

**BROWN'S
CREEK
WATERSHED
DISTRICT**

1380 W FRONTAGE RD
HIGHWAY 36
STILLWATER, MN
5 5 0 8 2

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WWW.BCWD.ORG

MEMORANDUM

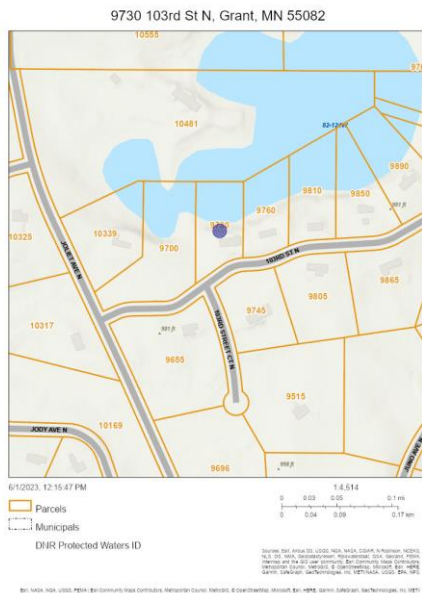
TO: BCWD Board of Managers
FROM: Brett Stolpestad, Washington Conservation District
RE: Nagle Native Landscaping Plan
DATE: June 1st, 2023

City of Grant residents Melissa & Ryan Nagle are applying for BCWD BMP cost-share to improve habitat and implement stormwater best management practices at their residence located at 9730 103rd St N adjacent to Bass Lake East. This project proposes (1) installation of a bioinfiltration practice at the SW corner of property to capture and infiltrate stormwater from the adjacent homes, driveways, and road (2) vegetative enhancement of the upstream ditch situated partially within city right-of-way, and (3) conversion of approximately 0.5 acres of turf to native shortgrass prairie vegetation for habitat enhancement.

Project Estimate: \$22,333.00
Amount of Phosphorus removed: 0.35 lbs/yr
Cost Share requested: \$5,000.00

Requested Board Action: Motion by Board Member 1, seconded by Board Member 2, to approve encumbrance of \$5,000.00 BMP cost share for basin installation, turf conversion to native prairie, and other eligible activities highlighted in the 'Nagle Native Landscape' concept plan.



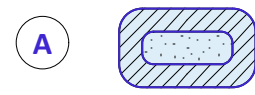
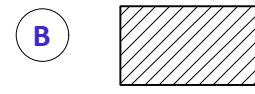

Location & Photos:



Managers:

