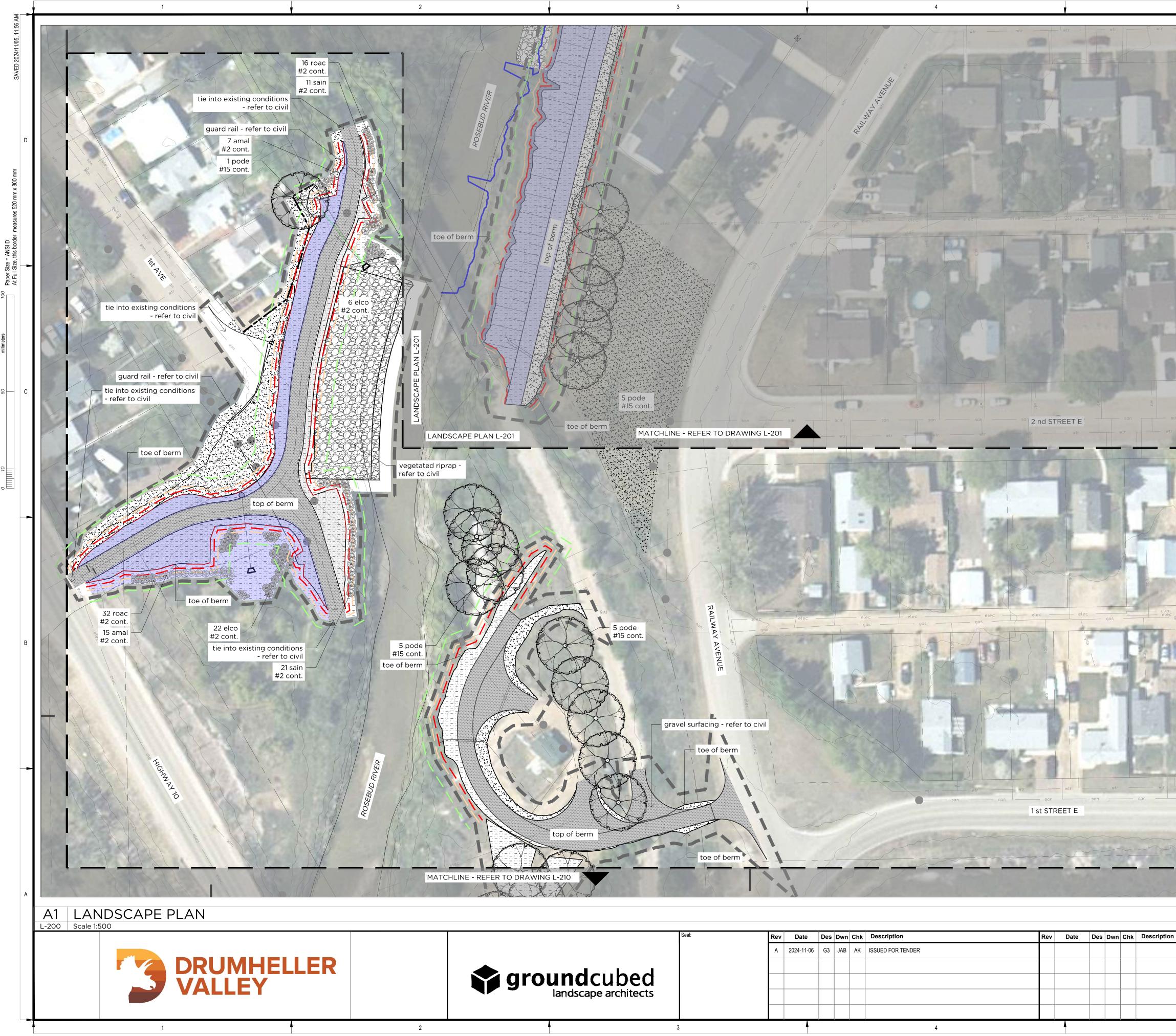
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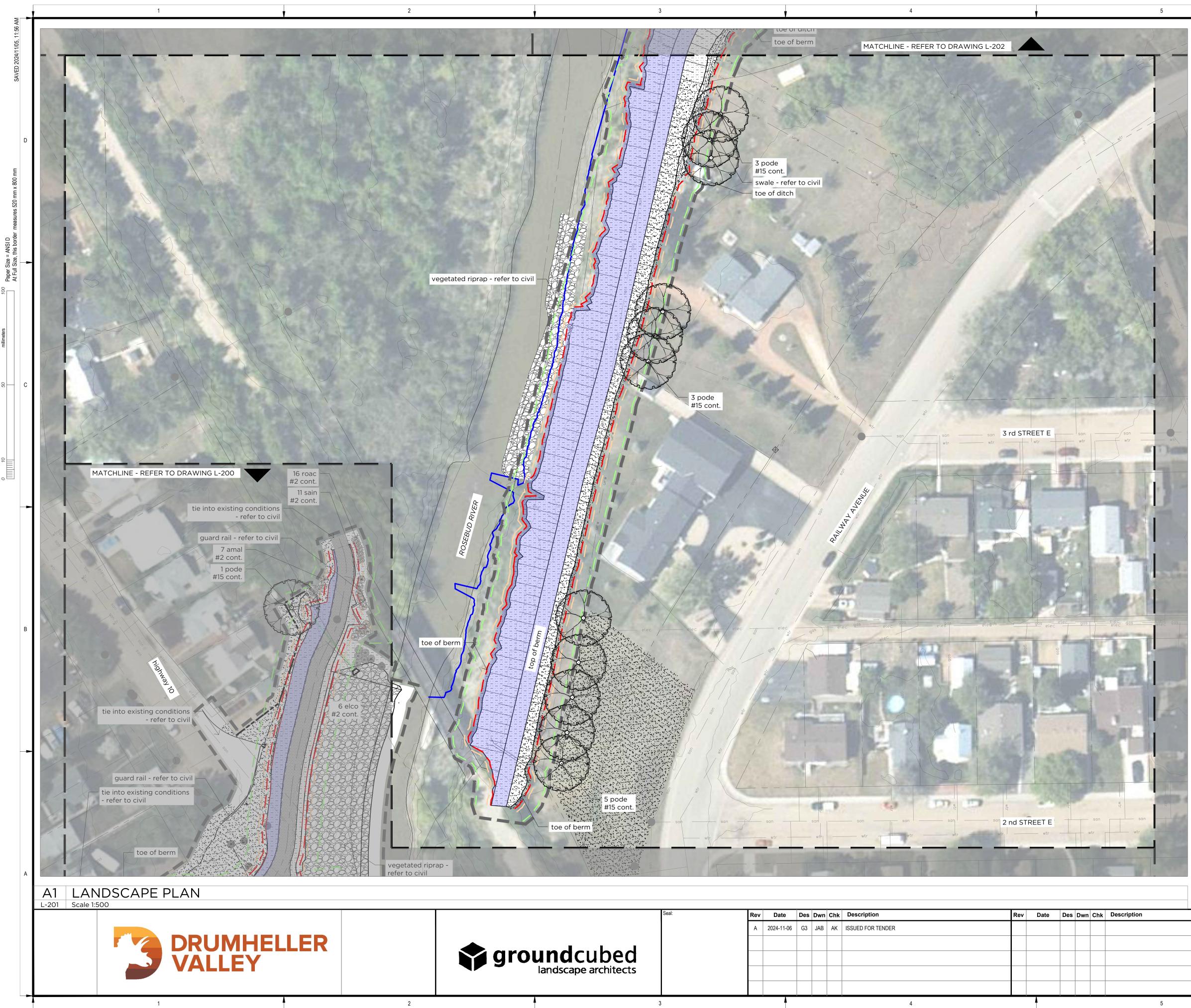
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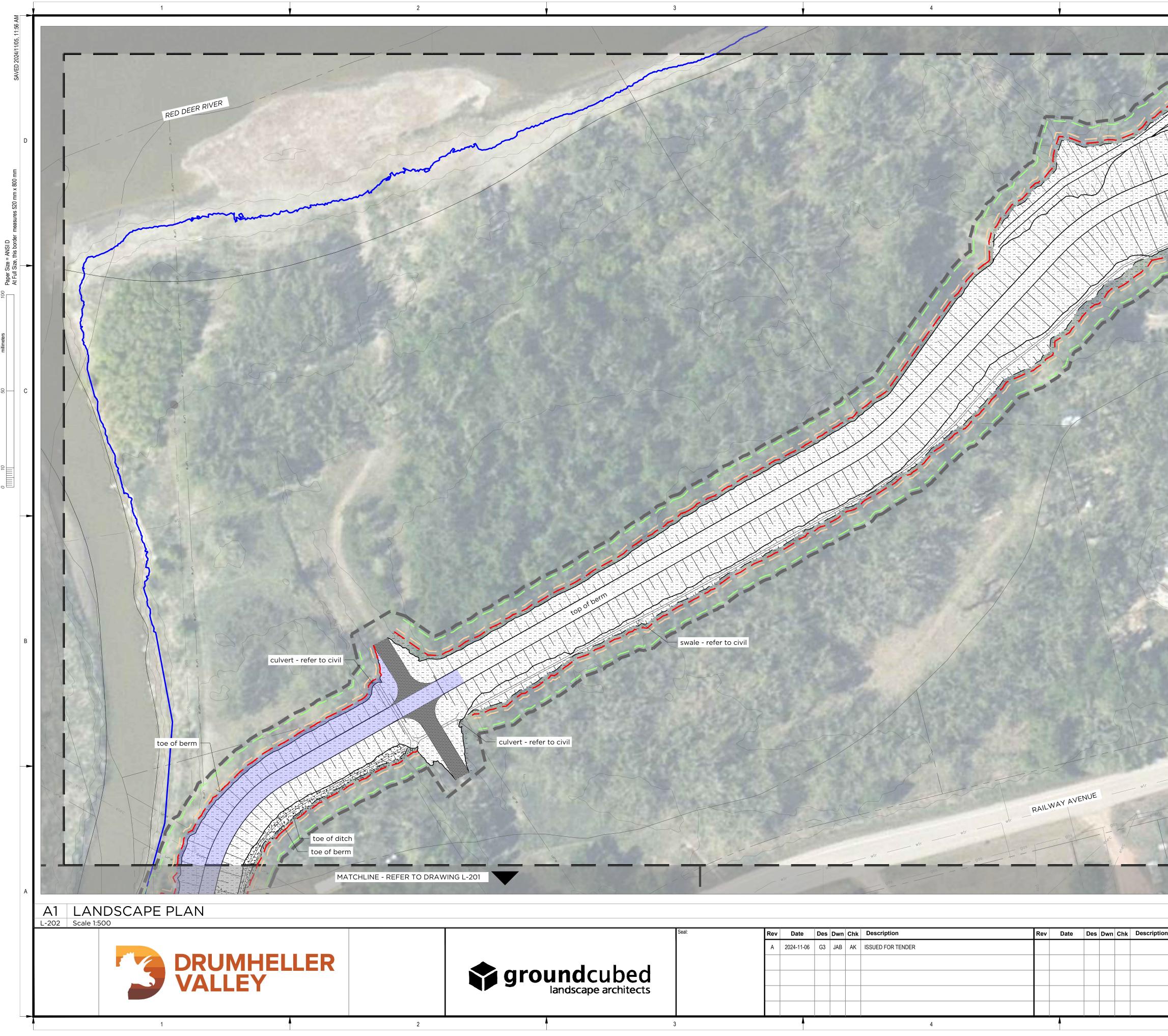
