

CITY OF MADISON

CITY ENGINEERING DIVISION DEPARTMENT OF PUBLIC WORKS PLAN OF PROPOSED IMPROVEMENT

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HILL VALLEY PHASE 1
STORMWATER MANAGEMENT
CITY PROJECT NO. 15669
CONTRACT NO. 9645

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 $\begin{array}{c} \textit{PUBLIC IMPROVEMENT PROJECT} \\ \textit{APPROVED} \end{array}$

JULY 1, 2025

BY THE COMMON COUNCIL OF MADISON, WISCONSIN

PUBLIC IMPROVEMENT DESIGN APPROVED BY:

histoph Patghork 08/28/2025

City Engineer

Date

STORMWATER MANAGEMENT PLAN DESIGNED BY:



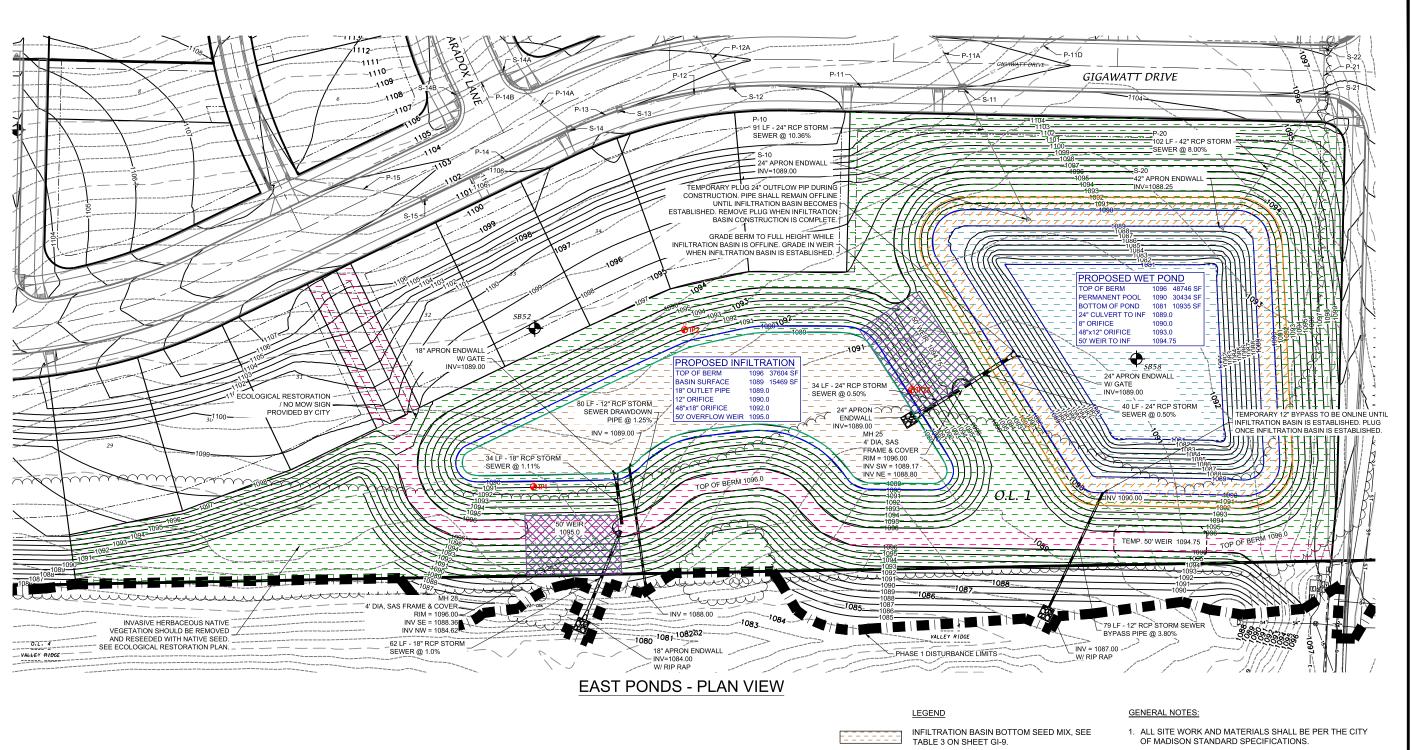
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PHASE 1 LIMITS

SEE PROJECT NO. 15668



PROPOSED PONDS



PRAIRIE SEED MIX, SEE TABLE 1 ON SHEET GI-9.

WET POND PERIMETER SEED MIX, SEE TABLE 2
ON SHEET GI-9.
SHORTGRASS GRAMINOID SEED MIX, SEE

TABLE 4 ON SHEET GI-9.

STORMWATER OVERFLOWS. RESTORED WITH

PROPEX PYRAMAT 25.

WATER SURFACE

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RIP RAP (SIZE PER CITY OF MADISON STANDARD DETAIL DRAWING 5.4.4)



TEST PIT

See Sheet GI-7 & GI-8 for RESTORATION NOTES

- 2. EROSION CONTROL MEASURES SHALL BE PLACED PER THE APPROVED EROSION CONTROL PLAN.
- 3. LENGTHS OF CULVERTS INCLUDE ENDWALLS.
- 4. CULVERT LENGTHS SHALL BE FIELD VERIFIED DURING CONSTRUCTION TO ENSURE THAT THEY ARE LONG ENOUGH TO CONFORM TO TYPICAL CROSS SECTION.
- 5. ALL DISTURBED AREAS SHALL RECEIVE A MINIMUM OF 6" OF TOPSOIL, SEED AND MULCH. SEED MIXTURE SHALL BE PER THE CITY OF MADISON REQUIREMENTS.
- 6. ANY AREAS WITHIN STORMWATER OUTLOT THAT ARE NOT BEING GRADED, INVASIVE HERBACEOUS VEGETATION SHOULD BE REMOVED AND RESEEDED WITH NATIVE SEED.
- 7. SEE APPROVED CITY ENGINEERING PLANS FOR SITE STORM SEWER TYPE, LENGTHS, AND SIZES.
- 8. PARK DIVISION APPROVAL FOR USE OF PARK LANDS FOR ANY STAGING/STOCKPILING, ETC REQUIRED.



