

DESIGN SCENE

OFFICE OF PROJECT MANAGEMENT & TECHNICAL SUPPORT



PROJECT DESIGN SERVICES UNIT

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Chapter 1 – AREA OF ENVIRONMENTAL SENSITIVITY

It is important to show the areas of environmental sensitivity in the plan to make sure these areas are not impacted. These locations must be shown on the general layout sheets. It is recommended to also show them on the removal and construction plan sheets as well.

Chapter 1 - GOVERNING SPECIFICATIONS (Replaced)

This section is replaced with the following....

~~All plans let between December 1, 2013 and October 22, 2015 will be using the 2014 Spec Book. The Governing Specifications in the top right corner of these plans should state...~~

~~The 2014 Edition of the Minnesota Department of Transportation “Standard Specifications for Construction” and the 2014 Edition of the “Materials Lab Supplemental Specifications for Construction” shall govern.~~

~~All plans let after October 22, 2015 will be using the 2016 Spec Book. The Governing Specifications in the top right corner of these plans should state....~~

All plans let after December 30, 2017 will be using the 2018 Spec Book. The Governing Specifications in the top right corner of these plans should state...

The 2018 Edition of the Minnesota Department of Transportation “Standard Specifications for Construction” shall govern.

For the few plans that get an exception to use the 2016 Spec Book should read...

The 2016 Edition of the Minnesota Department of Transportation “Standard Specifications for Construction” shall govern.

Chapter 1 – LENGTH BLOCKS (Revised)

The following will be added as the third paragraph to this section....

The Gross length should be calculated using the stationing (including the equation lengths) not the reference points as these are not always true miles. **If stationing is not available then reference points can be used to determine the lengths for the length block.**

Chapter 1 – TITLE SHEET MATERIAL

From this day forward do NOT use Mylar for title sheets. It has been determined that is not an acceptable material for editing. Therefore, use Vellum for all title sheets as it has shown that it can be edited if necessary.

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Chapter 1 - TRIBAL LANDS

It is strongly encouraged that, if applicable, all federally recognized tribal land boundaries be identified in the plan. As a minimum these should be shown on the general layout sheets if applicable. If there are no general layout sheets then show the boundaries on the title sheet index map. This will assist in providing direction for MnDOT policy, procedures, and requirements when working on or near tribal lands and assists in being mindful of issues of tribal sovereignty and jurisdiction. More information can be found at MnDOT A to Z, “Tribes and Transportation” and “Tribal Lands” websites.

Chapter 2 – 2016 SPEC BOOK CHANGES (Deleted)

This section has been deleted.

Chapter 2 – BRIDGES AND BOX CULVERTS (Revised)

Under “Bridge Replacements:” the second section is revised as follows...*Bridge/ Box Culvert Replace with Box Culvert ~~over~~ 10’ and Over*

If you have an existing bridge/culvert with Bridge number that is replaced with a Box culvert that is ~~over~~ 10 ‘ or over and has a Bridge number, ...

Under “New Bridges:” the second section is revised as follows... *New Box Culvert ~~over~~ 10’ or Over*

If you have a new Box culvert that is ~~over~~ 10 ‘ or over and has a Bridge number, the new box culvert has plan sheets that are incorporated into the Grading Plan...

Chapter 2 – FUNDING (Revised)

The fifth paragraph of this section is revised as follows....

Local participation should be indicated by showing the percentage of local participation, and if applicable, the State Aid Project Number. Lump sum agreements should be identified with a note at the top of the column-or noted for the pay items that the lump sum applies to. The notes on the SEQ sheet ~~should state “See Lump Sum Agreement # with local governmental agency”~~. will need to include

- ❖ If it is lump sum
- ❖ The agreement number
- ❖ Who the agreement is with

For example....

ITEM	DESCRIPTION	UNITS	TOTAL ESTIMATED QUANTITY	ESTIMATED QUANTITY SP 1111-11 (A)	EST. QUANT. SAP 111-112-121 (B)
2021.501	MOBILIZATION	LUMP SUM	1	0.8	0.2
2105.504	GEOTEXTILE FABRIC TYPE 3	SQ YD	150	50	100
2118.507	AGGREGATE SURFACING (CV) CLASS 1	CU YD	150	100	50
<i>POSSIBLE NOTES...</i>					
(A) SEE LUMP SUM AGREEMENT NO 1234567 WITH THE CITY OF CROCKER					
or (A) SEE AGREEMENT NO 1234567 WITH SWANSON COUNTY (57% FEDERAL, 23% COUNTY FUNDS, 20% STATE FUNDS)					
or (A) SEE AGREEMENT NO 1234567 WITH THE CITY OF CROCKER (100% CITY FUNDS)					
(B) SEE AGREEMENT NO 1234567 WITH THE CITY OF CROCKER (100% STATE AID FUNDS)					
or (B) SEE AGREEMENT NO 1234567 WITH SWANSON COUNTY (80% STATE AID, 20% COUNTY FUNDS)					

