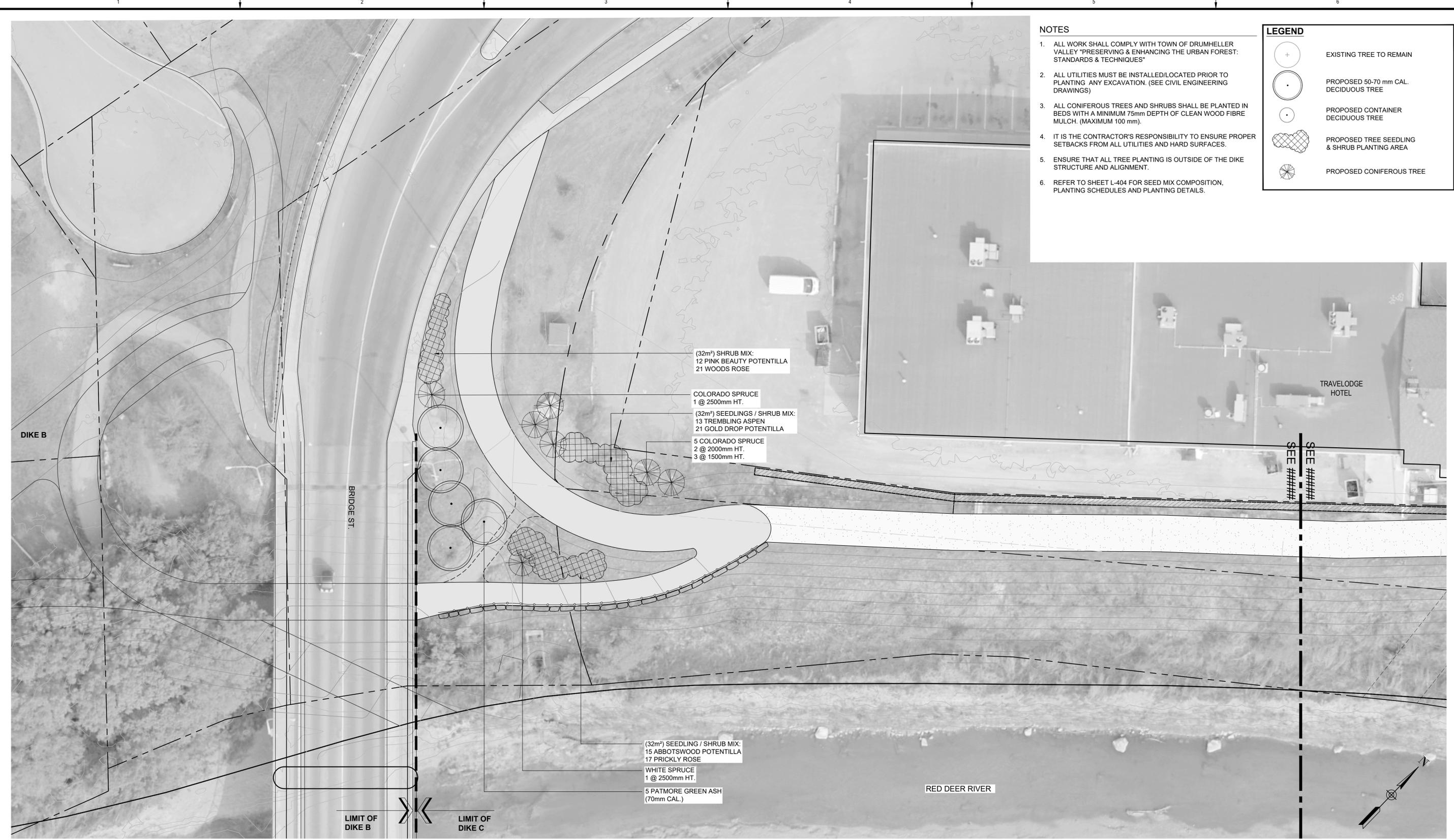


SAVED 2022/10/27, 11:30 AM

Plot Size - A3 NSD
 All Text, Lines, and Symbols - measures 50 mm x 80 mm



NOTES

1. ALL WORK SHALL COMPLY WITH TOWN OF DRUMHELLER VALLEY "PRESERVING & ENHANCING THE URBAN FOREST: STANDARDS & TECHNIQUES"
2. ALL UTILITIES MUST BE INSTALLED/LOCATED PRIOR TO PLANTING ANY EXCAVATION. (SEE CIVIL ENGINEERING DRAWINGS)
3. ALL CONIFEROUS TREES AND SHRUBS SHALL BE PLANTED IN BEDS WITH A MINIMUM 75mm DEPTH OF CLEAN WOOD FIBRE MULCH. (MAXIMUM 100 mm).
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE PROPER SETBACKS FROM ALL UTILITIES AND HARD SURFACES.
5. ENSURE THAT ALL TREE PLANTING IS OUTSIDE OF THE DIKE STRUCTURE AND ALIGNMENT.
6. REFER TO SHEET L-404 FOR SEED MIX COMPOSITION, PLANTING SCHEDULES AND PLANTING DETAILS.

LEGEND

	EXISTING TREE TO REMAIN
	PROPOSED 50-70 mm CAL. DECIDUOUS TREE
	PROPOSED CONTAINER DECIDUOUS TREE
	PROPOSED TREE SEEDLING & SHRUB PLANTING AREA
	PROPOSED CONIFEROUS TREE

PLAN
 Scale 1:200



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 Ernie J Webster

Rev	Date	Des	Dwn	Chk	Description
0	2022-10-28	EJW	MD	EJW	ISSUED FOR TENDER

Rev	Date	Des	Dwn	Chk	Description

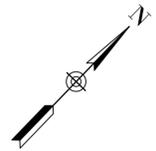
**TOWN OF DRUMHELLER
 PACKAGE C DIKE PROJECT
 NORTH DRUMHELLER DIKE C
 PLANTING PLAN**

Project No. **133142** Drawing No. **L-401** Rev. **0**
 Group **LANDSCAPE**



LEGEND

- EXISTING TREE TO REMAIN
- PROPOSED 50-70 mm CAL. DECIDUOUS TREE
- PROPOSED CONTAINER DECIDUOUS TREE
- PROPOSED TREE SEEDLING & SHRUB PLANTING AREA
- PROPOSED CONIFEROUS TREE