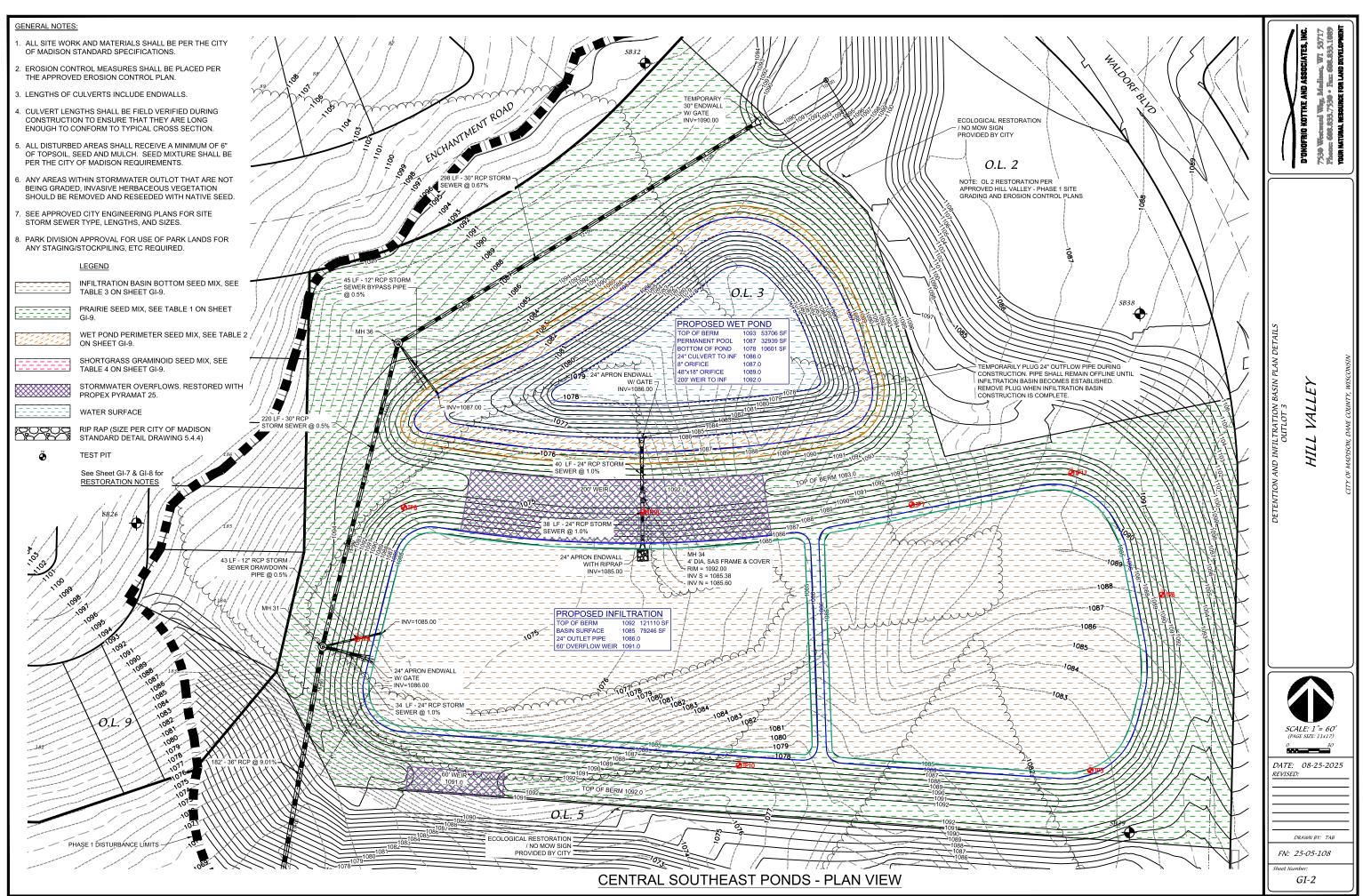
VALLEY

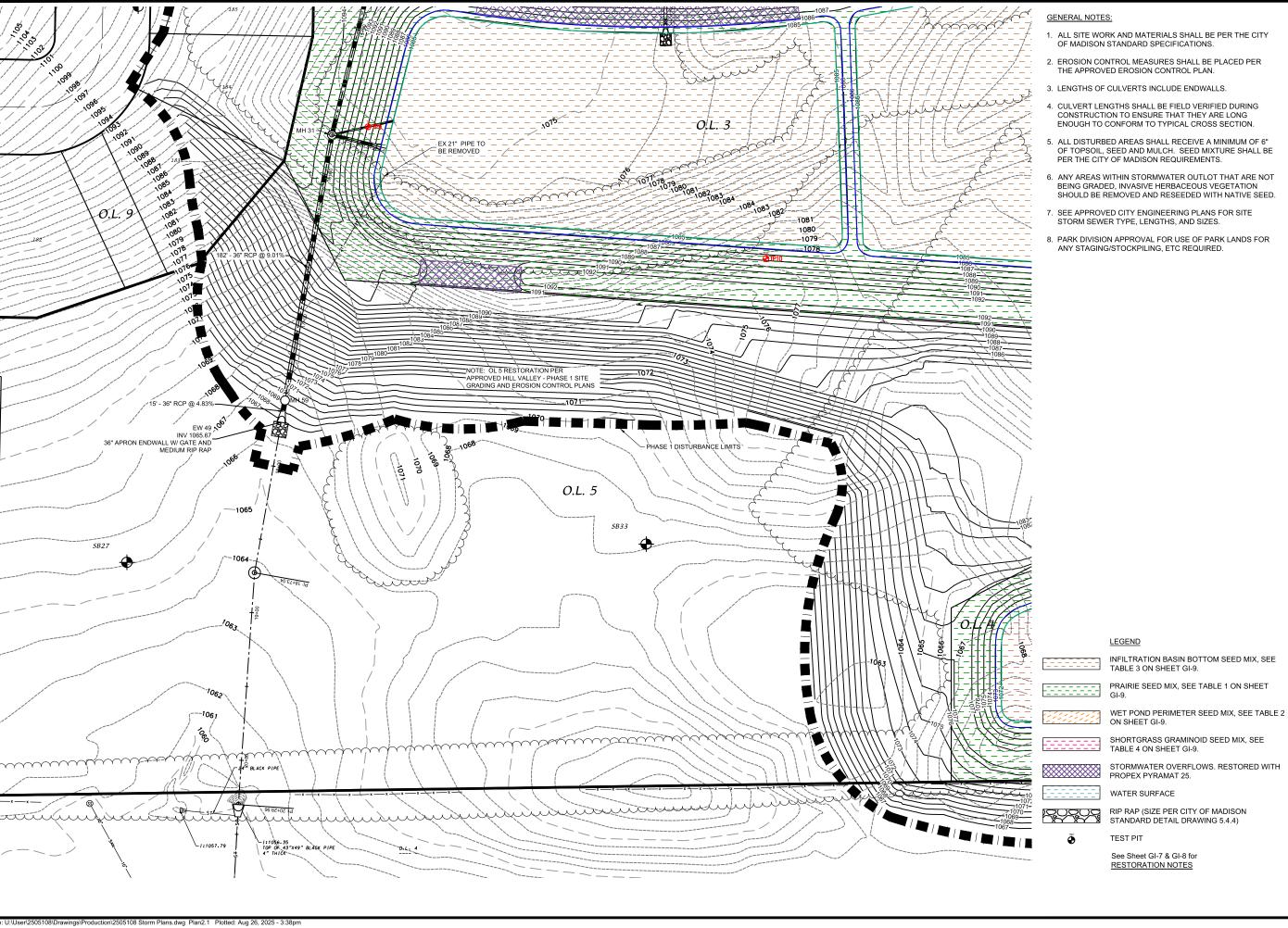
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Sheet Number:

GI-1





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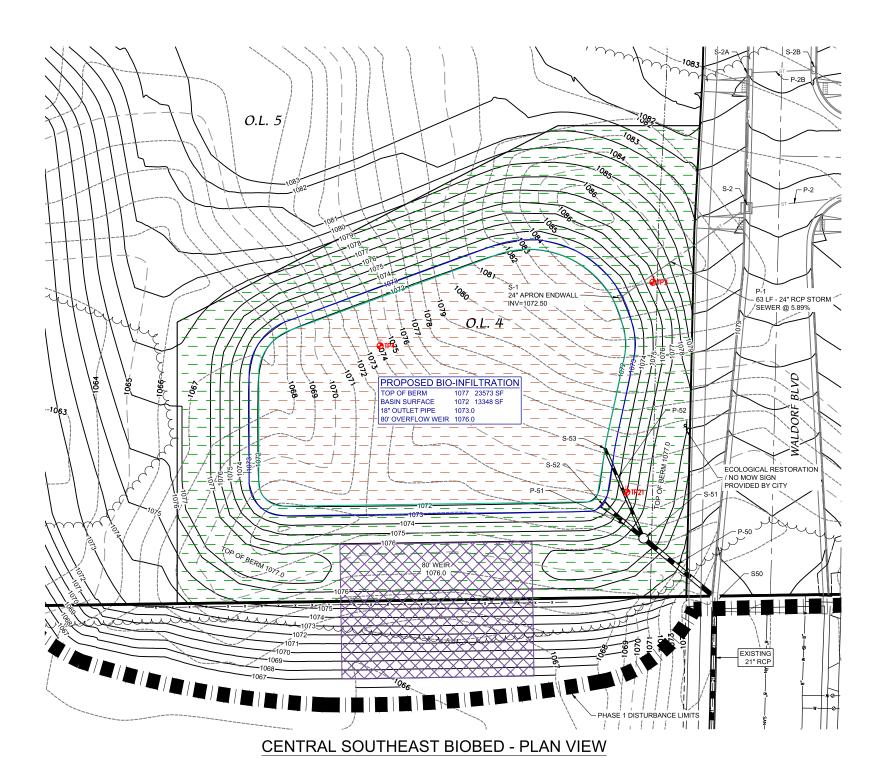
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Sheet Number: GI-3



GENERAL NOTES:

- ALL SITE WORK AND MATERIALS SHALL BE PER THE CITY OF MADISON STANDARD SPECIFICATIONS.
- EROSION CONTROL MEASURES SHALL BE PLACED PER
 THE APPROVED EROSION CONTROL PLAN.
- 3. LENGTHS OF CULVERTS INCLUDE ENDWALLS.
- CULVERT LENGTHS SHALL BE FIELD VERIFIED DURING CONSTRUCTION TO ENSURE THAT THEY ARE LONG ENOUGH TO CONFORM TO TYPICAL CROSS SECTION.
- ALL DISTURBED AREAS, EXCEPT FOR THE BASIN BOTTOM, SHALL RECEIVE A MINIMUM OF 6" OF TOPSOIL, SEED AND MULCH. SEED MIXTURE SHALL BE PER THE CITY OF MADISON REQUIREMENTS.
- 6. BASIN BOTTOM SHALL BE RESTORED PER BIO-INFILTRATION DETAIL ON SHEET GI-8.
- 7. ANY AREAS WITHIN STORMWATER OUTLOT THAT ARE NOT BEING GRADED, INVASIVE HERBACEOUS VEGETATION SHOULD BE REMOVED AND RESEEDED WITH NATIVE SEED.
- 8. SEE APPROVED CITY ENGINEERING PLANS FOR SITE STORM SEWER TYPE, LENGTHS, AND SIZES.
- PARK DIVISION APPROVAL FOR USE OF PARK LANDS FOR ANY STAGING/STOCKPILING, ETC REQUIRED.

TLOT 4

HILL VALLEY

LEGEND

BIO-INFILTRATION BASIN BOTTOM PLUG PLANTED, SEE BIO-INFILTRATION DETAIL ON SHEET GI-8.

PRAIRIE SEED MIX, SEE TABLE 1 ON SHEET GI-9.

WET POND PERIMETER SEED MIX, SEE TABLE 2

ON SHEET GI-9.

SHORTGRASS GRAMINOID SEED MIX, SEE TABLE 4 ON SHEET GI-9.

STORMWATER OVERFLOWS. RESTORED WITH PROPEX PYRAMAT 25.

