



2013 MECA Conference

MNDOT Specifications


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Office of Environmental Stewardship

Your Destination...Our Priority




MNDOT Specifications


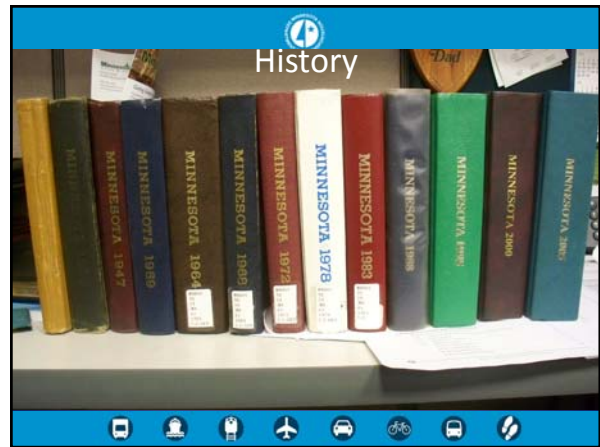

- Specification History
- Writing In Passive to Active Voice
- Specs that affect Water Quality
- Changes to Specifications
- Future of Specifications

History

- UPDATED EVERY 5 YEARS or so
 - 1920, 1938, 1947, 1959, 1964, 1968, 1972, 1978
 - 1983, 1988, 1995, 2000, 2005, 2013
 - New methods, technologies, materials
 - Errors and Omissions
 - Remove obsolete items
- xxx.5xx vs xxx.6xx

*color denotes book cover







Writing lesson

PASSIVE VOICE TO ACTIVE VOICE

- In an active sentence, the **subject** is doing the action. A straightforward example is the sentence "Steve loves Amy." Steve is the subject, and he is doing the action: he loves Amy, the **object** of the sentence.
- Another example is the title of the Marvin Gaye song "I Heard It through the Grapevine." "I" is the subject, the one who is doing the action. "I" is hearing "it."
- In passive voice, the target of the action gets promoted to the subject position. Instead of saying, "Steve loves Amy," I would say, "Amy is loved by Steve." The subject of the sentence becomes Amy, but she isn't doing anything. Rather, she is just the recipient of Steve's love. The focus of the sentence has changed from Steve to Amy.
- If you wanted to make the title of the Marvin Gaye song passive, you would say "It was heard by me through the grapevine," not such a catchy title anymore.
- Another important point is that passive sentences aren't incorrect; it's just that they often aren't the best way to phrase your thoughts. Sometimes passive voice is awkward and other times it's vague. Also, passive voice is usually wordy, so you can **tighten your writing** if you replace passive sentences with active sentence.

REDUCE DUPLICATION AND REDUNDANCY





E Site Plans

- The Engineer may require the Contractor to submit a site plan, detailing proposed erosion control and sediment control measures and a schedule indicating starting and completion times for construction operations working in water bodies and/or in direct proximity to waters of the state.
- Contractor shall not start work in the affected areas until the schedule and site plan have been accepted by the Engineer .

D Site Management Plan

- The Contractor shall provide a Site Management Plan as shown on the Plans, or within 10 calendar days of receipt of written notice from the Engineer, for construction operations in Areas of Environmental Sensitivity (AES). The Contractor shall detail the schedule of work, materials, and equipment along with stormwater or pollutant management BMPs to complete the work and protect the AES. **The Contractor shall not start work in the affected areas until the Engineer approves the Site Management Plan document.**

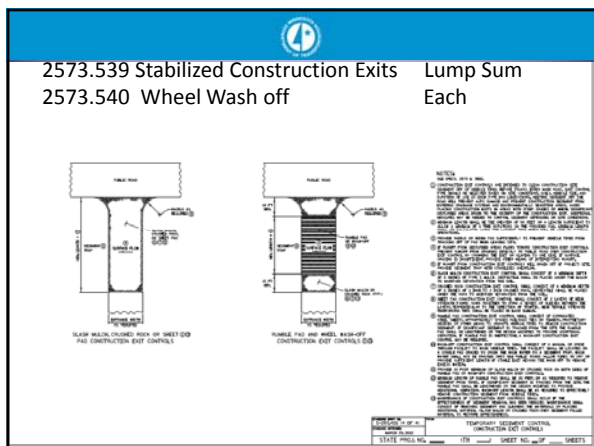
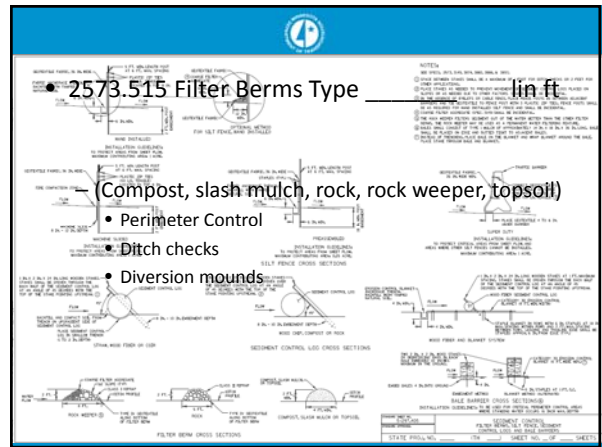
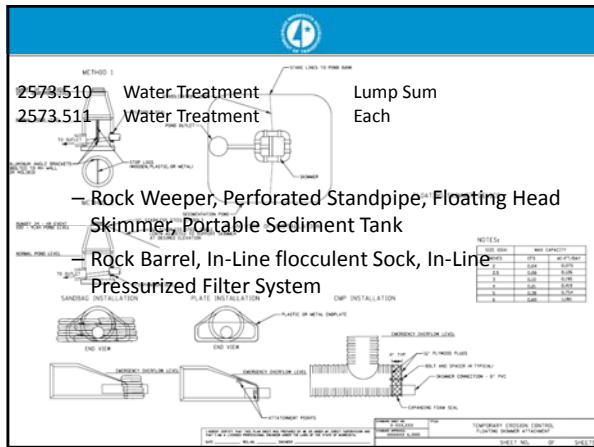