PLAN
Scale 1:200



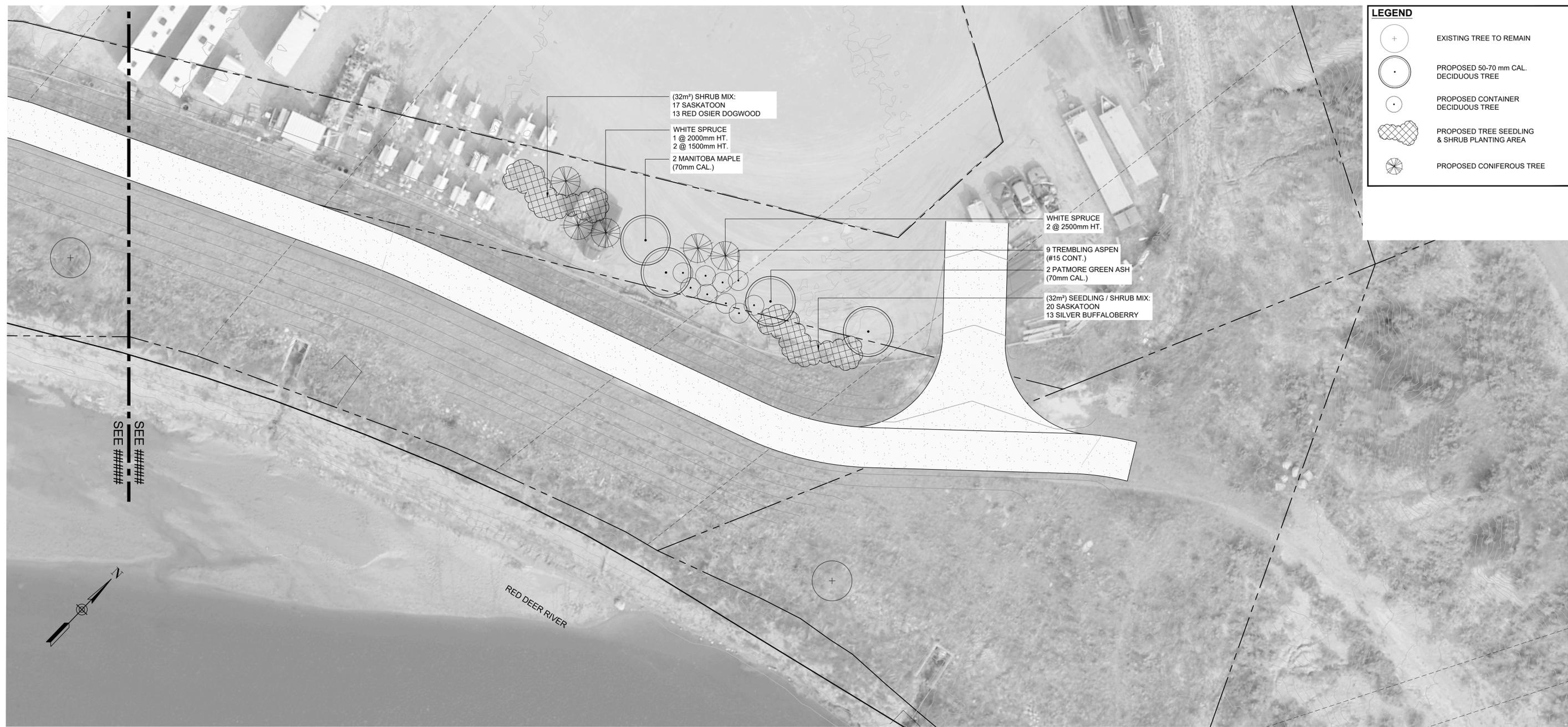
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**TOWN OF DRUMHELLER
PACKAGE C DIKE PROJECT
NORTH DRUMHELLER DIKE C
PLANTING PLAN**

Project No. **133142** Drawing No. **L-402** Rev. **0**
Group **LANDSCAPE**



LEGEND

- EXISTING TREE TO REMAIN
- PROPOSED 50-70 mm CAL. DECIDUOUS TREE
- PROPOSED CONTAINER DECIDUOUS TREE
- PROPOSED TREE SEEDLING & SHRUB PLANTING AREA
- PROPOSED CONIFEROUS TREE

(32m²) SHRUB MIX:
17 SASKATOON
13 RED OSIER DOGWOOD

WHITE SPRUCE
1 @ 2000mm HT.
2 @ 1500mm HT.
2 MANITOBA MAPLE
(70mm CAL.)

WHITE SPRUCE
2 @ 2500mm HT.

9 TREMBLING ASPEN
(#15 CONT.)
2 PATMORE GREEN ASH
(70mm CAL.)

(32m²) SEEDLING / SHRUB MIX:
20 SASKATOON
13 SILVER BUFFALOBERRY

SEE #####
SEE #####

PLAN
Scale 1:200



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**TOWN OF DRUMHELLER
PACKAGE C DIKE PROJECT
NORTH DRUMHELLER DIKE C
PLANTING PLAN**

Project No. **133142** Drawing No. **L-403** Rev. **0**

Group **LANDSCAPE**

TREE PLANTING SCHEDULE

QTY.	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION
CONIFEROUS TREES				
3	PICEA GLAUCA	WHITE SPRUCE	2500mm HT.	B&B
1	PICEA GLAUCA	WHITE SPRUCE	2000mm HT.	B&B
2	PICEA GLAUCA	WHITE SPRUCE	1500mm HT.	B&B
1	PICEA PUNGENS	COLORADO SPRUCE	2500mm HT.	B&B
2	PICEA PUNGENS	COLORADO SPRUCE	2000mm HT.	B&B
3	PICEA PUNGENS	COLORADO SPRUCE	1500mm HT.	B&B