WATER SURFACE

RIP RAP (SIZE PER CITY OF MADISON STANDARD DETAIL DRAWING 5.4.4)

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TEST PIT

See Sheet GI-7 & GI-8 for RESTORATION NOTES

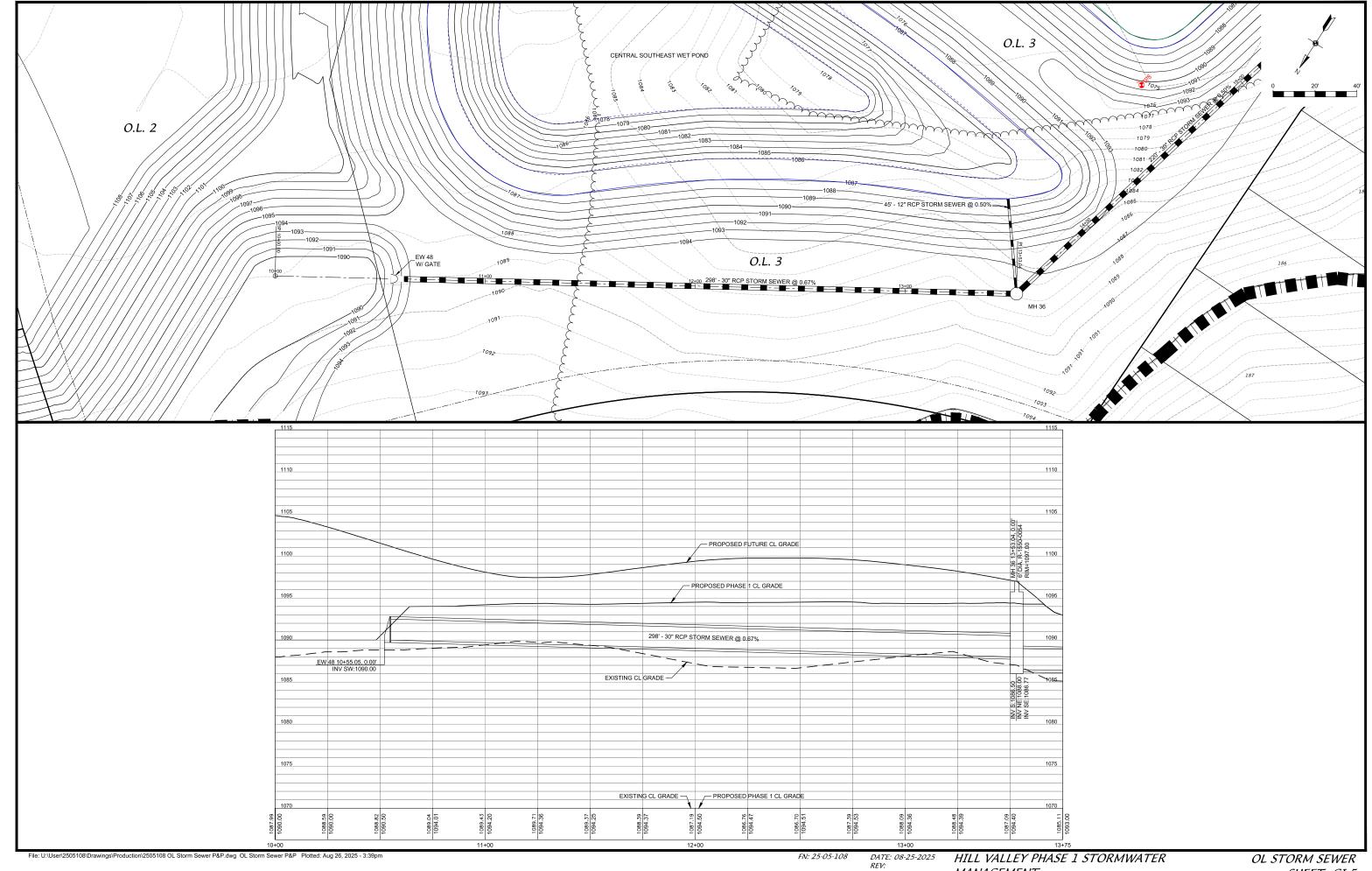


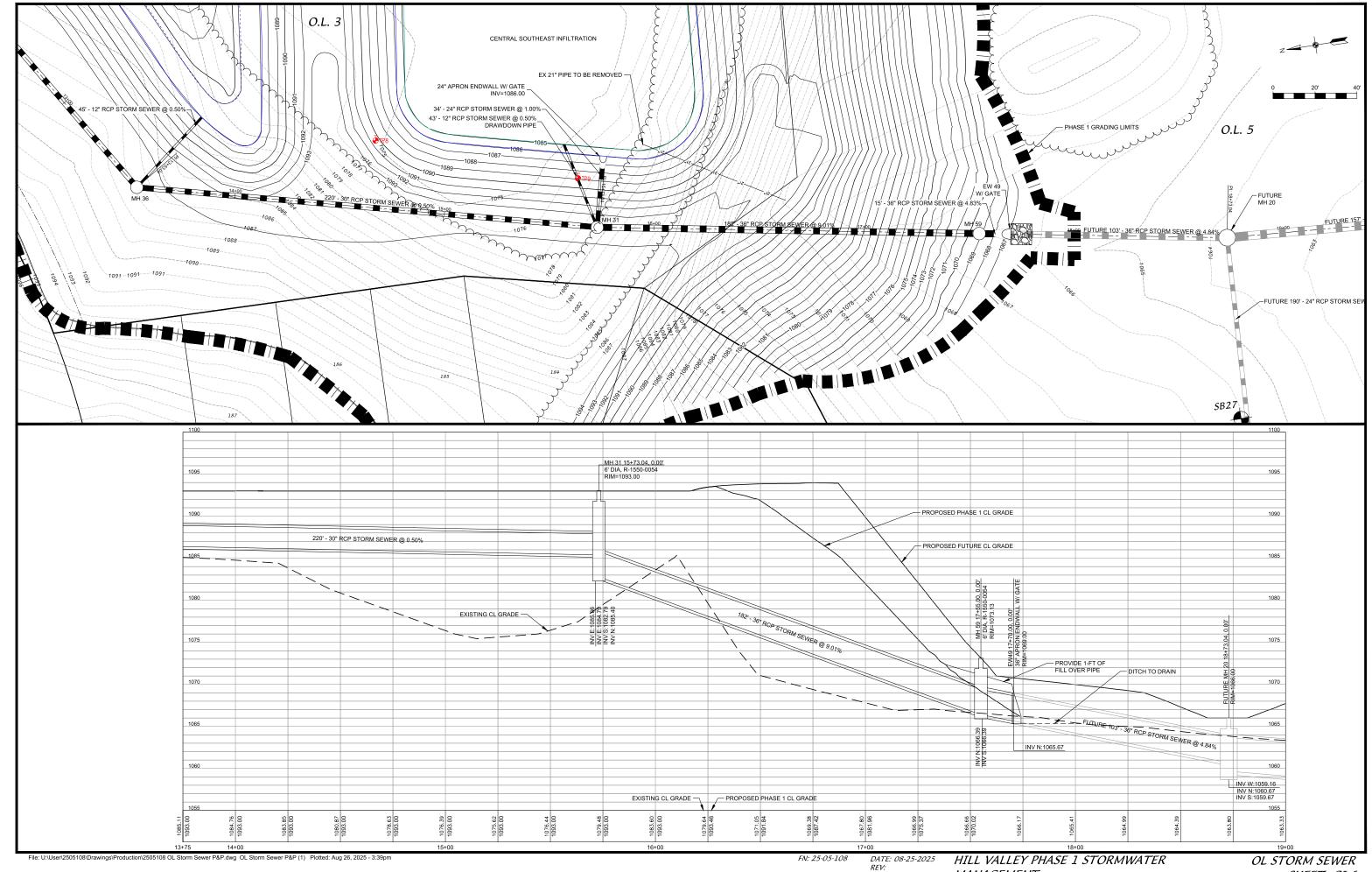
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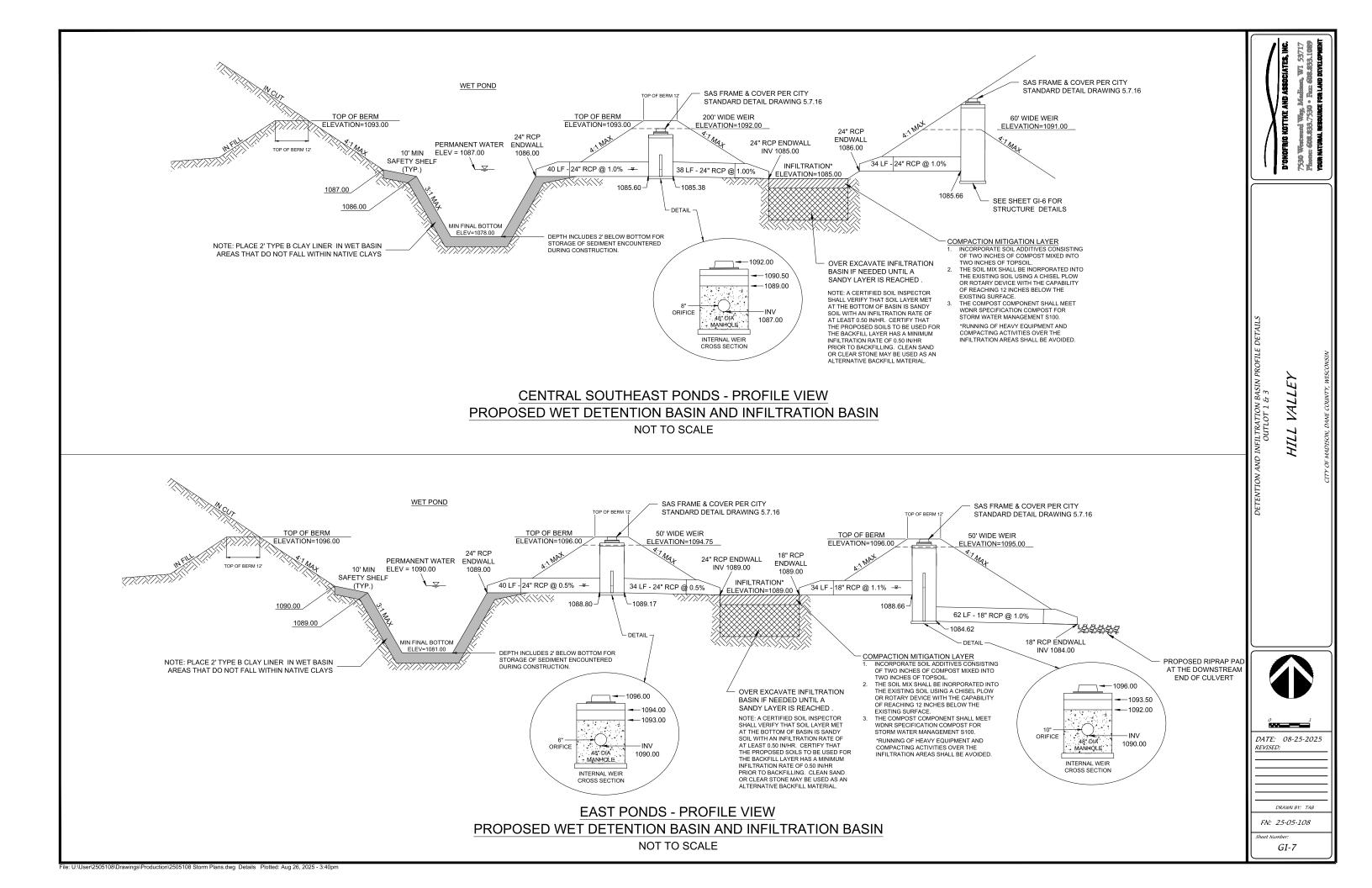
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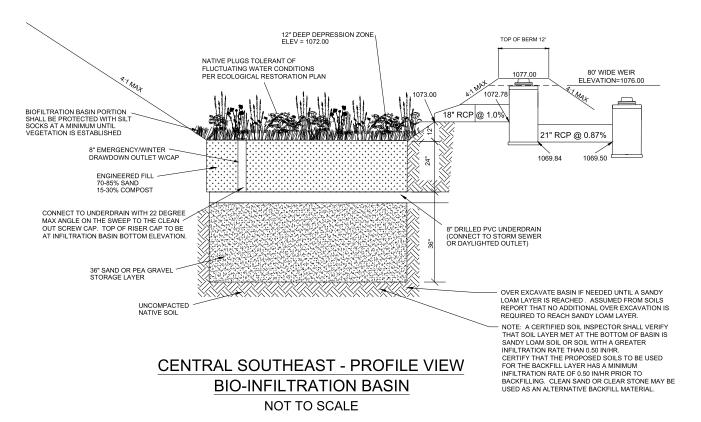
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Start of Work - Public Outlots and Green Infrastructure:

- Prior to beginning work on public improvements or final grading on lands to be dedicated to the public (including outlots and easements) a preconstruction meeting shall be held and notice of the start of work shall be provided to the City Engineer a minimum of filteen (15) working days prior to starting work. The Contractor's ecosystemic ecosystemic stablishment. subcontractor shall be required to alter the preconstruction meeting for any work that includes native seeding, planting and professional ecosystem establishment.
- Rough grading of the lands to be dedicated to the public may occur prior to the preconstruction meeting provided all required land disturbance permits are in place and any applicable site grading and erosion control plans have been approved.
- 3. Final grading shall not occur until the pre-construction meeting has occurred and the final plans are issued by the City of Madison
- 4. Final seeding may not occur until the as-built has been approved by the City of Madison
- 5. Final grading and seeding for professional ecosystem establishment for stormwater management outlots and other public storm green infrastructure shall be completed by the date submitted with the erosion control permit.

