



# PLAN RATINGS & COMMON ERRORS TO WATCH FOR IN PLANS

Project Design Services Unit

June 2018

# PROJECT RATING FORM

PROJECT REVIEW (Process B)		July 2012
PLAN REVIEW BY: _____	SPEC. PROV. REVIEW BY: _____	
DIST: <input type="text"/>	CONSULTANT COMPANY: _____	
PRIME SP # (TH): _____	ASSOCIATED SP'S (TH): _____	
FUNDING <input type="text"/>	PLAN TOTAL # SHEETS: _____	
<b>CONSTRUCT FOR:</b> <input type="checkbox"/> ALT BID <input type="checkbox"/> UNBONDED CONC <input type="checkbox"/> CONC SURF <input type="checkbox"/> CPR <input type="checkbox"/> BIT SURF <input type="checkbox"/> BIT MILL & OVERLAY <input type="checkbox"/> DRAINAGE <input type="checkbox"/> GUARDRAIL <input type="checkbox"/> BR. APPR <input type="checkbox"/> ROUNDABOUT <input type="checkbox"/> RUMBLE STRIPE <input type="checkbox"/> ADA IMP <input type="checkbox"/> BUILDING REMOVAL <input type="checkbox"/> LANDSCAPING <input type="checkbox"/> LIGHTING <input type="checkbox"/> SIGNING <input type="checkbox"/> SIGNAL <input type="checkbox"/> OTHER		
SUBMITTAL DATE: _____	ORIG. LET DATE.: _____	FINAL LET DATE: _____
MOVE REASONS: _____		
<b><u>RATING OF SUBMITTED PLAN AND DOCUMENTS</u></b>		
CHOOSE THE ANSWER THAT APPLIES FOR EACH CATEGORY ....		<u>COMMENTS:</u>
<b><u>PROJECT DOCUMENTS RATINGS</u></b>		
TIME & TRAFFIC SUBMITTAL	<input type="text" value="NOT APPLICABLE"/>	_____
SPECIAL PROVISIONS SUBMITTAL	<input type="text" value="NOT APPLICABLE"/>	_____
COOP. AGR. TIMELY SUBMITTAL	<input type="text" value="NOT APPLICABLE"/>	_____
COOP. AGR. COMPLETE SUBMITTAL	<input type="text" value="NOT APPLICABLE"/>	_____
QM/QC COMPLETENESS	<input type="text" value="NOT APPLICABLE"/>	_____
<b><u>PROJECT PLAN RATINGS</u></b>		
PAY ITEMS & SPEC BOOK COMPL	<input type="text" value="NOT APPLICABLE"/>	_____
TYPICAL SECTIONS	<input type="text" value="NOT APPLICABLE"/>	_____
PLAN DETAILS	<input type="text" value="NOT APPLICABLE"/>	_____
CONFORMS TO DESIGN STDS	<input type="text" value="NOT APPLICABLE"/>	_____
TABULATIONS	<input type="text" value="NOT APPLICABLE"/>	_____
PLAN CROSS REFERENCE	<input type="text" value="NOT APPLICABLE"/>	_____
PLAN & PROFILE COMPOSITION	<input type="text" value="NOT APPLICABLE"/>	_____
PLAN REVISIONS	<input type="text" value="NOT APPLICABLE"/>	_____
PLAN RATING	<input type="text" value="NOT APPLICABLE"/>	_____
DISTRICT ADDENDUMS	<input type="text" value="NOT APPLICABLE"/>	_____
<b>PLAN RATING OVERALL</b>	<input type="text" value="NOT APPLICABLE"/>	_____
COMMENTS: _____		

This is filled out for ALL Process "B" projects.