2573

Storm Water Management

Item No.	Item:	Unit:
2573.501	Bale Barrier	linear foot [meter]
2573.502	Silt Fence, Type _____	linear foot [meter]
2573.504	Sandbag Barrier	square foot [square meter]
2573.505	Floitation Silt Curtain, Type _____	linear foot [meter]
2573.506	Sediment Trap Excavation	cubic yard [cubic meter]
2573.507	Temporary Slope Drain	linear foot [meter]
2573.510	Water Treatment	lump sum
2573.511	Water Treatment Type _____	each
2573.515	Filter Berm, Type _____	linear foot [meter]
2573.516	Filter Berms, Type _____	cubic yard [cubic meter]
2573.520	Sediment Removal, Backhoe	hours
2573.530	Storm Drain Inlet Protection	each
2573.531	Storm Drain Inlet Protection	lump sum
2573.533	Sediment Control Log, Type _____	linear foot [meter]
2573.539	Stabilized Construction Exit	lump sum
2573.540	Wheel Wash Off	each
2573.541	Liquid Flocculant	gallon [cubic meter]
2573.542	Flocculant Sock	each
2573.543	Granular Flocculant	pound [kilogram]
2573.550	Erosion Control Supervisor	lump sum
2573.560	Culvert End Controls	each
2573.565	Culvert End Controls	lump sum

- 2573
- ### Example New BMPs
- Water Treatments(3875)
 - Filter Berms(3874)
 - Construction Exits



2574

Soil Preparation

Item No.:	Item:	Unit:
2574.508	Fertilizer, Type _____	pound [kilogram]
2574.510	Iron Sulfate	pound [kilogram]
2574.511	Iron Sulfate	ton [metric ton]
2574.512	Activated Charcoal	pound [kilogram]
2574.513	Activated Charcoal	ton [metric ton]
2574.514	Plant Hormones	gallon [liter]
2574.515	Hydrophilic Polymers	pound [kilogram]
2574.516	Mycorrhizal Inoculum	pound [kilogram]
2574.517	Rhizobium Inoculum	pound [kilogram]
2574.518	Compost Tea	gallon [liter]
2574.550	Compost, Grade 2 and Grade 3	cubic yard [cubic meter]
2574.551	Compost, Grade 1	ton [metric ton]
2574.575	Subsoiling	acre [hectare]
2574.525	Topsoil Borrow	cubic yard [cubic meter]
2574.576	Lime	ton [metric ton]
2574.578	Soil Bed Preparation	acre [hectare]
2574.579	Soil Tracking	acre [hectare]


2574

Examples of BMP's

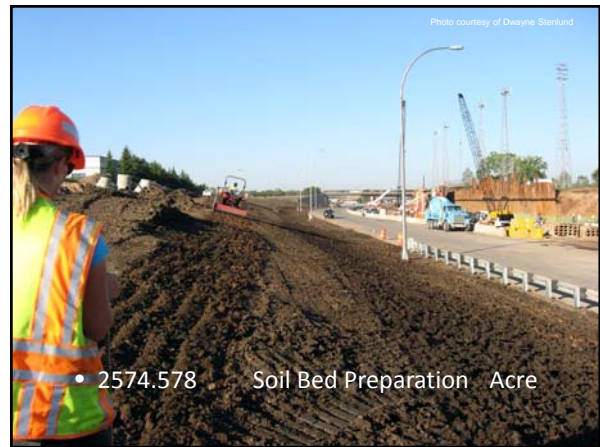
- Acres withholding
- Topsoil
- Subsoiling
- Soil Bed Preparation
- Soil Tracking

2574.525 _____ **Topsoil Borrow** Cubic Yard

- Common Topsoil Borrow
- Loam Topsoil Borrow
- Sandy Clay Loam Topsoil Borrow
- Sandy Loam Topsoil Borrow
- Rooting Topsoil Borrow
- Boulevard Topsoil Borrow
- Filter Topsoil Borrow
- Organic Topsoil Borrow