QTY.	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION
DECIDUOUS TREES				
2	ACER NEGUNDO	MANITOBA MAPLE	70mm CAL.	B&B
7	FRAXINUS PENNSYLVANICA 'PATMORE'	PATMORE GREEN ASH	70mm CAL.	B&B
9	POPULUS TREMULOIDES	TREMBLING ASPEN	#15 CONT.	B&B

SHRUB AND TREE SEEDLING SCHEDULE

QTY.	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING
DECIDUOUS SHRUBS					
17	ROSA ACICULARIS	PRICKLY ROSE	600mm HT.	#2 CONT.	1.0-1.5m O.C.
37	AMELANCHIER ALNIFOLIA	SASKATOON	600mm HT.	#2 CONT.	1.5-2.0m O.C.
13	CORNUS SERICEA	RED OSIER DOGWOOD	600mm HT.	#2 CONT.	2.5-3.0m O.C.
13	POPULUS TREMULOIDES	TREMBLING ASPEN	SEEDLING		1.0m O.C.
15	POTENTILLA FRUTICOSA 'ABBOTSWOOD'	ABBOTSWOOD POTENTILLA	400mm HT.	#2 CONT.	1.0-1.5m O.C.
21	POTENTILLA FRUTICOSA 'GOLD DROP'	GOLD DROP POTENTILLA	400mm HT.	#2 CONT.	1.0-1.5m O.C.
12	POTENTILLA FRUTICOSA 'PINK BEAUTY'	PINK BEAUTY POTENTILLA	400mm HT.	#2 CONT.	1.0-1.5m O.C.
21	ROSA WOODSII	WOODS ROSE	400mm HT.	#2 CONT.	1.0-1.5m O.C.
13	SHEPHERDIA ARGENTEA	SILVER BUFFALOBERRY	600mm HT.	#2 CONT.	2.5-3.0m O.C.

TREE PLANTING STRATEGY

TOTAL NUMBER OF FAIR, GOOD AND VERY GOOD TREES TO BE REMOVED = 15
 TOTAL NUMBER OF NEW TREES AND SHRUBS REQUIRED TO BE PLANTED IN LIEU OF REMOVALS = 75

(AS PER THE TOWN OF DRUMHELLER "PRESERVING AND ENHANCING THE URBAN FOREST STANDARDS AND TECHNIQUES", WHERE A 5:1 RATIO OF PLANTING REPLACEMENT IS SPECIFIED, FOR EVERY 1 FAIR, GOOD, OR VERY GOOD TREE THAT IS REMOVED, 5 TREES/SHRUBS WILL BE PLANTED)

TOTAL REPLACEMENT PLANTS = 192

BREAKDOWN:
 MED-LARGE TREES (50-70mm CAL.) = 21 (11%)
 SMALL CONTAINER GROWN TREES = 9 (5%)
 SEEDLING TREES = 13 (7%)
 SHRUBS = 149 (78%)