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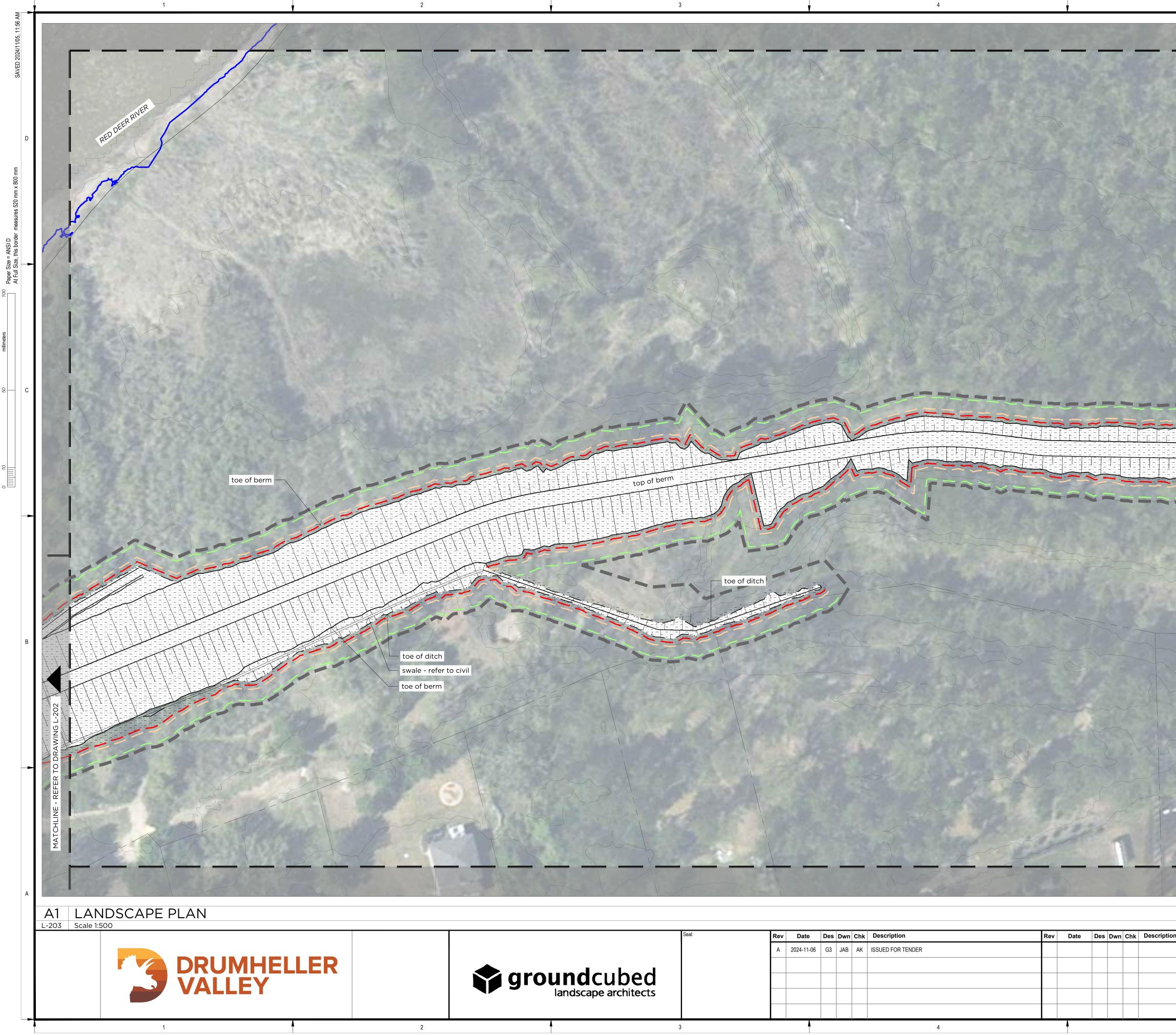
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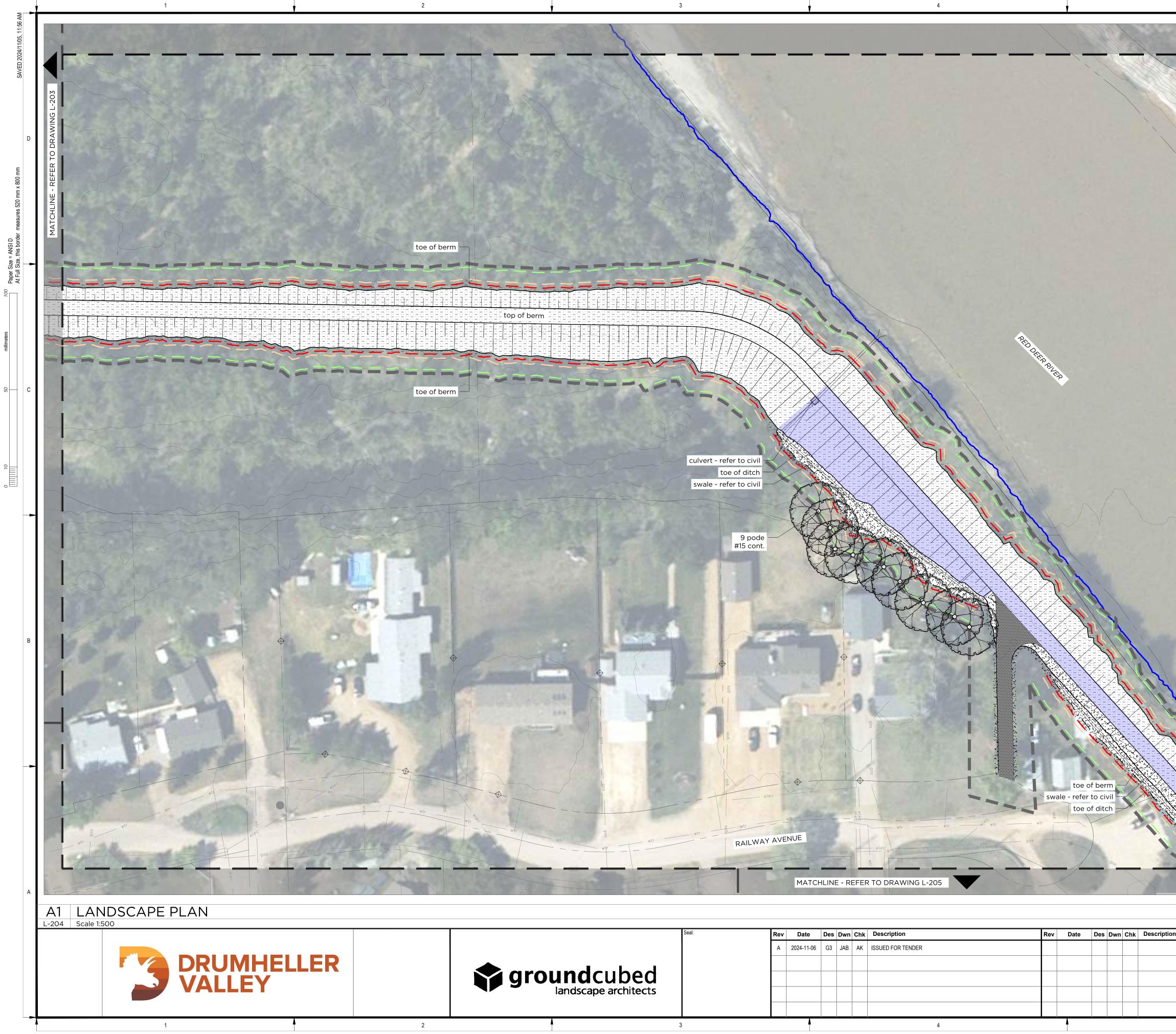
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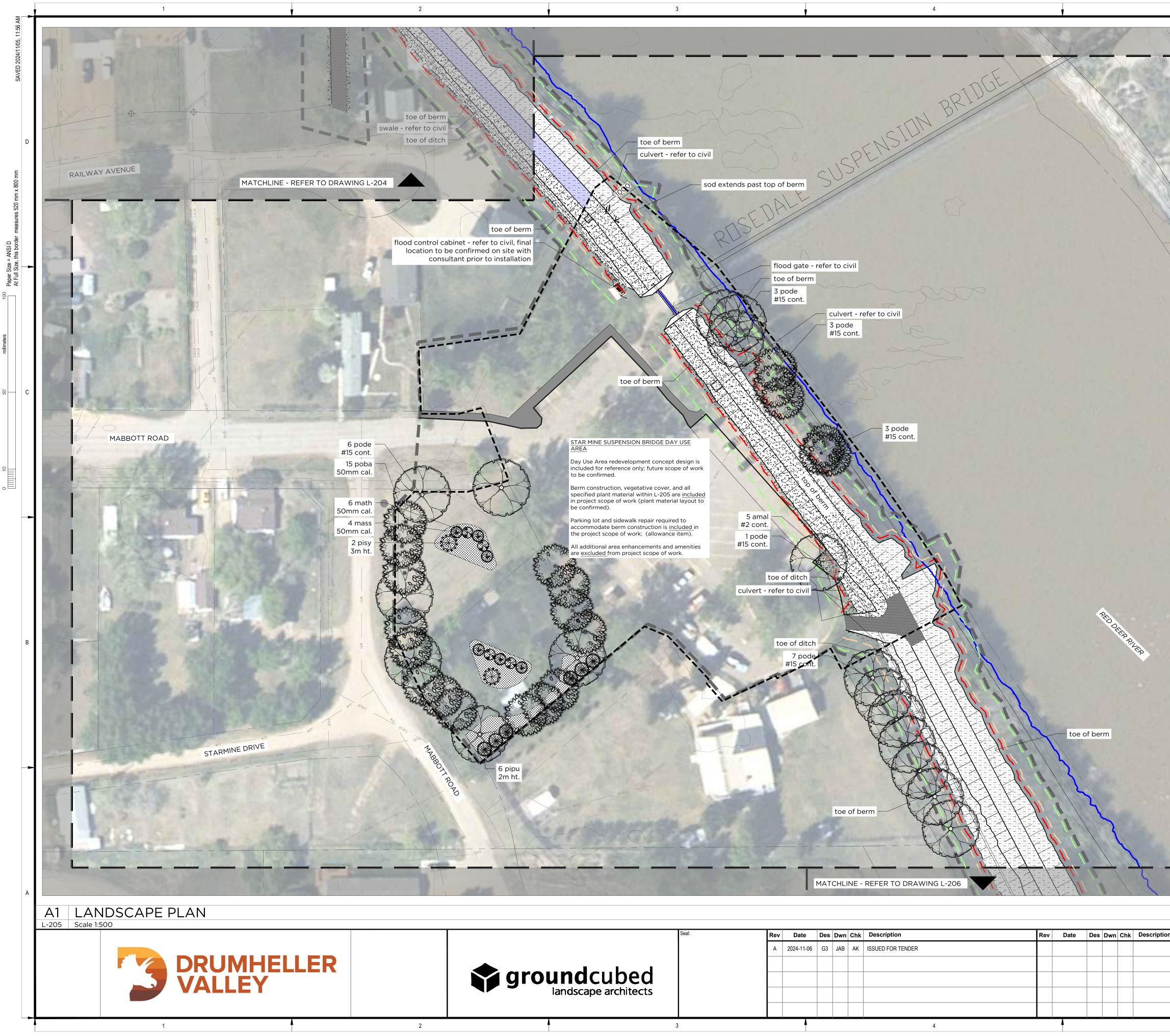