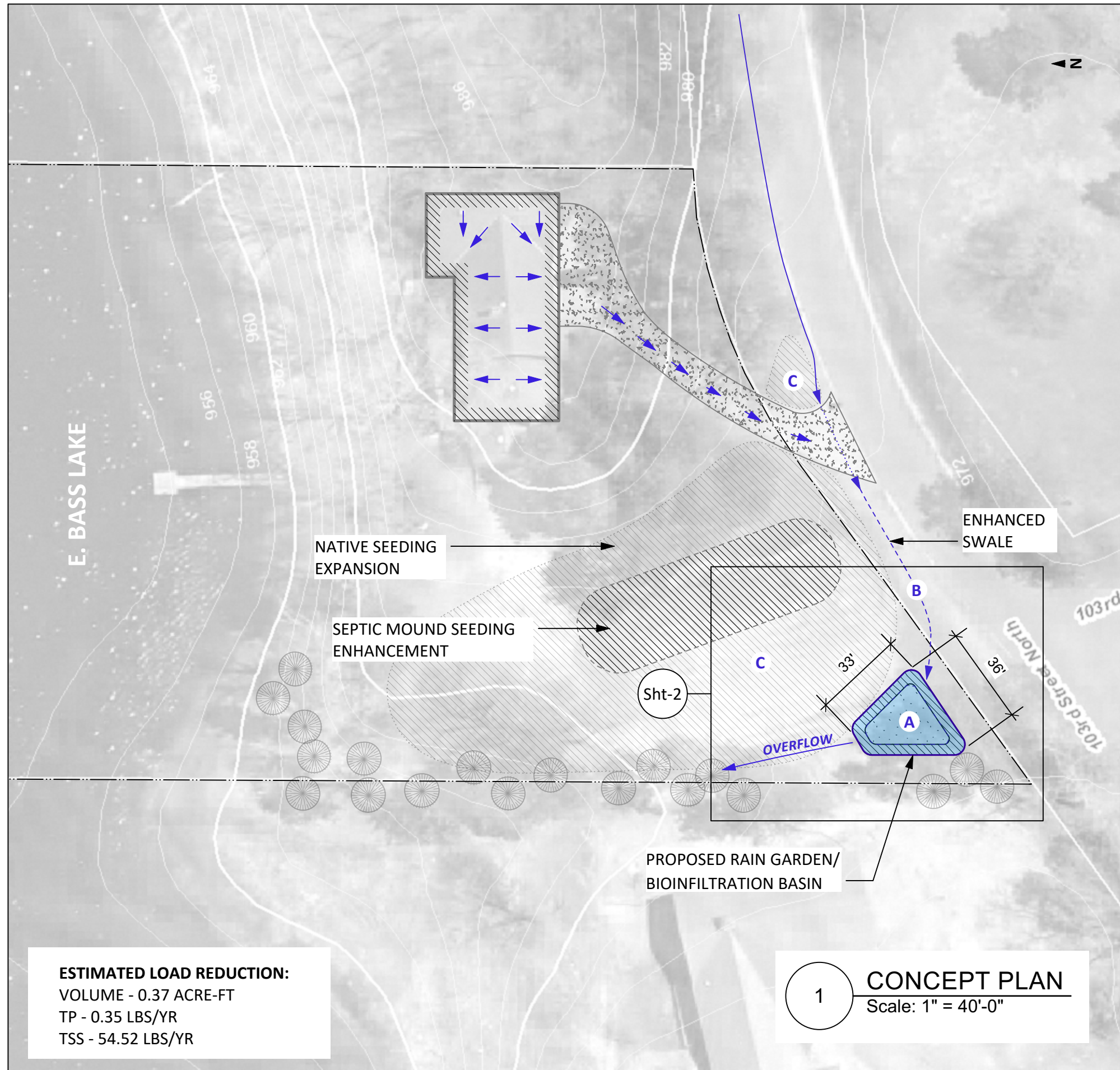
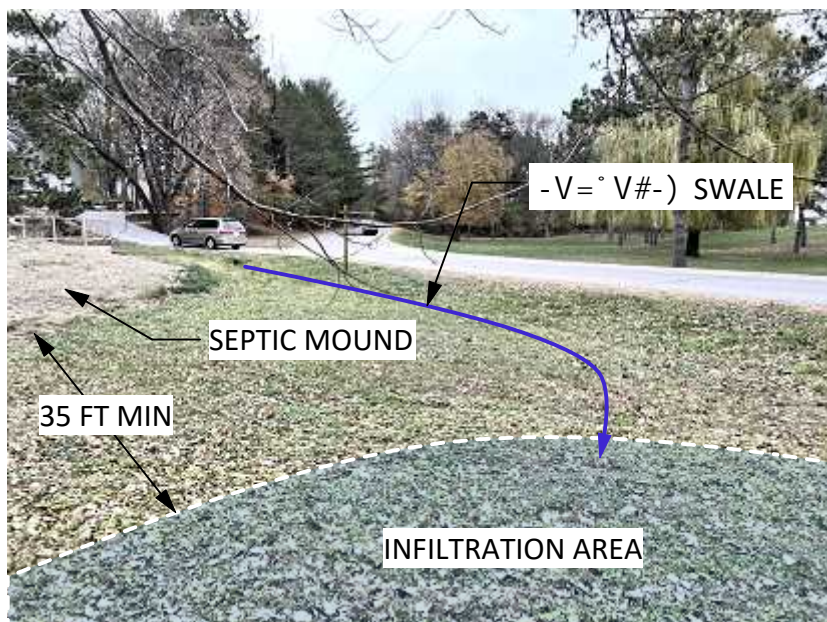
Klayton Eckles, President Celia Wirth, Vice-President Gerald Johnson, Treasurer Chuck Leroux, Secretary