<b>ADDENDUMS FROM OUTSIDE DESIGNS CONTROL ( ADD # OF ADDENDUMS AFTER DASH):</b>		
WAGE RATES - _____	QUANTITY CHANGE - _____	PROVISION CHANGE - _____
PLAN CHANGE - _____	UNKNOWN REASONS FOR CHANGE - _____	
<b>ADDENDUMS DUE TO DISTRICT ( ADD # OF ADDENDUMS AFTER DASH):</b>		
QUANTITY CHANGE - _____	PROVISION CHANGE - _____	PLAN CHANGE - _____
<b>PROJECT RATING OVERALL</b> <input type="text" value="NOT APPLICABLE"/>		
COMMENTS: _____		

# RATING CRITERIA

	<u>POOR</u>	<u>TRANSITIONAL</u>	<u>EXCEPTIONAL</u>
➤ PAY ITEMS & SPEC BOOK	Over 6% Revisions	3-6% Revisions	0-2% Revisions
➤ TYPICAL SECT.	Over 5 Revisions	1-5 Revisions	No Revisions
➤ PLAN DETAILS	Over 5% Revisions	1-5% Revisions	No Revisions
➤ DESIGN STDS	Over 4 Revisions	2-4 Revisions	0-1 Revisions
➤ TABULATIONS	Over 5% Revisions	3-5% Revisions	0-2% Revisions
➤ PLAN CROSS REF.	Over 1 Revision	1 Revision	No Revisions
➤ PLAN & PROFILE	Over 2 Revisions	1-2 Revisions	No Revisions
➤ PLAN REVISIONS	Over 3 Revisions	1-3 Revisions	No Revisions
➤ DESIGN ADDENDUMS	Over 1 Revision	1 Revision	No Revisions

# PAY ITEMS

Conformance to pay items as shown in the Spec Book and the Trns\*port list.

## POOR

Over 6% Revisions

## TRANSITIONAL

3-6% Revisions

## EXCEPTIONAL

0-2% Revisions

Things to watch for....

- ✓ Descriptions need to match Trns\*port EXACTLY, even abbreviations
- ✓ 2104 Remove bit or concrete pavement need to state depth, reinforcement
- ✓ All special and modified items need to have a note or reference a detail
- ✓ Item numbers need to match spec and usage
- ✓ Quantities rounding needs to be consistent (all rounded up or all rounded down)
- ✓ Prorated items
- ✓ Columns for each SP and/or funding types

# PAY ITEMS (continued)

- ✓ Units match pay item and tabulations
- ✓ Shouldn't have both 2105 and 2106 items (rare exceptions)
- ✓ Equipment such as backhoes need to have a note stating what they are used for
- ✓ 2501 Safety aprons and grates, place in clear zone only
- ✓ Lining culverts bring aprons up to current standards
- ✓ When replacing guardrail end treatments consider bringing all of the guardrail run up to current standards including design specials
- ✓ Note type of guardrail end treatments
- ✓ 2575 fertilizer needs to state analysis and application rate somewhere in the plan

# SPEC BOOK COMPLIANCE

The Specifications and Basis of Payment are complied with.

## POOR

Over 6% Revisions

## TRANSITIONAL

3-6% Revisions

## EXCEPTIONAL

0-2% Revisions

Common Errors.....

- ✓ Use the proper spec numbers for pay items
- ✓ Use the correct units for pay items
- ✓ Descriptions match transport exactly, even abbreviations must match
- ✓ The 0.6XX numbers have the correct units
- ✓ The 0.6XX numbers include a special provisions write-up

SPEC BOOK	SPECIAL PROVISIONS	PLAN UNIT DESCRIPTION
.501	.601	LUMP SUM
.502	.602	EACH
.503	.603	LIN FT
.504	.604	SQ YD
.505	.605	ACRE
.506	.606	GALLON
.507	.607	CU YD
.508	.608	POUND
.509	.609	TON
.510	.610	HOUR
.511	.611	DAY
.512	.612	WEEK
.513	.613	UNIT DAY
.514	.614	STRUCTURE
.515	.615	ASSEMBLY
.516	.616	SYSTEM
.517	.617	SQ FT/DAY
.518	.618	SQ FT
.519	.619	ROAD STA
.520	.620	YARD
.521	.621	DOLLAR
.522	.622	MBM
.523	.623	M GALLON
.524	.624	TREE
.525	.625	SHRUB
.526	.626	VINE
.527	.627	PLANT

# TYPICAL SECTIONS

Are they complete and of sufficient detail to accomplish the intent of the plan?