As-Builts - Public Outlots and Green Infrastructure:

- 1. Either the Contractor or the City shall be responsible for obtaining asbuilts of construction prior to the Contractor's initial seeding/planting in stormwater outlots and areas of other public green infrastructure. The Contractor shall inform the City at the pre-construction meeting if they will take on the as-built responsibilities or defer to the City to complete the required as-built survey work.
- The Contractor shall provide the City with a schedule of construction and notify the City at least fifteen (15) working days prior to the anticipated final grading work commencing The Contractor shall then notify the City at least five (5) working days prior to the anticipated date of final grading completion and the site being ready for as-built surveying.
- The Contractor shall reimburse the City as defined in Section O of the 9645 Developer Agreement, Hill Valley Phase 1 Stormwater Management. Developer to Reimburse the City of Costs Sustained.
- If the City is responsible to complete the as-built survey, was provided proper notice by the Contractor as defined above, and fails to obtain asbuilts within five (5) working days of
 final grading being completed, the final grading shall be considered approved in regards to as-built survey requirements.
 If the Contractor is responsible to complete the as-built survey the City shall have two (2) working days to review and approve or reject the asbuilt survey from the date it is
- If the Contractor is responsible to complete the as-built survey the City shall have two (2) working days to review and approve or reject the asbuilt survey from the date it is submitted by the Contractor. Final grading shall be considered approved in regards to as-built survey requirements should the City fail to approve or provide response to the Contractor's as-built survey submittal within the allowed two (2) working days.

Professional Ecosystem Establishment on Public Stormwater Outlots and Other Public Green Infrastructure:

- The Developer shall be required to hire City of Madison prequalified ecological restoration contractor under Category 246 Ecological Restoration of the Prequalified Contractors
 Qualified for Approval to Bid on Public Works Contracts or work on Public Works contracts and/or Private Developments to seed and to perform professional ecosystem
 establishment two growing seasons.
- 2. Developer shall be responsible for removing existing vegetation as recommended by the City Engineer to prepare the site for native plant seeding and professional ecosystem establishment
- establishment.

 3. After seeding, the Developer's ecological restoration contractor shall maintain the newly seeded area with the goal of native seed establishment from the initial native plant
- seeding for a minimum of two consecutive growing seasons. For all native seeding done after October 14th, the first growing season begins in spring of the following year.

 4. The growing season is defined as from the last frost in spring to the first frost in fall.
- The Developer shall be responsible for seeding with a native species mix that shall be approved by the City of Madison. This mix shall be referenced on the plan sheet provided and sealed by the Developer's Engineer and approved by City Engineering and included in the professional ecosystem establishment plan. Refer to City of Madison Standard Specifications Article 207.2(a) for lists of approved seed mixes by site, custom seed mixes approved by the City shall also be accepted. Seeding shall be performed as specified

in Article 207 of the City of Madison Standard Specifications. 6. Requirements of Professional Ecosystem Establishment Plan

- a. The following shall be included in the plan and be considered part of this contract:
 - The means and methods for removal all and any types of vegetation shall be included in the professional ecosystem establishment plan
- ii. Overseeding as part of establishment and disturbance shall be included in the contract.
- iii. All proposed native seed mixes.
- iv. A schedule of ecosystem establishment activities, including site preparation, seeding, and management.
- v. Management means and methods during the first and second growing season for obtaining ecological restoration.
- vi. In areas where there are existing trees that will not be impacted by grading. This shall include an inventory and assessment of existing trees.
- vii. Seeding shall be required under erosion control matting, except for overseeding and as required to supplement non stratified seed mix.
- 7. Seeding that occurs between April 15th and October 14th shall require non stratified seed mix, and entire seeded area shall be overseeded with native seed mix specified in
- 8. The Developer is responsible for submitting the seed mix labels for approval by the City of Madison prior to installation.
- The Developer shall be required to notify the City Engineer a minimum of five (5) working days prior to seeding. The seeding date will determine the start of the first year growing season.
- 10.The Developer shall be responsible for all repairs, erosion, etc. during professional ecosystem establishment.
- 11.Ecological Restoration Guarantee Deposit: The Developer shall provide the City with a deposit to guarantee the restoration and two-year maintenance per plans approved by the City Engineer
- by the City Engineer.

 12.The deposit shall be a cash deposit in an amount determined by the City Engineer.

ONOFRIC KUTTKE AND ASSOCIATES, INC. 30 Westward Way, Madinos, WT 53717 Westware 608.833.7550 ° Res. 608.833.1099

I BASIN PROFILE DETAIL & NOTES

VALLEY



DATE: 08-25-2025 REVISED:

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GI-8

Seed Installation Location and Rates:

- 1. Prairie Seed Mix, Table 1. Prairie Seed Mix, shall be installed along the pond and basin slopes, and over the remainder of the outlot at a rate of 14 lb/acre and approximately 75 seeds/ft². Refer to seed mix.

 2. Wet Pond Perimeter Seed Mix, Table 2. Wet Pond Perimeter Seed Mix, shall be installed in a band covering the safety shelf and 2 ft beyond the waters edge, at a rate of 5 lb/acre and approximately 101 seeds/ft².

 3. Infiltration Basin Bottom Seed Mix, Table 3. Infiltration Basin Bottom Seed Mix, shall be installed in the bottom of the infiltration basin at a rate of 8 lb/acre and approximately 91 seeds/ft².