PLANTING NOTES

- ALL PLANT MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH THE GUIDELINES AND SPECIFICATIONS OF DRUMHELLER VALLEY, THE DRUMHELLER VALLEY DOCUMENT, PRESERVING & ENHANCING THE URBAN FOREST: STANDARDS & TECHNIQUES AND AS PER PROJECT SPECIFIC PLANTING DETAILS LOCATED AT END OF DRAWING SET.
- PLANT MATERIAL LIST WAS PREPARED FOR ESTIMATING PURPOSES ONLY. CONTRACTOR SHALL MAKE THEIR OWN QUANTITY TAKE-OFFS USING DRAWINGS TO DETERMINE QUANTITIES, REPORTING PROMPTLY AND DISCREPANCIES WHICH MAY AFFECT BIDDING.
- THE OWNER'S REPRESENTATIVE WILL INSPECT PLANTS AT THE FOLLOWING STAGES; AT TIME OF DELIVERY PRIOR TO INSTALLATION, INSTALLED PLANTS BEFORE COMMENCEMENT OF MAINTENANCE PERIOD AND AT THE END OF MAINTENANCE PERIOD. NOTIFY OWNER'S REPRESENTATIVE 72 HOURS IN ADVANCE OF EACH REQUIRED INSPECTION. CONTRACTOR SHALL ENSURE REQUIRED PLANTS WILL BE AVAILABLE OR MEET SPECIFICATIONS BEFORE ARRANGING INSPECTION FOR SELECTION AND TAGGING OF PLANTS.
- ALL PLANT MATERIAL TO BE DISEASE FREE AND TRUE TO FORM. SPECIMEN GRADE SINGLE STEM STOCK - UNLESS NOTED OTHERWISE, PLANTS WILL BE REJECTED IF: SOIL BALLS HAVE BEEN CRACKED OR BROKEN BEFORE OR DURING PLANTING OR WHEN BURLAP ROPES REQUIRED IN CONNECTION WITH THEIR TRANSPLANTING HAVE BEEN REMOVED. DO NOT USE PLANTS DAMAGED DURING CONTACT WITH EQUIPMENT, OR PLANTS THAT ARE WILTED, WIND BURNED OR STRESSED. CONTRACTOR TO REPLACE DAMAGED OR REJECTED PLANTS AT NO ADDITIONAL COST TO OWNER.
- STAKE OUT LOCATIONS OF TREES, SHRUBS AND PLANTING BEDS. LOCATIONS OF ALL PLANTS SHALL BE REVIEWED AND APPROVED BY OWNER'S REPRESENTATIVE ON SITE BEFORE PLANTING. PLANTS INSTALLED WITHOUT REVIEW AND APPROVAL MAY REQUIRE TRANSPLANTING OR RELOCATION AS DIRECTED BY OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST.
- ENSURE ALL TREES AND SHRUBS ARE INSTALLED OUTSIDE OF DIKE EXTENTS - REFER TO CIVIL DRAWINGS, TYP.
- CONTRACTOR SHALL VERIFY THAT ALL MINIMUM CLEARANCES ARE PROVIDED BETWEEN PROPOSED TREES AND UNDERGROUND AND/OR OVERHEAD UTILITIES AS DEFINED BY THE LOCAL PARKS AND PLANNING DEPARTMENT.
- PART OF PLANT MATERIAL INSTALLATION SHALL INCLUDE SUFFICIENT PROTECTION TO PREVENT BARK AND TREE DAMAGE DUE TO FORAGING ANIMALS AND ANCHORING SYSTEM TO PREVENT ROOT BREAKAGE DUE TO STRONG WINDS. LANDSCAPE ARCHITECT NOT RESPONSIBLE FOR ANY DAMAGES THAT INCUR DUE TO IMPROPER INSTALLATION.
- DISTURBANCES TO ADJACENT AREAS SHALL BE REPAIRED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
- EROSION CONTROL MATTING REQUIRED ON ALL SLOPES GREATER THAN 3:1 THAT ARE INDICATED TO BE SEEDED.
- 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.

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

BOTANICAL NAME	COMMON NAME	TARGET COVER	% OF SEED MIX (PLS)	Kg REQUIRED (PLS)
Deschampsia cespitosa	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

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

Upland Seed Mix 2A - Upland Areas - Application rate of 58 kg / ha.

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

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

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

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

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

Site Characteristics

Seeding Method	Broadcast
Habitat Type	Wetland
Natural Subregion	Dry Mixedgrass
Incorporation Method	ATV Harrow or hand rake
Depth of Incorporation	5cm to 10cm