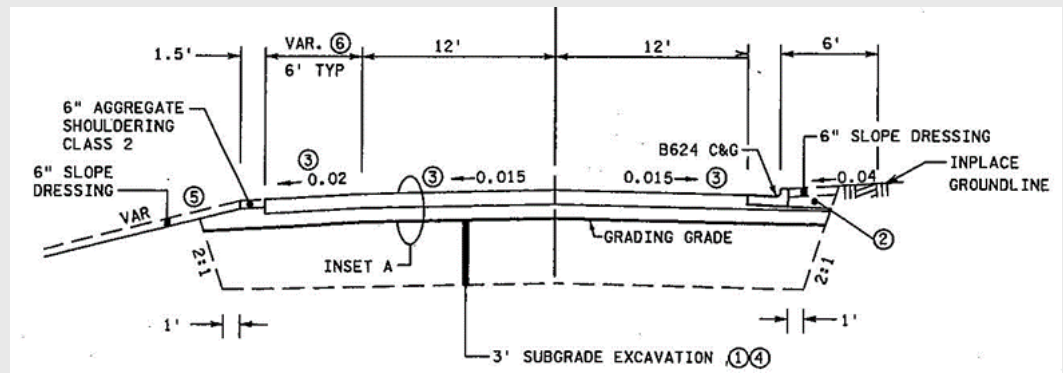
**POOR**  
Over 5 Revisions

**TRANSITIONAL**  
1-5 Revisions

**EXCEPTIONAL**  
No Revisions

Make sure the....

- ✓ Typicals agree with the MDR
- ✓ Bituminous is listed correctly...Type SP 12.5 Wearing Course Mixture (SPWEB440B) and/or Type SP 12.5 Wearing Course Mixtures (SPWEB440B) 2" Thick...need to include the mix designation number
- ✓ The bituminous thickness refers to the layer placed not the total depth of bit