Table 1. Prairie Seed Mix

Nomenc	Seed Metrics				
		Oz/Acre	Seeds/ft ²	% Mix by No.	
Scientific Name	Common Name			Seeds	
Grasses, Sedges, Rushes	In: ni i			1 100	
Andropogon gerardii	Big Bluestem	4.0	0.9	1.23	
Bouteloua curtipendula	Side oats Grama	60.0	8.3	11.03	
Bromus kalmii	Prairie Brome	4.0	0.7	0.98	
Carex bicknellii	Bicknell's Oval Sedge	1.0	0.4	0.52	
Carex brevior	Fescue Sedge	1.5	1.0	1.33	
Carex molesta	Field Oval Sedge	2.0	1.1	1.53	
Elymus canadensis	Canada Wild Rye	36.0	4.3	5.74	
Elymus virginicus	Virginia Wild Rye	16.0	1.5	2.06	
Panicum virgatum	Switch Grass	2.5	0.8	1.07	
Schizachyrium scoparium	Little Bluestem	32.0	11.0	14.71	
Sorghastrum nutans	Indian Grass	6.0	1.7	2.21	
Sporobolus heterolepis	Prairie Dropseed	1.0	0.4	0.49	
Forbs					
Achillea millefolium	Yarrow	1.0	4.1	5.46	
Agastache foeniculum	Blue Giant Hyssop	1.0	2.1	2.76	
Allium cernuum	Nodding Onion	1.0	0.2	0.23	
Amorpha canescens	Lead Plant	1.0	0.4	0.49	
Asclepias syriaca	Common Milkweed	1.0	0.1	0.12	
Asclepias tuberosa	Butterfly Weed	2.0	0.2	0.26	
Astragalus canadensis	Canadian Milk Vetch	1.0	0.4	0.52	
Baptisia alba	White Wild Indigo	1.0	<0.1	0.05	
Chamaecrista fasciculata	Partridge Pea	8.0	0.5	0.66	
Coreopsis palmata	Prairie Coreopsis	1.0	0.2	0.31	
Dalea candida	White Prairie Clover	1.0	0.4	0.58	
Dalea purpurea	Purple Prairie Clover	4.0	1.4	1.84	
Drymocallis arguta	Prairie Cinquefoil	0.5	2.6	3.52	
Echinacea pallida	Pale Purple Coneflower	2.0	0.2	0.32	
Echinacea purpurea	Purple Coneflower	2.0	0.3	0.40	
Eryngium yuccifolium	Rattlesnake Master	2.0	0.3	0.46	
Euthamia graminifolia	Grass-leaved Goldenrod	0.5	4.0	5.36	
Heliopsis helianthoides	False Sunflower	2.5	0.4	0.48	
Lespedeza capitata	Round-headed Bush Clover	1.0	0.2	0.25	
Liatris aspera	Rough Blazing Star	1.0	0.4	0.49	
Monarda fistulosa	Wild Bergamot	1.0	1.6	2.15	
Oligoneuron rigidum	Stiff Goldenrod	2.0	1.9	2.51	
Penstemon digitalis	Foxglove Beardtongue	1.0	3.0	3.98	
Pycnanthemum virginianum	Mountain Mint	0.5	2.5	3.37	
Ratibida pinnata	Yellow Coneflower	2.0	1.4	1.84	
Rudbeckia hirta	Black-eyed Susan	3.0	6.3	8.46	
Rudbeckia subtomentosa	Sweet Black-eved Susan	0.5	0.5	0.66	
Rudbeckia triloba	Brown-eyed Susan	0.5	0.4	0.52	
Silphium laciniatum	Compass Plant	2.0	<0.1	0.04	
Solidago speciosa	Showy Goldenrod	0.5	1.1	1.46	
Symphyotrichum laeve	Smooth Blue Aster	1.5	1.9	2.53	
Symphyotrichum novae-angliae	New England Aster	0.8	1.2	1.62	
Tradescantia ohiensis	Ohio Spiderwort	2.0	0.4	0.49	
Verbena stricta	Hoary Vervain	2.0	1.3	1.72	
Zizia aurea	Golden Alexanders	3.5	0.9	1.18	
E.E.G GG/OG	COIGCII AICAGIIGCIS	3.3	0.5	1.10	

Diversity and Density Metrics

Plant Type	Species Richness	Total Oz/Acre	Total Seeds/ft ²	% Mix by No. Seeds	
Grasses and Sedges	12	166	32.1	42.9	
Forbs	35	57.3	42.8	57.1	
Totals	47	223.3	74.9	100	

Table 2. Wet Pond Perimeter Seed Mix

Nomenclature			Seed Metrics			
		Oz/Acre	Seeds/ft ²	% Mix by No.		
Scientific Name	Common Name			Seeds		
Grasses, Sedges, Rushes						
Calamagrostis canadensis	Blue Joint Grass	1.0	6.4	6.36		
Carex comosa	Bottlebrush Sedge	2.0	1.4	1.36		
Carex crinita	Fringed Sedge	2.0	1.1	1.04		
Carex hystericina	Porcupine Sedge	2.0	1.4	1.36		
Carex scoparia	Lance-fruited Oval Sedge	2.0	3.9	3.82		
Carex stipata	Common Fox Sedge	3.0	2.3	2.32		
Carex vulpinoidea	Brown Fox Sedge	3.0	6.9	6.81		
Elymus virginicus	Virginia Wild Rye	32.0	3.1	3.05		
Glyceria grandis	American Manna Grass	1.0	1.6	1.59		
Glyceria striata	Fowl Manna Grass	1.0	2.1	2.04		
Juncus effusus	Common Rush	0.5	11.5	11.36		
Schoenoplectus tabernaemontani	Softstem Bulrush	3.5	2.5	2.46		
Scirpus atrovirens	Dark-green Bulrush	0.7	7.4	7.31		
Scirpus cyperinus	Wool Grass	0.2	7.8	7.72		
Spartina pectinata	Prairie Cord Grass	4.0	0.6	0.60		
Forbs	•			1		
Acorus americanus	Sweet Flag	2.0	0.3	0.30		
Alisma subcordatum	American Water Plantain	2.0	2.8	2.73		
Asclepias incarnata	Swamp Milkweed	2.0	0.2	0.22		
Bidens cernua	Nodding Bur Marigold	1.5	0.7	0.72		
Eupatorium perfoliatum	Boneset	1.0	3.7	3.63		
Eutrochium maculatum	Joe Pye Weed	1.0	2.2	2.16		
Helenium autumnale	Sneezeweed	1.0	3	2.95		
Iris virginica	Southern Blue Flag	2.0	<0.1	0.05		
Lobelia cardinalis	Cardinal Flower	0.2	1.8	1.82		
Lobelia siphilitica	Great Blue Lobelia	0.3	3.4	3.41		
Mimulus ringens	Monkey Flower	0.2	10.6	10.45		
Sagittaria latifolia	Common Arrowhead	3.0	4.2	4.16		
Sparganium eurycarpum	Broad-fruit Bur Reed	3.0	<0.1	0.03		
Symphyotrichum puniceum	Swamp Aster	1.0	1.8	1.82		
Verbena hastata	Blue Vervain	3.0	6.4	6.34		