Paragraph 10 will be deleted as it is covered in the paragraph above....~~If there are agreements the SEQ needs to show the following note....SEE LUMP SUM AGREEMENT NO. XXXXXXXX.~~

Chapter 2 – LIGHTING & SIGNAL PAY ITEM CHANGES (Deleted)

This section is deleted as it no longer applies.

Chapter 2 – SPECIAL PAY ITEM NUMBERS (Deleted)

This section was deleted as it is covered earlier in the chapter.

Chapter 3 - ADA COMPLIANT GRATES (Deleted)

This section is deleted as it is replaced with a new section.

Chapter 3 – ADA SAFETY GRATES, CURB BOXES, and HELPER STRUCTURES

ADA Safe Grates:

The threshold to use an ADA safety grate is when an existing catch basin is located within:

- 1.) the PAR, or
- 2.) 1' outside of the edge of the detectable warnings, or
- 3.) a high use walkable flare or
- 4.) the path of travel of an APS push button

When constructing new catch basins or relocating existing catch basins, the new structures should be located 10' away from the edge of the curb ramp and preferably upstream of the curb ramp. Constructing new structures 10' away allows the catch basin sumps to be located adequately away from the curb ramp and provides the needed space to construct curb ramp tapers and ensure flow line and gutter inslopes transitions can be made in the field without trapping water.

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Curb Boxes:

Curb inlets (curb boxes) are not needed on catch basin structures when they are on grade, but they are always needed at low points. Curb boxes can't be part of the curb taper if it doesn't allow compliant flare or ramp slopes.

Helper Structures:

ADA safe grates have approximately a 50% reduction in intake flow capacity and can clog more easily with debris than standard grates. When utilizing an ADA safe grate or removing a curb box at a low point, the hydraulic impacts should be reviewed. To restore and improve hydraulic capacity in areas of concern "helper" structures should be utilized. "Helper" structures are generally minimum depth new structures connected into an existing catch basin in the same quadrant with a 10' -12" rcp lead. Most often these helper structures are relatively low cost (\$5000 for structure, lead, castings, and associated work) since the construction limits are contained within the quadrant being worked on and are not extended to the storm sewer main line.

For ADA safe grates use the pay item 2506.502 CASTING ASSEMBLY by EACH. Where we typically reference what standard plate you would use we will add ADA instead. You will also need to include the detail for it in the plan which can be found at <http://www.dot.state.mn.us/ada/design.html>

Look under the section called "Standard plans and details" and click on the bullet "ADA Safe Grate Detail (DGN)".

They are in the process of getting a standard plate but until then we will just reference it and add the detail in the plan.

Chapter 3 – MOMENT SLAB

There has been some confusion as to the type of concrete mix to use when designing a moment slab. In conversations with the concrete and bridge office it has been determined that details for moment slabs should call out the concrete mix 3B52. Make sure that this is the mix used in future moment slab designs.

These should be paid for as two separate items....

- 2411.507 STRUCTURAL CONCRETE (3B52) by CU YD
- 2411.508 REINFORCEMENT BARS (EPOXY COATED) by POUND

Chapter 3 - REINFORCEMENT BAR MARKS (Deleted)

This section is deleted as it is no longer needed.

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Chapter 6 – TEMPORARY CULVERT

In the past there were occasions where the contractor would supply and install a temporary culvert as in a bypass situation. Then the culvert would be salvaged and hauled to the district maintenance facility.

This is no longer allowed. When a contractor is required to furnish and install a temporary culvert it must be removed and become the property of the contractor or salvaged to be used elsewhere on the project. It CANNOT be salvaged and hauled to the District.

Chapter 6 – TEMPORARY GUARDRAIL

In the past there were occasions where the contractor would supply and install temporary guardrail and/or end treatment as in a bypass situation. Then the guardrail and/or end treatment would be salvaged and hauled to the district maintenance facility.

This is no longer allowed. When a contractor is required to Furnish and install temporary guardrail/end treatment it must be removed and become the property of the contractor salvaged to be used elsewhere on the project. It CANNOT be salvaged and hauled to the District.

Chapter 10 – RUMBLES IN CONCRETE

Sinusoidal rumbles should be used when placing rumble strips on concrete shoulders. These are typically on the inside shoulders of a concrete roadway.