LEGEND

-  PROPERTY LINE
-  FLOW PATHS
-  **A** PROPOSED BIOINFILTRATION BASIN
1,000 SQ-FT/12" MAX PONDING DEPTH
-  **B** NATIVE SEEDING AREAS
0.5 ACRE
-  **C** ENHANCED SWALE
75 LINEAR FEET/10' WIDTH

NOTES:

1. ENSURE MINIMUM SETBACK REQUIREMENTS ARE MET BETWEEN ANY INFILTRATION BMP AND SEPTIC TANK OR LEACH FIELD.
2. SEED MIX FOR SEPTIC MOUND MUST BE CUSTOM DESIGNED WITH APPROPRIATE NATIVE SPECIES.
3. CONCEPTUAL DRAWING FOR REFERENCE USE ONLY -- SIZE AND SHAPE OF BMPs MAY VARY.
4. GRANT AWARD TO BE DETERMINED BY SIZE AND LOCATION OF PROPOSED BMPs AND ASSOCIATED LOAD REDUCTIONS.



ESTIMATED LOAD REDUCTION:
 VOLUME - 0.37 ACRE-FT
 TP - 0.35 LBS/YR
 TSS - 54.52 LBS/YR

1 CONCEPT PLAN
 Scale: 1" = 40'-0"

Washington Conservation District
 455 Hayward Ave N
 Oakdale, MN 55128
 (651) 330-8220
 www.mnwcd.org



plan created by:

Project Address	9730 103rd St N, Stillwater, MN 55082	Drawn	Reviewed	Revision
Project Manager	Brett Stolpestad	Washington Conservation District		

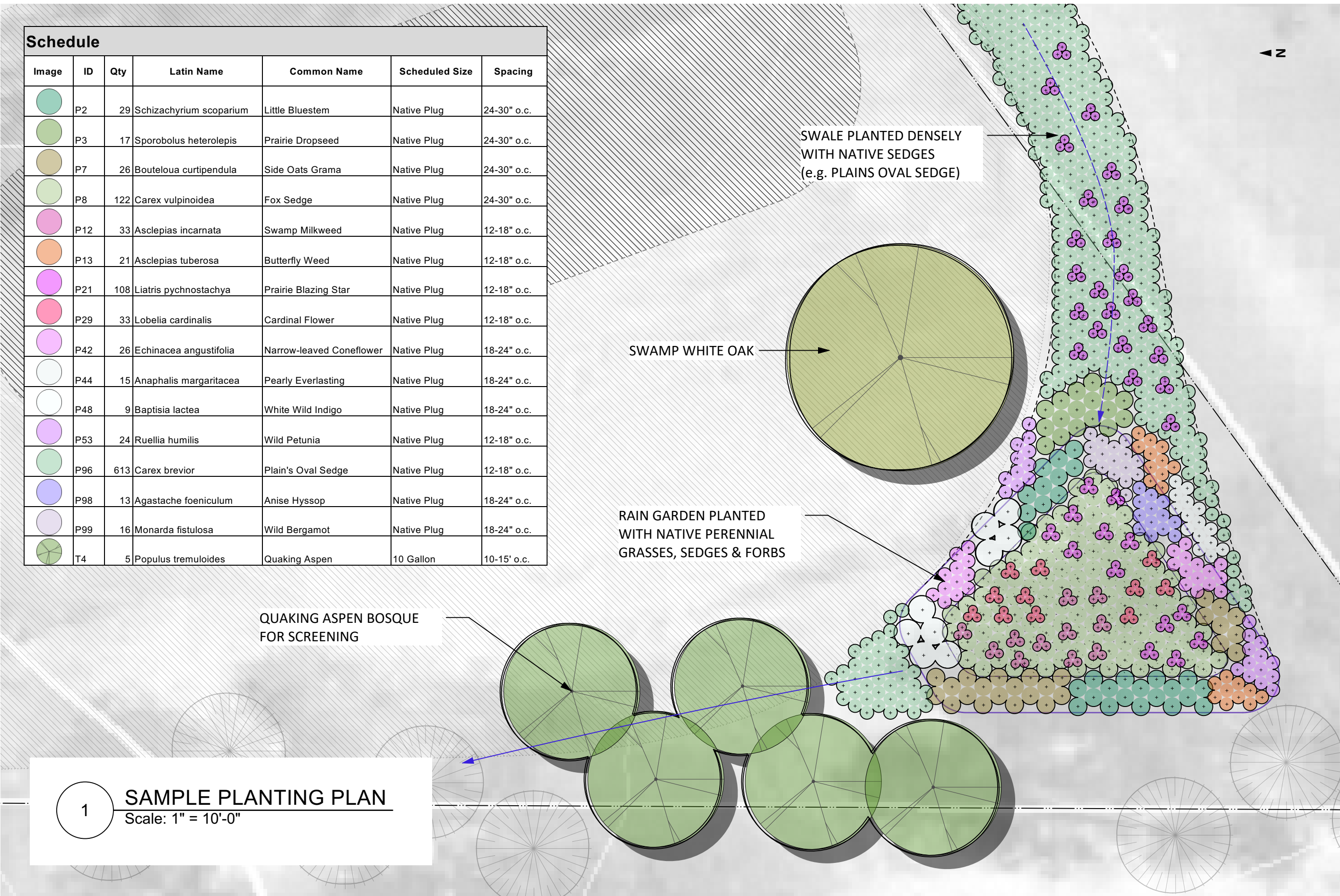
BROWN'S CREEK WATERSHED DISTRICT
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Project Title	NAGLE LANDSCAPE CONCEPT
Sheet Title	CONCEPT PLAN
CAD File Name	Nagle Concept.vrx