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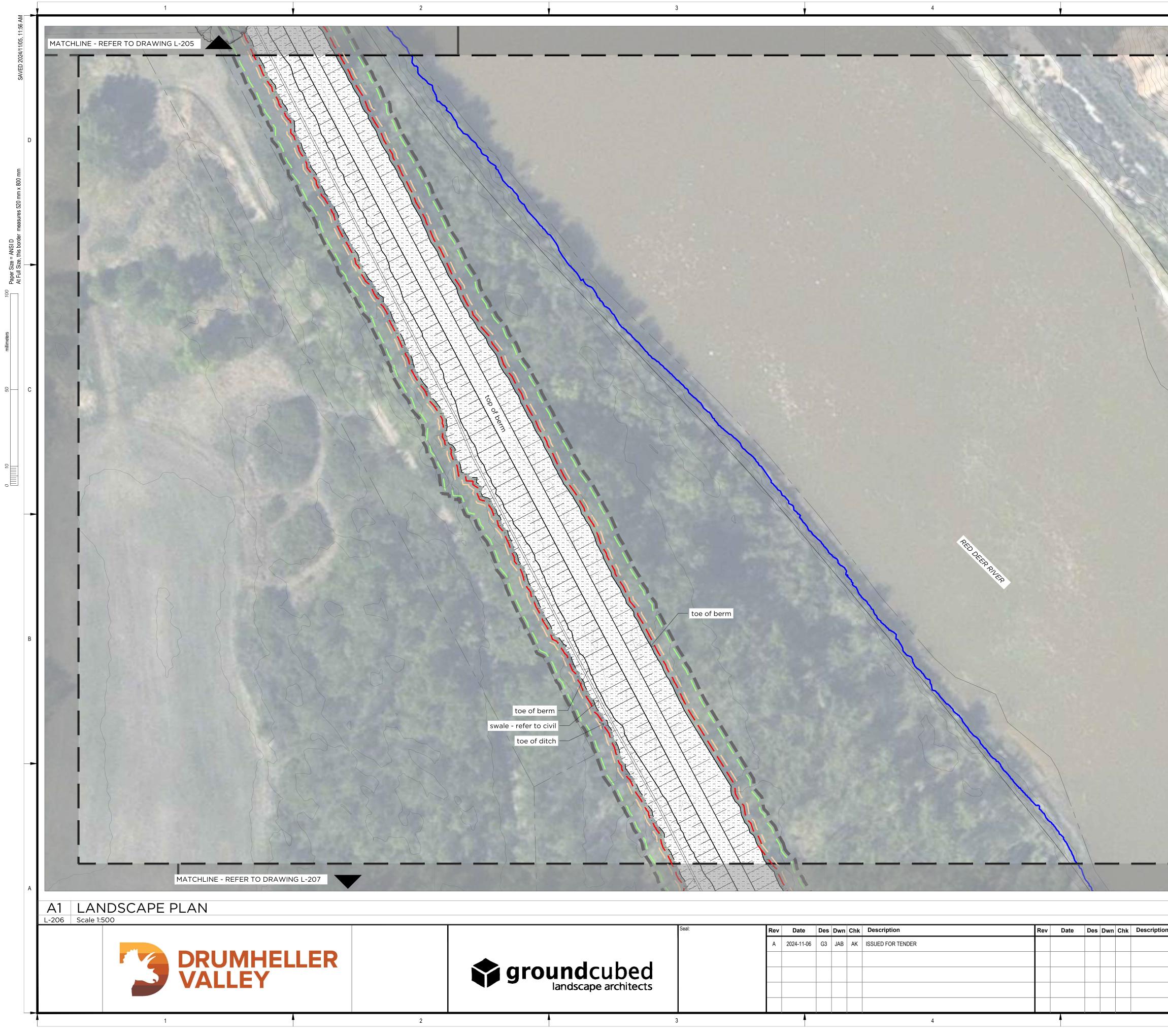
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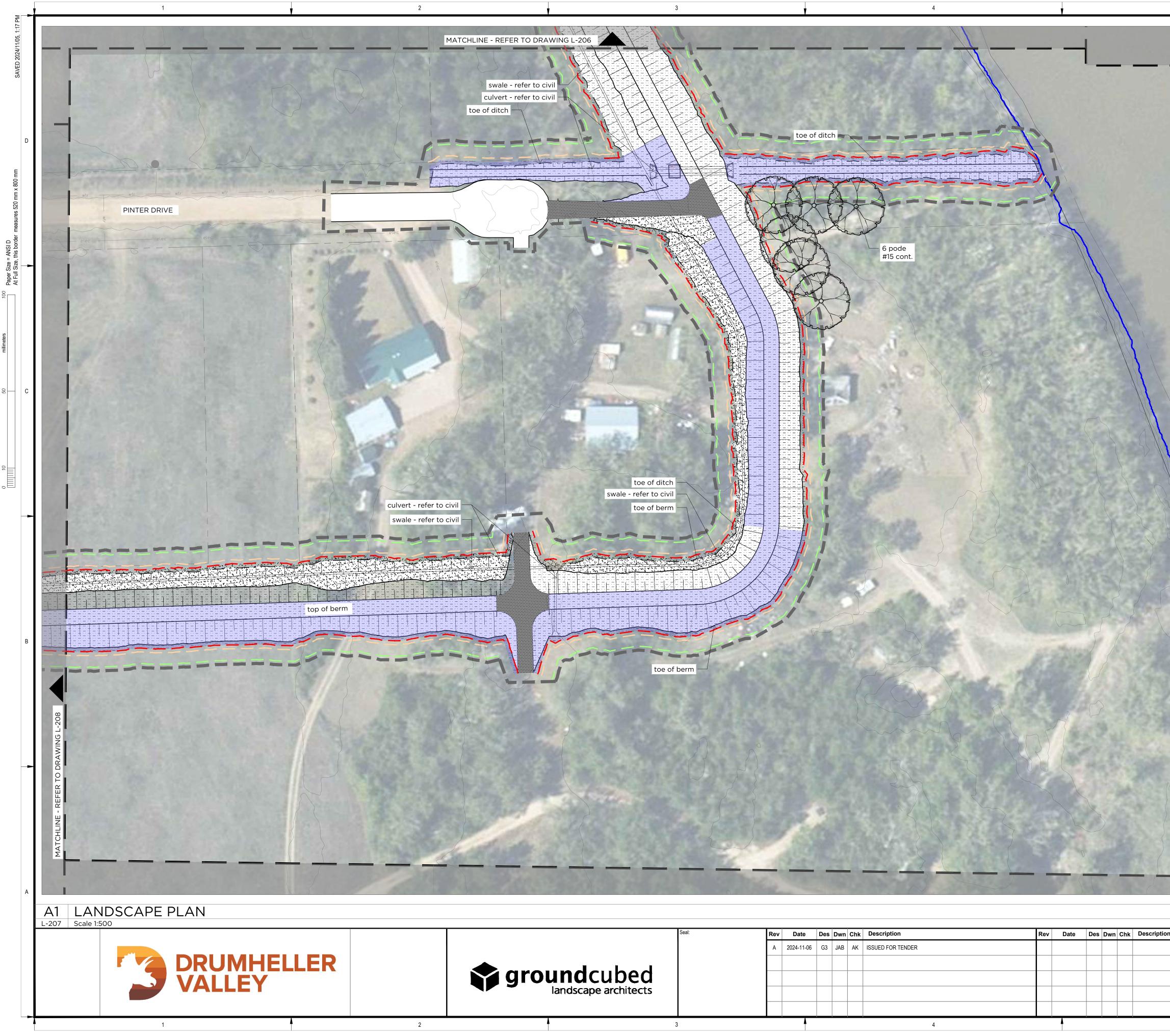
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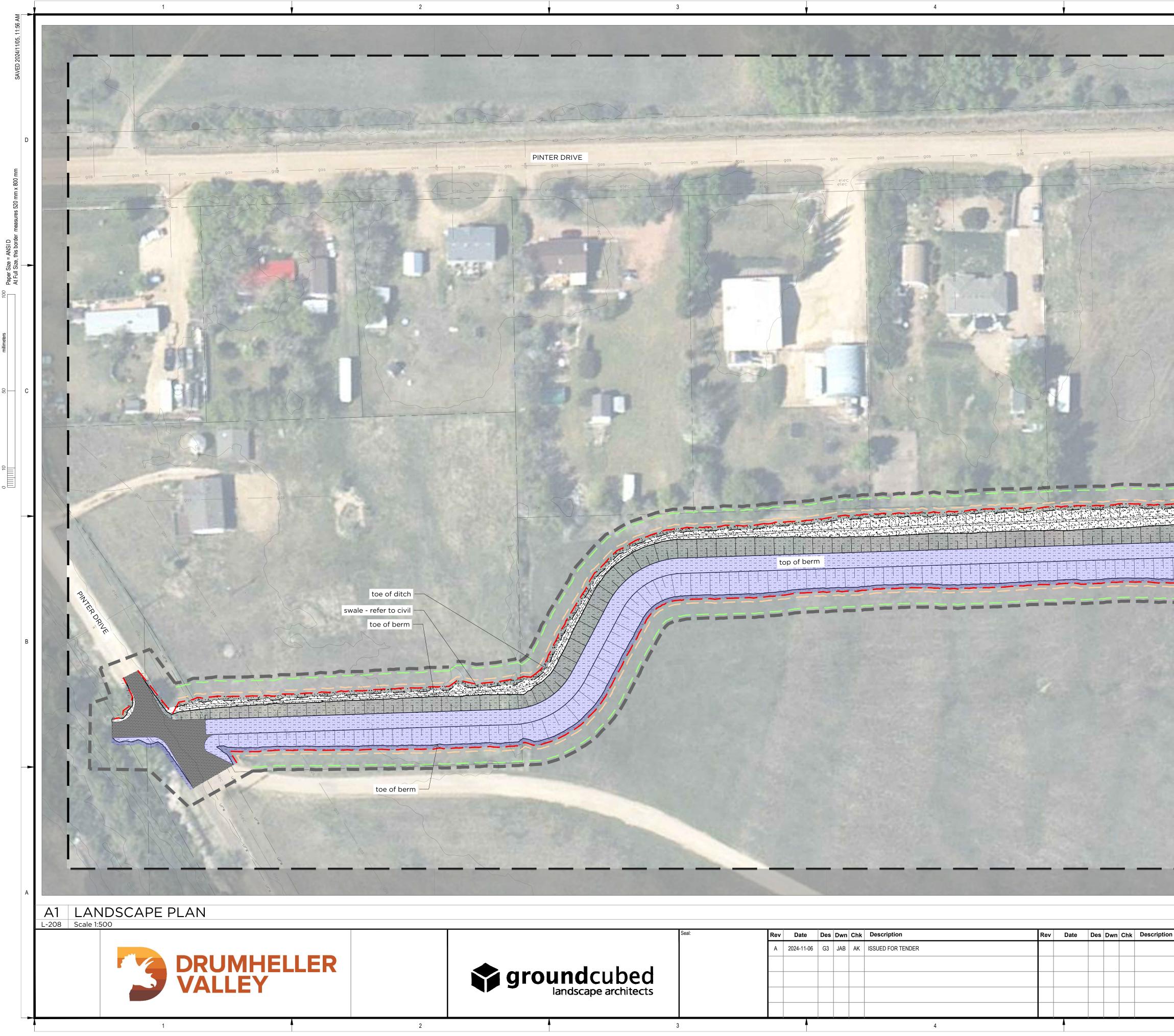