Site Characteristics

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

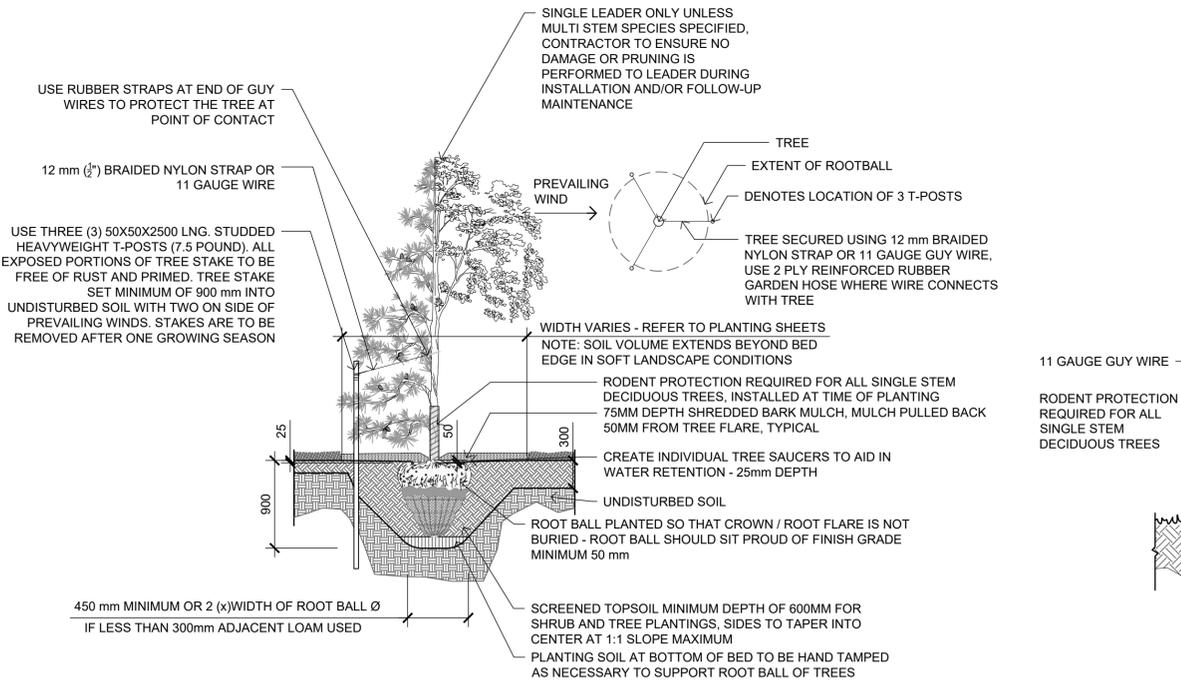
Site Characteristics

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

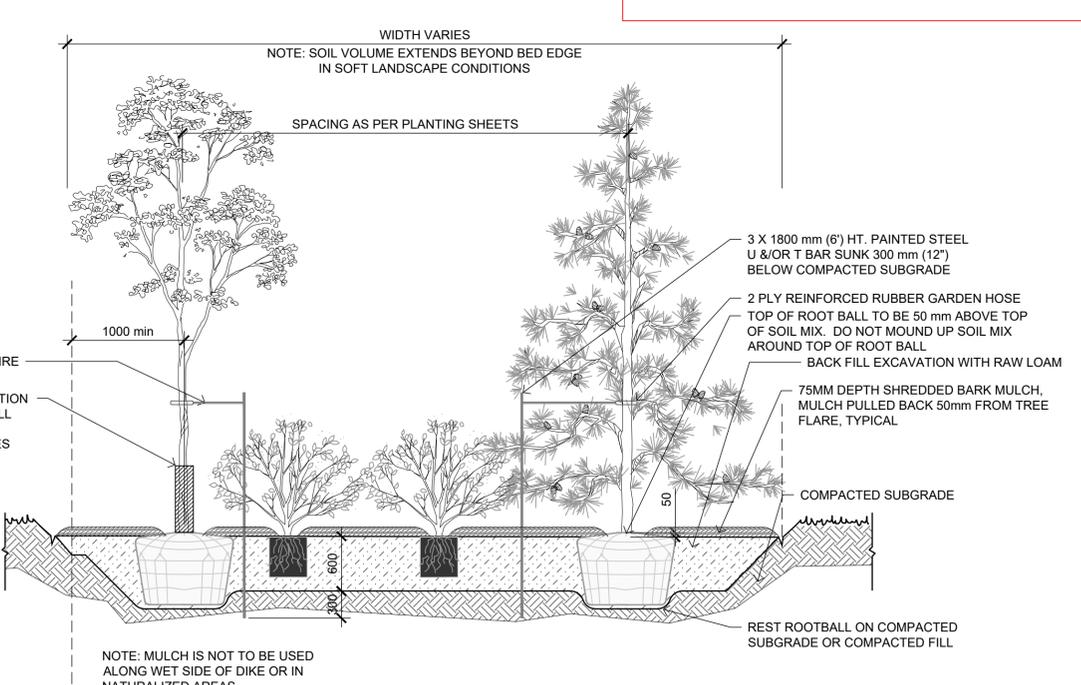
SEEDING NOTES

- ENSURE SEED MIXTURE IS FREE OF ANY WEED SEEDS LISTED AS "PROHIBITED NOXIOUS" OR "NOXIOUS" UNDER THE WEED CONTROL ACT AND SEEDS OF OTHER SPECIES THAT WILL INTERFERE WITH THE GROWTH OF THE SPECIFIED SEED MIXTURE.
- SOW AT THE RATE INDICATED WITH SEED MIXES, DURING CALM WEATHER AND WHEN SOIL MOISTURE CONTENT IS ADEQUATE FOR GERMINATION.
- FOR SLOPES 2:1 OR FLATTER AREAS TO BE SEEDED THAT ARE EASILY ACCESSIBLE APPLY SEED USING A MECHANICAL DRY SPREAD "BRILLION" SEEDER THAT PLACES SEED AT SPECIFIED DEPTH AND RATE AND ROLLS IN A SINGLE OPERATION.
- FOR STEEPER THAN 2:1 SLOPES OR SLOPES THAT ARE NOT EASILY ACCESSIBLE USE MANUALLY OPERATED BROADCAST SEEDER.
- SOW SEED IN TWO DIRECTIONS, 50% OF SEED IN ONE DIRECTION AND REMAINING 50% OF SEED AT RIGHT ANGLES TO FIRST SEEDING PATTERN, USING SAME METHOD OF SEEDING.
- COVER BROADCASTED SEED BY HAND RAKING AND ATV HARROWING-IN.
- OPTIMAL SEEDING PERIODS FOR NATIVE GRASSES:
 - MID TO LATE MAY, EARLY JUNE - NO LATER THAN JUNE 15TH.
 - LATE SEPTEMBER - AFTER FIRST HARD FROST WHEN PLANTS GO DORMANT. DO NOT SEED NEAR END OF SEASON UNTIL THE RISK OF SEED GERMINATION IS LOW. SEED THAT GERMINATES AND DOES NOT FULLY ESTABLISH PRIOR TO END OF GROWING SEASON WILL LIKELY NOT OVERWINTER.
- WATER THE SEEDED AREAS AFTER SEEDING TO ACHIEVE GERMINATION AND A UNIFORM STAND OF GRASS. THE OWNER WILL DETERMINE THE WATERING SCHEDULE AND WILL PROVIDE THE CONTRACTOR WITH AT LEAST 24 HOURS ADVANCE NOTICE TO COMMENCE WATERING SEEDED AREAS.
- APPLY WATER UNIFORMLY TO SEEDED AREAS WITHOUT CAUSING DISPLACEMENT OR EROSION OF THE MATERIALS AND TOPSOIL.
- MINIMIZE TRAVEL ON SEEDED SURFACES.
- USE WATERING EQUIPMENT AND TECHNIQUES AUTHORIZED BY THE OWNER.

SEED MIX SCHEDULES AND SEEDING NOTES 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.



A STANDARD TREE PLANTING
SCALE 1:40



B MIXED PLANTING BED WITH MULCH
SCALE 1:40



Rev	Date	Des	Dwn	Chk	Description
0	2022-10-28	EJW	MD	EJW	ISSUED FOR TENDER

TOWN OF DRUMHELLER PACKAGE C DIKE PROJECT NORTH DRUMHELLER DIKE C PLANTING PLAN			
Project No.	133142	Drawing No.	L-404
Group	LANDSCAPE	Rev.	0