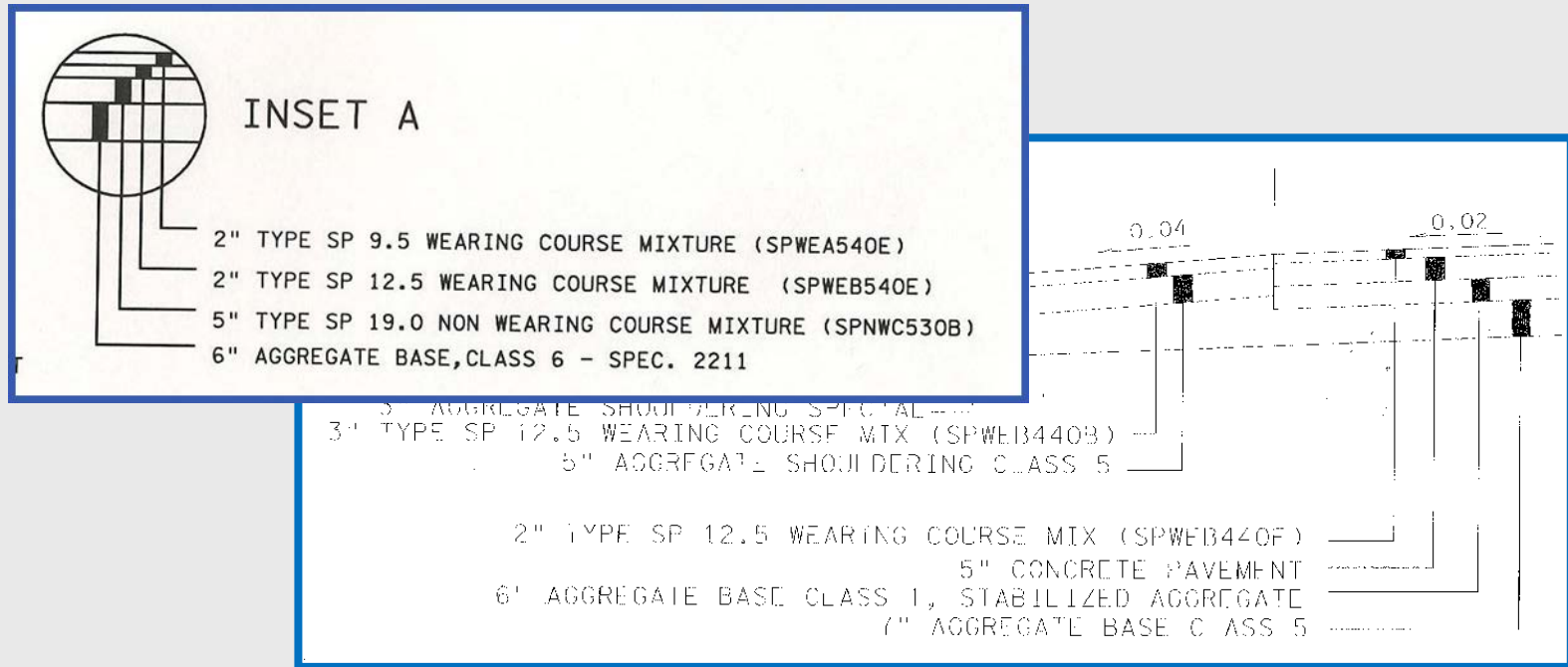








# METHOD OF MIX LABELING



There are several correct ways to show this but all methods should...

- ✓ Make sure the mix is spelled out (e.g. TYPE SP....)
- ✓ Make sure the mix designation is shown in full & in parenthesis

# PLAN DETAILS

Do the details tell enough, are complete and relevant to the plan?

**POOR**

Over 5 Revisions

**TRANSITIONAL**

1-5 Revisions

**EXCEPTIONAL**

No Revisions

Check that...

- ✓ All details are signed, except proprietary and Standard Plan Sheets
- ✓ All applicable details are in the plan
- ✓ All materials are paid for or designated as incidental
- ✓ All details are labeled to correspond with the pay items, it's clear what they are and how they are paid for
- ✓ The details are understandable, they make sense
- ✓ All notes are accounted for and make sense

# CONFORMS TO DESIGN STANDARDS

## Conformance with Standard Plans and Plates.

**POOR**  
Over 4 Revisions

**TRANSITIONAL**  
2-4 Revisions

**EXCEPTIONAL**  
0-1 Revisions

Check for...

- ✓ All applicable Std. Plates & Std. Plan sheets are included ...pay items, notes, traffic sheets
- ✓ Standard Plate letter is most recent, Standard Plan sheet is most recent approved
- ✓ All cross reference notes on Std. Plan sheets are filled in
- ✓ Modified Standard Plan sheets are signed and shown in the method required  
(see standard plan sheet website and/or design scene).
- ✓ Only show the Standard Plate **letter** in the table...do NOT show the letter when referencing the plate anywhere else in the plan!

# TABULATIONS

Is there an orderly arrangement of Tables of Items and are Tabulations provided for items difficult to total.

## POOR

Over 5 % Revisions

## TRANSITIONAL

3-5 % Revisions

## EXCEPTIONAL

0-2% Revisions

Check for...

- ✓ SP and funding types splits are identified and clear
- ✓ Standard abbreviations, description and units match pay item, consistency
- ✓ Spec numbers (if listed) can only be first four numbers, not decimals
- ✓ Most quantities should be tabulated, except lump sum & incidental
- ✓ Quantities agree with SEQ, may be rounded off
- ✓ Group items by work type
- ✓ Stationing should be within project limits
- ✓ All notes are accounted for, sheet referencing correct
- ✓ Do the math, do the columns add up
- ✓ Column totals not project totals if more than one tab

# PLAN CROSS REFERENCE

Do the Plans show sheet Reference from Estimate to Tabulations?

**POOR**

Over 1 Revision

**TRANSITIONAL**

1 Revision

**EXCEPTIONAL**

No Revisions

Are the...

- ✓ Tab references correct... letter and page
- ✓ Quantities in the SEQ the same as the quantities in the tabs
- ✓ Note references correct, do they go to the correct sheet

# PLAN & PROFILE COMPOSITION

Composite of all Trunk Highway features  
complete to make accurate pictorial views

## POOR

Over 2 Revisions

## TRANSITIONAL

1-2 Revisions

## EXCEPTIONAL

No Revisions

- ✓ Label begin/end SP and stationing, they agree with title sheet
- ✓ Label begin/end construction and stationing, they agree with title sheet
- ✓ The north arrow is present and in the correct direction
- ✓ The scale has units, use bar scales only!
- ✓ Label the mainline and side roads, they need to agree with the title sheet
- ✓ Label all bridges and exceptions
- ✓ The items agree with SEQ and tabs, all items have corresponding pay items

# PLAN RATING OVERALL

Composite of all ratings...The overall acceptability of plan.  
Based on previous slides ratings and subject to subjective scrutiny.