Date
2/3/2023

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Schedule						
Image	ID	Qty	Latin Name	Common Name	Scheduled Size	Spacing
	P2	29	Schizachyrium scoparium	Little Bluestem	Native Plug	24-30" o.c.
	P3	17	Sporobolus heterolepis	Prairie Dropseed	Native Plug	24-30" o.c.
	P7	26	Bouteloua curtipendula	Side Oats Grama	Native Plug	24-30" o.c.
	P8	122	Carex vulpinoidea	Fox Sedge	Native Plug	24-30" o.c.
	P12	33	Asclepias incarnata	Swamp Milkweed	Native Plug	12-18" o.c.
	P13	21	Asclepias tuberosa	Butterfly Weed	Native Plug	12-18" o.c.
	P21	108	Liatris pycnostachya	Prairie Blazing Star	Native Plug	12-18" o.c.
	P29	33	Lobelia cardinalis	Cardinal Flower	Native Plug	12-18" o.c.
	P42	26	Echinacea angustifolia	Narrow-leaved Coneflower	Native Plug	18-24" o.c.
	P44	15	Anaphalis margaritacea	Pearly Everlasting	Native Plug	18-24" o.c.
	P48	9	Baptisia lactea	White Wild Indigo	Native Plug	18-24" o.c.
	P53	24	Ruellia humilis	Wild Petunia	Native Plug	12-18" o.c.
	P96	613	Carex brevior	Plain's Oval Sedge	Native Plug	12-18" o.c.
	P98	13	Agastache foeniculum	Anise Hyssop	Native Plug	18-24" o.c.
	P99	16	Monarda fistulosa	Wild Bergamot	Native Plug	18-24" o.c.
	T4	5	Populus tremuloides	Quaking Aspen	10 Gallon	10-15' o.c.