Diversity and Density Metrics

Plant Type	Species Richness	Total Oz/Acre	Seeds/ft ²	% Mix by No. Seeds
Grasses, Sedges, Rushes	15	57.9	59.9	59.23
Forbs	15	23.2	41.2	40.77
Totals	30	81.1	101.1	100

Nomenclature		Seed Metrics			
		Oz/Acre	Seeds/ft ²	% Mix by No	
Scientific Name	Common Name	0271010	Occusio	Seeds	
Grasses, Sedges, Rushes					
Andropogon gerardii	Big Bluestem	5.0	1.1	1.27	
Bromus ciliatus	Fringed Brome	2.0	0.5	0.51	
Bromus kalmii	Prairie Brome	4.0	0.7	0.81	
Calamagrostis canadensis	Blue Joint Grass	0.5	3.2	3.55	
Carex bebbii	Bebb's Oval Sedge	2.0	1.6	1.72	
Carex brevior	Fescue Sedge	2.0	1.3	1.47	
Carex molesta	Field Oval Sedge	2.0	1.1	1.27	
Carex vulpinoidea	Brown Fox Sedge	3.0	6.9	7.60	
Elymus canadensis	Canada Wild Rye	24.0	2.9	3.16	
Elymus virginicus	Virginia Wild Rye	24.0	2.3	2.56	
Glyceria striata	Fowl Manna Grass	1.0	2.1	2.28	
Juncus dudleyi	Dudley's Rush	0.2	14.7	16.22	
Panicum virgatum	Switch Grass	2.5	0.8	0.89	
Schizachyrium scoparium	Little Bluestem	8.0	2.8	3.04	
Scirpus atrovirens	Dark-green Bulrush	0.5	5.3	5.83	
Sorghastrum nutans	Indian Grass	5.0	1.4	1.52	
Spartina pectinata	Prairie Cord Grass	4.0	0.6	0.67	
Forbs	Traine cord Grass	4.0	0.0	0.07	
Asclepias incarnata	Swamp Milkweed	2.0	0.2	0.24	
Asclepias syriaca	Common Milkweed	2.0	0.2	0.24	
Astragalus canadensis	Canadian Milk Vetch	1.0	0.2	0.20	
Astragalus cariauerisis Chamaecrista fasciculata		4.0	0.4	0.43	
	Partridge Pea		1.8		
Eupatorium perfoliatum	Boneset	0.5		2.03	
Euthamia graminifolia	Grass-leaved Goldenrod	0.5	4.0	4.44	
Eutrochium maculatum	Joe Pye Weed	0.5	1.1	1.20	
Helenium autumnale	Sneezeweed	0.5	1.5	1.65	
Heliopsis helianthoides	False Sunflower	2.5	0.4	0.40	
Hypericum ascyron ssp. pyramidatum	Great St. John's Wort	0.5	2.2	2.41	
Liatris pycnostachya	Prairie Blazing Star	1.0	0.3	0.28	
Lobelia siphilitica	Great Blue Lobelia	0.5	5.7	6.34	
Monarda fistulosa	Wild Bergamot	1.5	2.4	2.66	
Oligoneuron riddellii	Riddell's Goldenrod	0.5	1.1	1.18	
Oligoneuron rigidum	Stiff Goldenrod	2.0	1.9	2.08	
Parthenium integrifolium	Wild Quinine	1.0	0.2	0.18	
Physostegia virginiana	Obedient Plant	1.0	0.3	0.28	
Pycnanthemum virginianum	Mountain Mint	0.5	2.5	2.79	
Ratibida pinnata	Yellow Coneflower	2.0	1.4	1.52	
Rudbeckia hirta	Black-eyed Susan	3.0	6.3	7.00	
Rudbeckia subtomentosa	Sweet Black-eyed Susan	0.5	0.5	0.54	
Rudbeckia triloba	Brown-eyed Susan	0.5	0.4	0.43	
Silphium integrifolium	Rosinweed	2.0	0.1	0.06	
Symphyotrichum ericoides	Heath Aster	0.1	0.5	0.51	
Symphyotrichum laeve	Smooth Blue Aster	0.5	0.6	0.70	
Symphyotrichum novae-angliae	New England Aster	1.0	1.5	1.67	
Thalictrum dasycarpum	Purple Meadow Rue	1.0	0.3	0.28	
Tradescantia ohiensis	Ohio Spiderwort	1.0	0.2	0.20	
Verbena hastata	Blue Vervain	1.0	2.1	2.36	
Vernonia fasciculata	Common Ironweed	1.0	0.6	0.61	
Zizia aurea	Golden Alexanders	2.5	0.6	0.61	

Diversity and Density Metrics							
Plant Type	Species Richness	Total Oz/Acre	Total Seeds/ft ²	% Mix by No. Seeds			
Grasses, Sedges, Rushes	17	89.7	49.2	54.37			
Forbs	31	38.1	41.3	45.63			
Totals	48	127.8	90.6	100			

Table 4. Shortgrass Graminoid Seed Mix

Nomenclature		Seed Metrics			
		Oz/Acre	Seeds/ft ²	% Mix by No. Seeds	
Scientific Name	Common Name	OZIACIE	Seeds/it	% WITX BY NO. Seeds	
Grasses, Sedges, Rushes					
Bouteloua curtipendula	Side oats Grama	80.0	11.0	14.63	
Juncus tenuis	Path Rush	2.0	45.9	60.98	
Koeleria macrantha	June Grass	4.0	18.4	24.39	
	•	•	'	•	

Diversity and Density Metrics

	Plant Type	Species Richness	Total Oz/Acre	Total Seeds/ft ²	% Mix by No. Seeds	
	Grasses and Sedges	3	86.0	75.3	100.0	
	Forbs	0	0.0	0.0	0.0	
ĺ	Totals	3	86.0	75.3	100	
1						

HILL VALLEY

DATE: 08-25-2025 REVISED:

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