Subjective Scrutiny takes into account the previous sections and the following common errors...

- ✓ Do all sheet have the correct SP and TH number on them
- ✓ Other section sheets are well done (e.g. signing, striping, hydraulics, etc)
- ✓ Total sheets are correct in bottom right corner of each sheet
- ✓ All necessary notes are on the SEQ...combo lab/office, haul salvaged mat'l,
- ✓ Utility Level D note is included in plan
- ✓ Cross section sheets are NOT signed
- ✓ Do NOT use the words...FOR INFORMATION ONLY



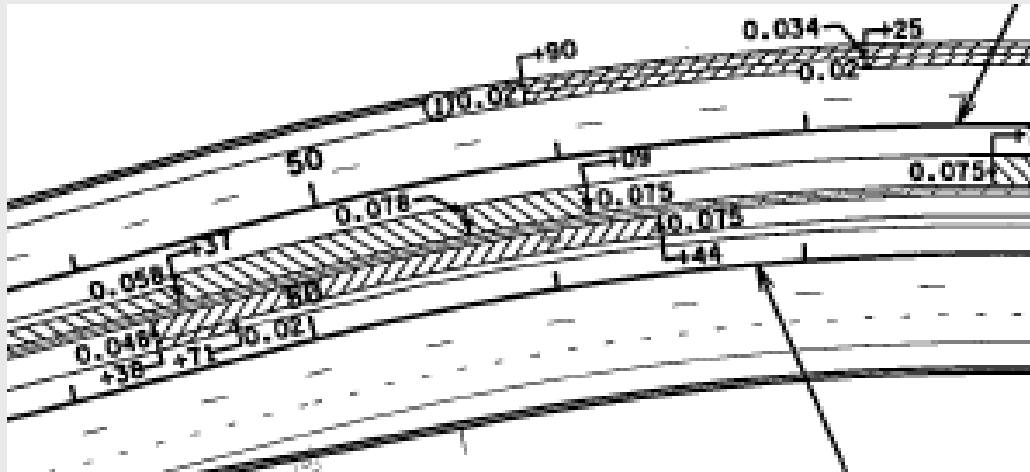
# OTHER COMMON ERRORS

- ✓ No repeat SP Numbers
- ✓ All the sheets signed and the Signature follows board required block, has printed name, states “Licensed”
- ✓ Only one signature per name per sheet
- ✓ “Construction Plan For” uses correct labels...Grading, Bit, Conc, etc.
- ✓ Length block needs to add up, does it have note for divided roadways
- ✓ Don’t use INSTALL alone unless the material is being supplied
- ✓ Incidental vs included in
- ✓ No repeat note numbers/letters on the same sheet
- ✓ Legends reflect what is on the sheets, do not note if in legend
- ✓ Don’t show quantities for incidental and/or lump sum items

# SUPERELEVATIONS

## Common Superelevation Errors....

- ✓ Proper engineering connotation would be to have zero's in front of the empty decimal numbers (i.e. 0.015 ft/ft)



- ✓ Make sure the sheet references the units for the supers.