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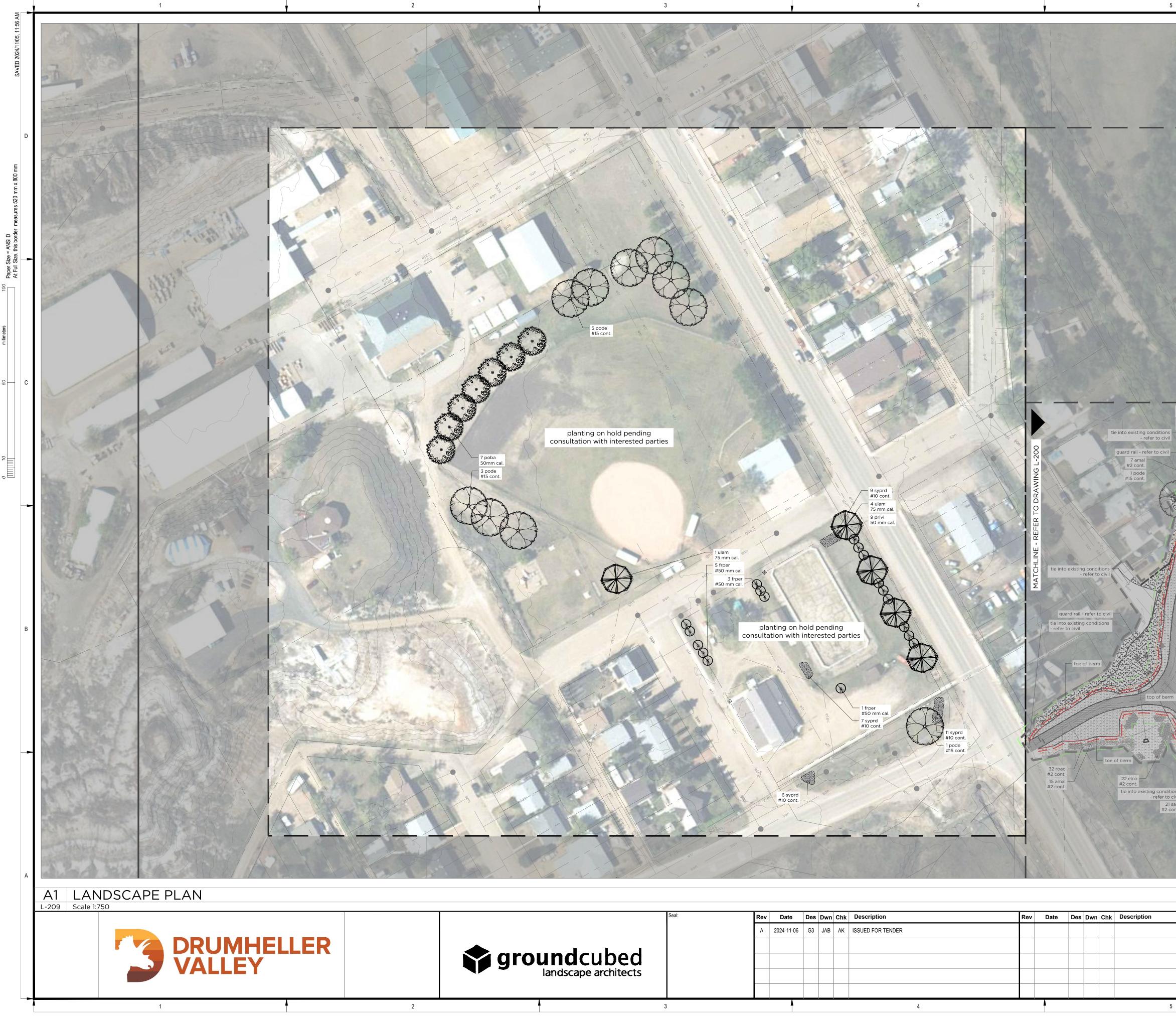
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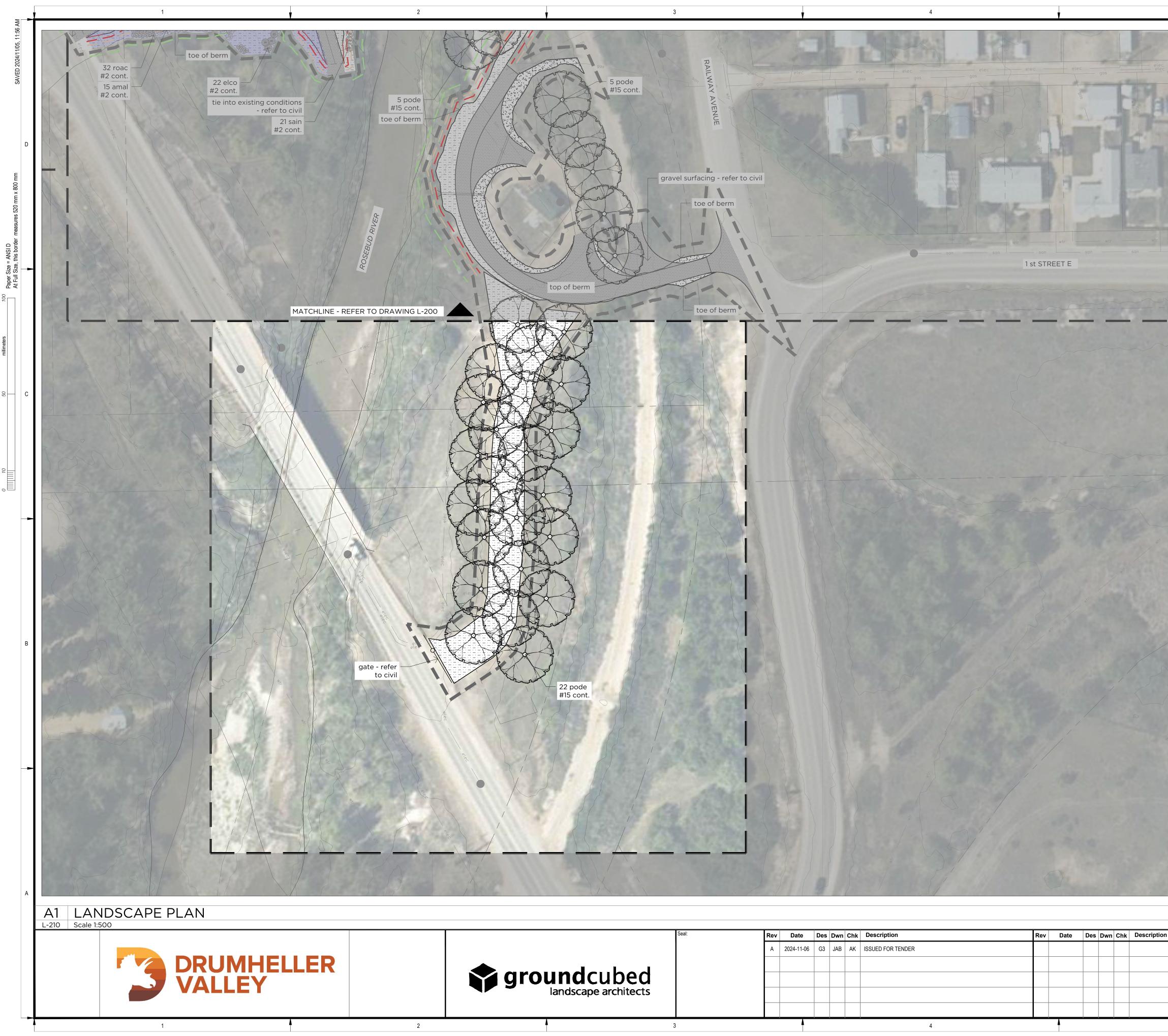