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SAMPLE PLANTING PLAN
Scale: 1" = 10'-0"

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DRY-MESIC PRAIRIE

SCIENTIFIC NAME	COMMON NAME	HEIGHT (ft)	BLOOM COLOR	BLOOM TIME	SUBTYPE
Trees & Shrubs					
<i>Amorpha canescens</i>	Leadplant	1 to 4	Purple	6 7 8	DP/MP/SV
<i>Corylus americana</i>	American Hazelnut	6 to 8	Purple/Green	3 4	SV
<i>Quercus macrocarpa</i>	Bur Oak	70 to 80	Green	6	SV
<i>Quercus ellipsoidalis</i>	Northern Pin Oak	70 to 80	Green	6	SV
<i>Rhus glabra</i>	Smooth Sumac	3 to 15	Red	6 7	DP/MP/SV
<i>Prairie Rose</i>	Rosa arkansana	0.5 to 3.5	Pink	6 7	DP/MP/SV
<i>Prunus Americana</i>	Wild Plum	5 to 25	White	5	DP/MP/SV
<i>Prunus virginiana</i>	Chokecherry	10 to 25	White	5 6	SV
<i>Symphoricarpos occidentalis</i>	Wolfberry	1 to 4	Pink/White	6 7 8	DP/MP/SV
Forbs					
<i>Achillea millefolium</i>	Yarrow	1 to 3	White	6 7 8 9	DP/MP/SV
<i>Agastache foeniculum</i>	Anise Hyssop	2 to 4	Blue	7 8 9 10	DP/MP/SV
<i>Allium stellatum</i>	Prairie Onion	1 to 1.5	Pink	7 8 9	DP
<i>Anemone canadensis</i>	Canada Anemone	1 to 2	White	5 6 7	MP
<i>Anemone cylindrica</i>	Thimbleweed	1 to 2	White	6 7 8	DP
<i>Anemone Patens</i>	Pasque Flower	0.5	Lavender	4 5	DP
<i>Antennaria neglecta</i>	Prairie Pussytoes	0.5	White	4 5 6	DP
<i>Antennaria plantaginifolia</i>	Plantain-leaved Pussytoes	0.5	White	4 5 6	DP
<i>Artemisia ludoviciana</i>	Prairie Sage	1 to 3	White	7 8 9 10	DP/MP
<i>Asclepias tuberosa</i>	Butterfly Weed	1 to 2	Orange	6 7 8 9	DP/MP
<i>Asclepias syriaca</i>	Common Milkweed	2 to 5	Pink	6 7 8	DP/MP
<i>Astragalus canadensis</i>	Canada Milk Vetch	1 to 4	Cream/White	6 7 8	DP/MP
<i>Astragalus crassicaarpus</i>	Ground Plum	0.5 to 2.5	White	4 5	DP
<i>Baptisia alba</i>	White Wild Indigo	2.5 to 3.5	White	6 7 8	DP/MP
<i>Coreopsis palmata</i>	Prairie Coreopsis	2.5 to 3.5	Yellow	6 7 8 9	DP/MP
<i>Dalea candida</i>	White Prairie Clover	1.5 to 2.5	White	6 7 8 9	DP/MP/SV
<i>Dalea purpurea</i>	Purple Prairie Clover	1.5 to 2.5	Purple	6 7 8 9	DP/MP/SV
<i>Desmodium canadense</i>	Showy Tick-trefoil	2 to 6	Pink	7 8 9	DP/MP/SV
<i>Drymocallis arguta</i>	Tall Cinquefoil	1 to 3	White	6 7 8	DP/MP/SV
<i>Euphorbia corollata</i>	Flowering Spurge	2 to 3.5	White	5 6 7 8	DP
<i>Geum triflorum</i>	Prairie Smoke	0.5 to 1	Red	5 6	DP
<i>Helianthus maxmilliani</i>	Maxmillian Sunflower	6.0+	Yellow	8 9 10	MP
<i>Helianthus pauciflorus</i>	Stiff Sunflower	4 to 5	Yellow	7 8 9	DP/MP
<i>Heliopsis helianthoides</i>	False Sunflower	4 to 5	Yellow	6 7 8 9 10	MP/SV
<i>Heuchera richardsonii</i>	Prairie Alumroot	1.5 to 3	Beige	5 6 7	MP/SV
<i>Lespedeza capitata</i>	Bush Clover	2 to 3	White	7 8 9 10	DP/MP
<i>Liatis aspera</i>	Rough Blazing Star	1.5 to 3	Purple	7 8 9	DP/MP
<i>Liatis punctata</i>	Dotted Blazing Star	1.5 to 2.5	Purple	7 8 9	DP/MP
<i>Lithospermum canescens</i>	Hoary Puccoon	0.5 to 1.5	Orange	5 6 7 8	SV
<i>Lobelia spicata</i>	Pale-spike Lobelia	1 to 2	White	6 7 8	MP
<i>Lupinus perennis</i>	Wild Lupine	1.5 to 2	Blue	5 6 7	DP
<i>Monarda fistulosa</i>	Wild Bergamot	3 to 4	Lavender	7 8	DP/MP/SV
<i>Monarda punctata</i>	Spotted Bee Balm	3 to 4	Frosted Pink	7 8	DP