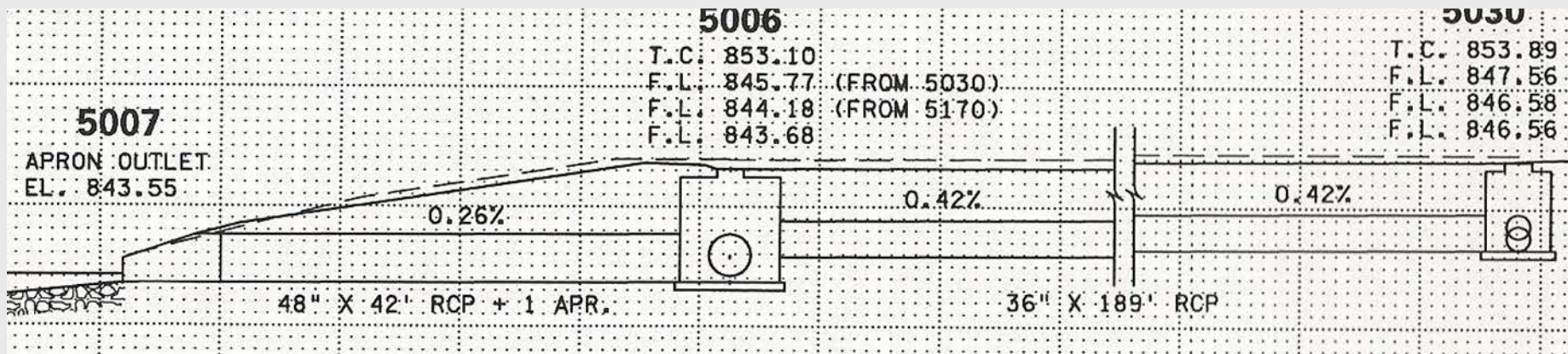
# DRAINAGE

## Common Drainage Errors....

- ✓ Connection...incidental vs payment, needs to be clear how items are being paid for or if they are incidental
- ✓ Trash guards vs safety grate, these are different so make sure you know which one you want. Maintenance does not like these so don't use if not necessary
- ✓ The tabs need to agree with the profiles, plan views, and cross sections...such as size, material, apron style, location/stationing
- ✓ 2506 Construct Drainage Structure by Each...includes casting assembly, by the lin ft pay for casting assembly separately
- ✓ 2506 Use Reconstruct Drainage Structure not Reconstruct Manhole
- ✓ When it contains both apron and catch basin...what is it (see next slide)

# DRAINAGE – CATCH BASIN with APRON

- ✓ In this situation it would be paid for as 2503 Storm Sewer
- ✓ Use 2503 CONNECT TO EXISTING STORM SEWER when connecting into the storm sewer pipe..
- ✓ Use 2506 CONNECT INTO EXISTING DRAINAGE STRUCTURE when connecting into the structure.





# DRAINAGE – EVERYTHING ELSE

For other information regarding drainage on the plans see the presentation on this website labelled “DRAINAGE GUIDANCE 2018-06”.



# GUARDRAIL

## Common Guardrail Errors....

- ✓ When Salvaging Guardrail need to pay attention to the pay item and what is actually being salvaged (see guardrail guidance for more information).
- ✓ Include pay items for material required for slope/berm grading...do NOT make it incidental
- ✓ End treatments need to be accounted for on both ends
- For more information regarding guardrail on the plans see the presentation on this website labelled “GUARDRAIL GUIDANCE 2018-06”.

# TRAFFIC

## Common Traffic Errors....

- ✓ The tabulations need to show all SP/Funding splits
- ✓ Sinusoidal Rumbles stripes cannot be ground in
- ✓ Striping typicals need to be most recent and follow modification guidelines
- ✓ Striping extension in tabulations match the SEQ (e.g. Mat'l, GR IN, (WR), etc.)
- ✓ When there are signs the plan needs the note.... *ALL SIGN DIMENSIONS ARE IN INCHES*
- ✓ The proper use of the word "INSTALL" (use when the item is furnished or salvaged) versus "PLACE" (use when the item is furnished and installed)
- ✓ Removable Preform Plastic Marking, and Temporary Raised Pavement Markers needs to be paid for separately, not included in traffic control by Lump Sum



# CROSS SECTIONS

## Common Cross Section Errors....

- ✓ The SP numbers in the bottom right match the rest of the plan.
- ✓ All information is readable, watch for overwriting and excessively small print.
- ✓ Slope are 1:X
- ✓ Sheets are NOT signed

# QUESTIONS????

Any questions contact us ANYTIME:

**Tim Swanson, P.E. @ 651-366-4689**  
**[tim.swanson@state.mn.us](mailto:tim.swanson@state.mn.us)**

**Yvonne Crocker, P.E. @ 651-366-4610**  
**[yvonne.crocker@state.mn.us](mailto:yvonne.crocker@state.mn.us)**

**Jane Krebsbach @ 651-366-3183**  
**[jane.krebsbach@state.mn.us](mailto:jane.krebsbach@state.mn.us)**