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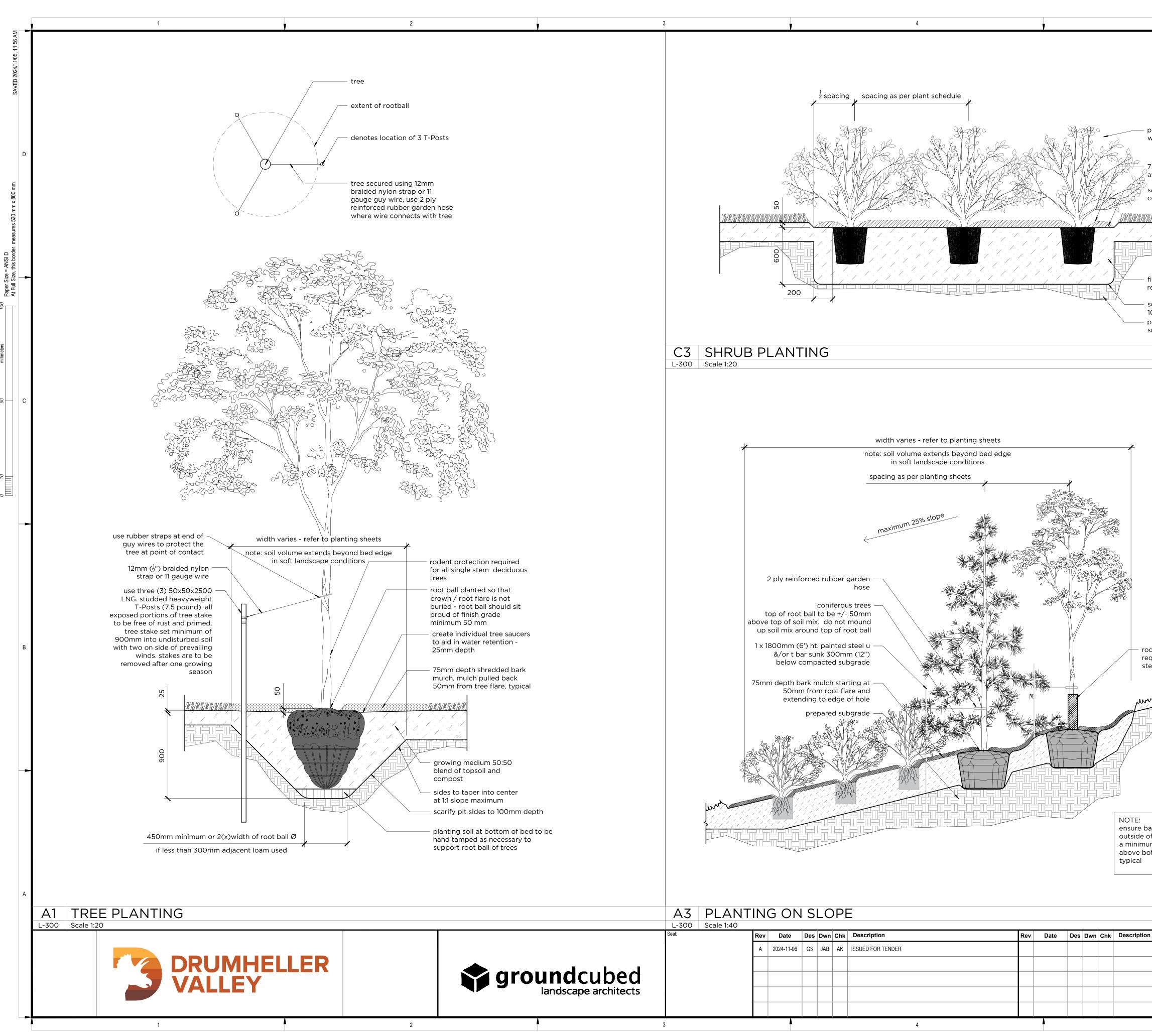
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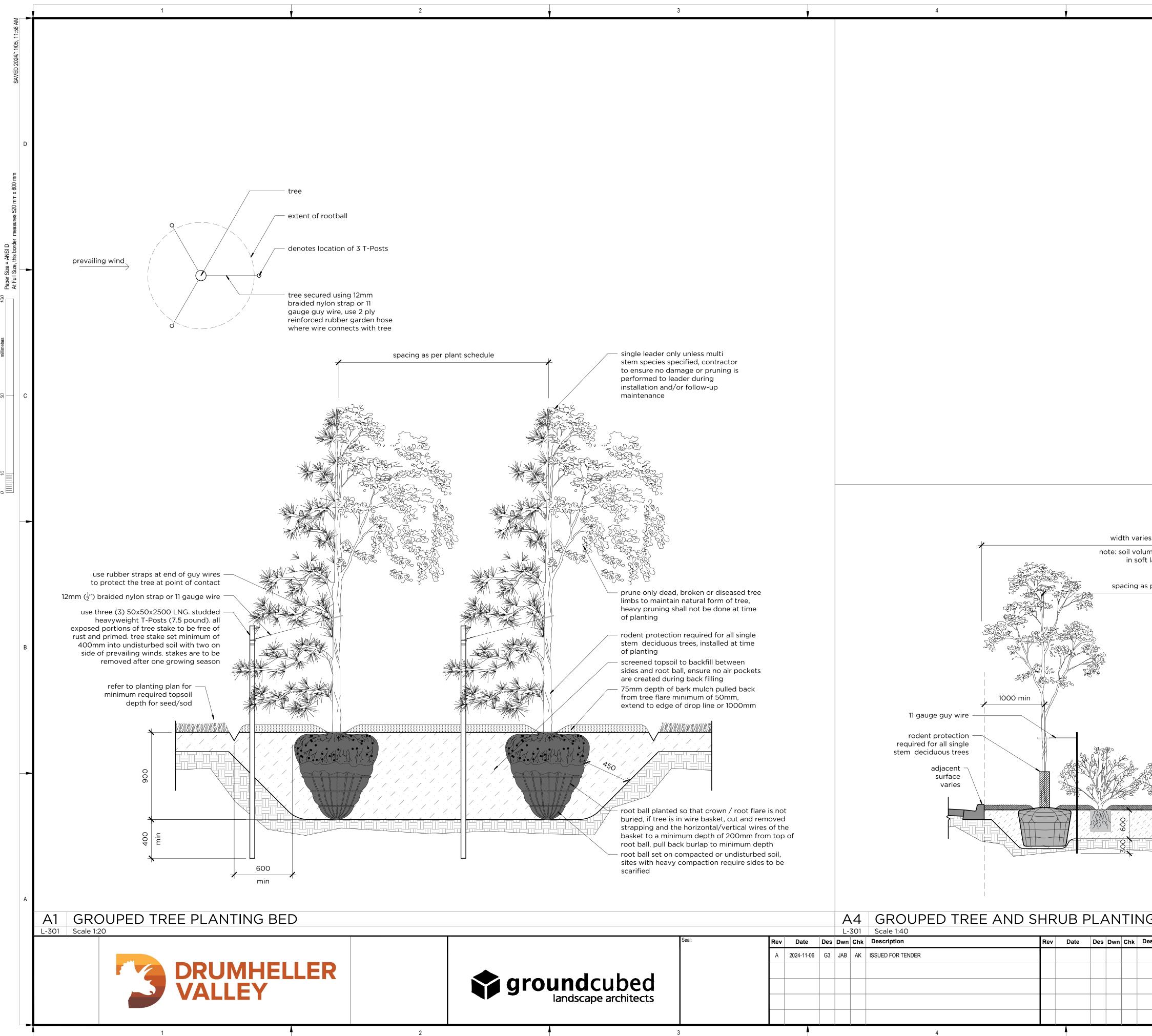


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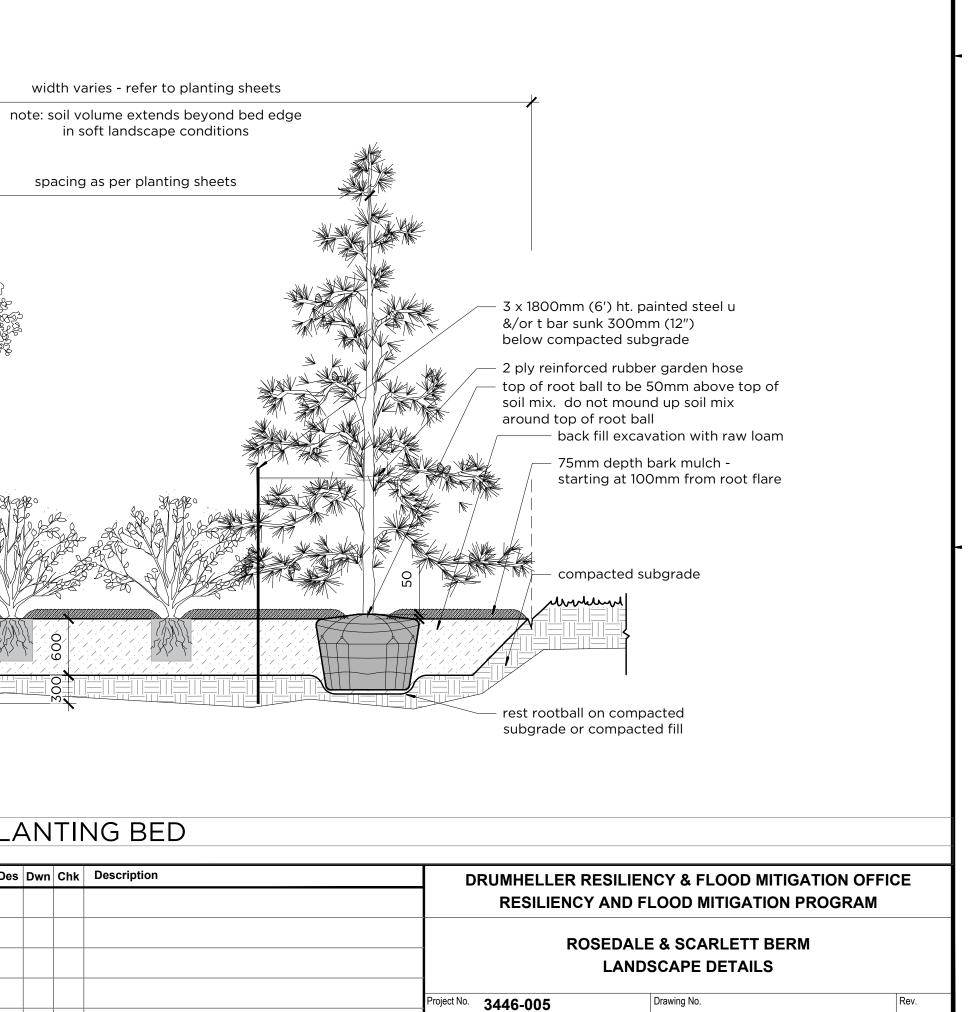


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		be used for trees and shrubs	
	the flood protection k	perms or within drainage dito	ches / swales.
orune dead and broken branches while retaining normal plant shape			
75mm depth bark mulch pulled away from plant crown			
saucer shaped basin for water containment			
irmly pack topsoil to			
remove all air pockets scarify pit bottom to 100mm depth			
prepared or undisturbed subgrade			
dent protection quired for all single em deciduous trees			
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ark mulch is if swale area and m of 200mm			
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A4 GROUPED TREE AND SHRUB PLANTING BED

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