SCIENTIFIC NAME	COMMON NAME	HEIGHT (ft)	BLOOM COLOR	BLOOM TIME	SUBTYPE
<i>Pedicularis canadensis</i>	Wood Betony	0.5 to 2.5	Yellow/White	5 6	MP/SV
<i>Pediomelum esculentum</i>	Prairie Turnip	1 to 1.5	Light Blue	5 6 7	DP
<i>Penstemon grandiflorus</i>	Large Beardtongue	1 to 3	Pink	5 6 7	DP
<i>Phlox pilosa</i>	Prairie Phlox	1.5 to 2	Pink	5 6	DP/MP
<i>Ratibida pinnata</i>	Yellow Coneflower	2 to 4.5	Yellow	7 8 9 10	DP/MP
<i>Rudbeckia hirta</i>	Black Eyed Susan	2 to 3	Yellow	6 7 8 9 10	DP/MP
<i>Ruellia humilis</i>	Wild Petunia	1.0	Pink	6 7 8 9	DP
<i>Sisyrinchium campestre</i>	Prairie Blue-eyed Grass	0.5 to 1.5	White/Blue	5 6 7	DP
<i>Solidago nemoralis</i>	Gray Goldenrod	2 to 3	Yellow	8 9	DP/MP/SV
<i>Solidago rigida</i>	Stiff Goldenrod	2 to 3	Yellow	8 9	DP/MP/SV
<i>Solidago speciosa</i>	Showy Goldenrod	2 to 3	Yellow	8 9	DP/MP/SV
<i>Symphotrichum ericoides</i>	Heath aster	1 to 3	White	8 9 10	DP/SV
<i>Symphotrichum laevis</i>	Smooth Aster	1.5 to 2.5	Blue	7 8 9 10	DP/MP
<i>Symphotrichum oblongifolius</i>	Aromatic Aster	1 to 2	Violet	8 9 10	DP
<i>Symphotrichum oolentangiense</i>	Sky-blue Aster	1 to 3	Blue	8 9 10	DP
<i>Symphotrichum sericeus</i>	Silky Aster	1 to 2	Purple	8 9 10	DP/MP
<i>Tradescantia bracteata</i>	Prairie Spiderwort	1.5 to 2.5	Blue	6 7 8	DP
<i>Verbena stricta</i>	Hoary Vervain	1 to 3	Blue	6 7 8 9	DP
<i>Viola pedata</i>	Bird's Foot Violet	0.5	Purple	4 5 6	DP
<i>Viola pedatifida</i>	Prairie Violet	0.5	Purple	4 5 6	DP
<i>Zizia aptera</i>	Heart-leaf Alexanders	1.5 to 2.5	Yellow	5 6	DP/MP
Grasses & Sedges					
<i>Andropogon gerardii</i>	Big Bluestem	3 to 6	Purplish	7 8 9	DP/MP/SV
<i>Bouteloua curtipendula</i>	Side Oats Grama	1.5 to 2.5	Red-green	7 8 9	DP/MP
<i>Bouteloua gracilis</i>	Blue Grama	1.0	Purplish	7 8 9	DP
<i>Bouteloua hirsuta</i>	Hairy Grama	0.5 to 2.5	Red-green	6 7 8	DP
<i>Bromus kalmii</i>	Kalm's Brome	2 to 3	Green	6 7	DP/MP
<i>Calamovilfa longifolia</i>	Sand Reed Grass	5 to 6	Beige	7 8 9	DP
<i>Carex muhlenbergii</i>	Sand-bracted Sedge	1.0	Green	5 6	DP
<i>Carex brevior</i>	Plains Oval Sedge	1.0	Brown	5 6	DP
<i>Danthonia spicata</i>	Poverty Oat Grass	1.0	Tan	6	SV
<i>Elymus canadensis</i>	Canada Wild Rye	3 to 4	Green	7 8	DP/MP/SV
<i>Eragrostis spectabilis</i>	Purple Lovegrass	1 to 2	Purple	7 8	MP/SV
<i>Koeleria macrantha</i>	June Grass	1 to 2	Green	6 7	DP
<i>Muhlenbergia cuspidata</i>	Plains Muhly	1 to 2	Beige	8 9 10	DP
<i>Panicum acuminatum</i>	Hairy Panic Grass	1 to 2	Beige	7 8 9	DP/MP
<i>Panicum oligosanthes</i>	Scribner's Panic Grass	1 to 2	Beige	7 8 9	DP
<i>Panicum virgatum</i>	Switch Grass	3 to 6	Purplish	6 7 8 9 10	DP/MP/SV
<i>Schizachyrium scoparium</i>	Little Bluestem	1.5 to 3	Amber	7 8 9	DP/MP/SV
<i>Sorghastrum nutans</i>	Indian Grass	4 to 6	Amber	7 8 9	DP/MP/SV
<i>Sporobolus heterolepis</i>	Prairie Dropseed	1.5 to 3	Green	8 9 10	DP/MP
<i>Stipa spartea</i>	Porcupine Grass	2 to 4	Beige	5 6	DP