• 2574.575 Subsoiling Acre



• 2574.578 Soil Bed Preparation Acre

2575

Controlling Erosion & Establishing Vegetation

Item No.	Item	Unit	Item No.	Item	Unit
2575.501	Seeding	acre [hectare]	2575.545	Weed spraying	acre [hectare]
2575.502	Seed, Mix _____ or (Species)	pound [kilogram]	2575.547	Weed spray mixture	Gallon[iter]
2575.505	Sod, Type _____ or as specified	square feet [square meter]	2575.555	Turf Establishment	lump sum
2575.511	Mulch Material, Type _____	ton [metric ton]	2575.560	Hydraulic Tackifier, Type _____	pound [kilogram]
2575.512	Mulch Material, Type _____	Cubic yard [cubic meter]	2575.561	Hydraulic Tackifier, Type _____	square yard [square meter]
2575.513	Mulch Material, Type _____	acre [hectare]	2575.562	Hydraulic Matrix, Type _____	pound [kilogram]
2575.518	Temporary Poly Covering	Sq Yd [Square m]	2575.563	Hydraulic Matrix, Type _____	square yard [square meter]
2575.519	Disk Anchoring	acre [hectare]	2575.570	Rapid Stabilization Method 1 or Method 2	acre [hectare]
2575.523	Erosion Control Blanket, Category _____	square yard [square meter]	2575.571	Rapid Stabilization Method 3	M gallons [cubic meter]
2575.525	Turf Reinforcement Mat, Category _____	square yard [square meter]	2575.572	Rapid Stabilization Method 4	square yard [square meter]
2575.526	Compost blanket	Pound [kilogram]	2575.573	Rapid Stabilization Method 5	ton [metric ton]
2575.527	Shoulder mulch overspray	pound [kilogram]			
2575.535	Water	M gallons [cubic meter]			
2575.541	Mowing	acre [hectare]			

2575

Example BMPs

- Seed Mixtures
- Temporary Polly Coverings (Geotextile Fabric, Reinforced Plastic Sheeting)
- Rolled Erosion Control Products
 - ECB- TRMs – Nets
- Hydraulic Erosion Control Products
 - Hydraulic Tackifier (Natural, Synthetic, Polyacrylamide)
 - Hydraulic Matrix (compost, mulch, stabilized fiber, bonded fiber, fiber reinforced)

Seed Mixes

Native/Nonnative	Function	Planting Area	Hydrology	Version
10,000 Hybrid	1,000 Cover Crop	100 statewide	10 general	1-9
25,000 Introduced	2,000 Mid Term Stabilization	200 South 1/2 & West 1/3	20 dry	1-9
30,000 Native	3,000 Stormwater Facilities	300 NE & North-central	30 dry mesic	1-9
40,000 Custom	4,000 Wetland	400 NW*	40 mesic	1-9
	5,000 Grassland	500 SW*	50 wet mesic	1-9
	6,000 Woodland	600 SE*	60 seasonally flooded	1-9
		700 Central**	70 saturated	1-9
			80 emergent	1-9
			90 submergent	1-9

2575.502 Seed Mix _____ lbs

Quantity	Material	Unit	Name	Reference
21.011	100	000	000	000
21.012	100	000	000	000
21.013	100	000	000	000
21.014	100	000	000	000
21.015	100	000	000	000
21.016	100	000	000	000
21.017	100	000	000	000
21.018	100	000	000	000
21.019	100	000	000	000
21.020	100	000	000	000
21.021	100	000	000	000
21.022	100	000	000	000
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21.025	100	000	000	000
21.026	100	000	000	000
21.027	100	000	000	000
21.028	100	000	000	000
21.029	100	000	000	000
21.030	100	000	000	000
21.031	100	000	000	000
21.032	100	000	000	000
21.033	100	000	000	000
21.034	100	000	000	000
21.035	100	000	000	000
21.036	100	000	000	000
21.037	100	000	000	000
21.038	100	000	000	000
21.039	100	000	000	000
21.040	100	000	000	000
21.041	100	000	000	000
21.042	100	000	000	000
21.043	100	000	000	000
21.044	100	000	000	000
21.045	100	000	000	000
21.046	100	000	000	000
21.047	100	000	000	000
21.048	100	000	000	000
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21.097	100	000	000	000
21.098	100	000	000	000
21.099	100	000	000	000
21.100	100	000	000	000

2575.518 Temporary Polly Covering Sq Yd

- Reinforced Plastic Sheetting
- Geotextile Fabric

2575.523 Erosion Control Blanket Category Sq Yd

Courtesy of Dwayne Stembund

2575.523 Erosion Control Blanket Category _____ Sq Yd
 2575.564 Hydraulic Matrix Type _____ Lb

- Future of the Specification Book?????
 - E-Documents
 - Updated annually
 - More performance based specifications
 - Different contract language
 - More combination of materials/methods to meet WQ permit requirements
 - Newer technologies (From research)



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Erosion Control & Storm Water Management

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