DP = Dry Prairie
MP = Mesic Prairie
SV = Savanna

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Project Title NAGLE LANDSCAPE CONCEPT	Sheet Title SPECIES RECOMMENDATIONS
CAD File Name: Nagle Concept.vrx	

Date
2/3/2023

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ITEM NO.	DESCRIPTION	SPEC	UNITS	EST. QTY.	UNIT PRICE	AMOUNT
2021.501	MOBILIZATION	2021	LS	1	\$ 1,500.00	\$ 1,500.00
2106.507	EXCAVATION - COMMON	2106	CY	25	\$ 100.00	\$ 2,500.00
2575.605	WEED SPRAYING SPECIAL	2575	ACRE	0.9	\$ 600.00	\$ 540.00
2575.505	SOIL BED PREPARATION	2575	ACRE	0.45	\$ 500.00	\$ 225.00
2574.505	SUBSOILING	2574	ACRE	0.02	\$ 5,000.00	\$ 100.00
2575.505	SEEDING	2575	ACRE	0.45	\$ 500.00	\$ 225.00
2574.507	FILTER TOPSOIL BORROW	2572	CY	15	\$ 65.00	\$ 975.00
2571.502	DECIDUOUS TREE 2" CAL B&B	2571	EACH	6	\$ 750.00	\$ 4,500.00
2571.527	PERENNIAL PLUGS	2571	PLT	1200	\$ 3.50	\$ 4,200.00
2575.508	SEED MIXTURE 35-621 (OR APPROVED EQ)	2575	LB	5	\$ 100.00	\$ 500.00
2573.503	SEDIMENT CONTROL LOG TYPE WOOD FIBER	2573	LF	175	\$ 5.00	\$ 875.00
2573.503	SILT FENCE, TYPE HI	2573	LF	200	\$ 2.65	\$ 530.00
2575.504	ROLLED EROSION PREVENTION CATEGORY 10	2575	SY	500	\$ 2.00	\$ 1,000.00
2575.507	MULCH MATERIAL TYPE 6	2575	CY	10	\$ 125.00	\$ 1,250.00
2575.509	MULCH MATERIAL TYPE 8	2575	TON	0.25	\$ 2,000.00	\$ 500.00

Subtotal	\$	19,420.00
Contingency (15%)	\$	2,913.00
Total Estimate Cost	\$	22,333.00