Chapter 13 – MULCH MATERIAL TYPE 4 (Revised)

The first sentence is revised to read as follows...

As stated in the 2016 Spec Book, Type 4 Mulch Material is paid for by the acre, but in the 2018 Spec Book it is paid by the square yard.

Chapter 13 – SEED NUMBER (Deleted)

This section is deleted as it is no longer needed.

Chapter 16 – ONE DIRECTION LARGE ARROW

The Type III barricade with a One-Direction Large Arrow at the end of the merging taper and another identical assembly at the beginning of the taper (if a Flashing Arrow Board was not used) has essentially been what Minnesota has been using for lane closures since Appendix B was published.

However, there was no language in TTC (Temporary Traffic Control) chapter of the MN

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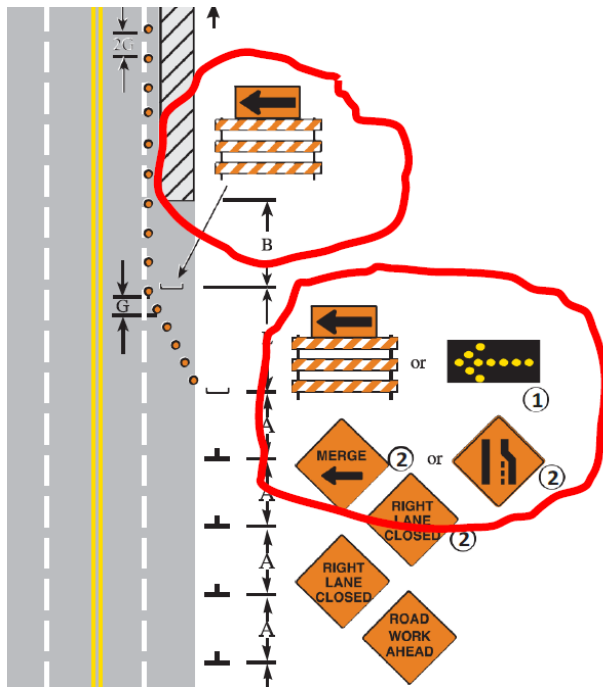
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MUTCD that allowed this use. The One-Direction Large Arrow is governed by language in Warning Signs Chapter 2C (2C.12) that limits its use to delineating a change in horizontal alignment for curves. Language was drafted for consideration by the Minnesota Committee on Uniform Traffic Control Devices, but it was found to not be in compliance with the Federal MUTCD.

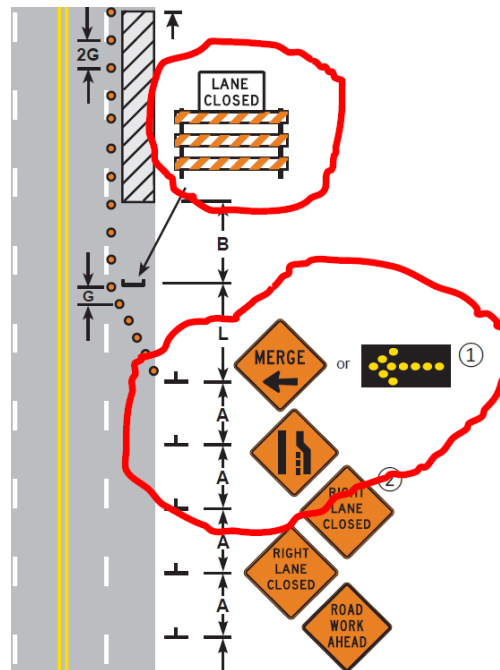
Per a recent clarification from the FHWA, it cannot be used for merging tapers, though it will still be used for shifting tapers. **Therefore, for all projects submitted for the January 26, 2018 letting or later must following the new layout as described below.**

Due to this clarification, the Field Manual Committee has developed new layout, instead of the One Direction Large Arrow on the Type III barricade at the end of the taper, a LANE CLOSED (black on White) sign will be used (required when speed limit is 45 mph or greater). If the Flashing Arrow Board is not used (it is required when speed limit is 45 mph or greater), a MERGE with Arrow sign will be placed at the beginning of the taper.

PREVIOUS METHOD-
NO LONGER ALLOWED



NEW METHOD



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Chapter 16 - ADVANCE WARNING SIGN SPACING

The Advance Warning Sign Spacing for 0-30 mph has been reduced from 300 feet to 100 feet. This is more in line with the Federal MUTCD and accounts for more limited space in urban type jobs where the speed limit is 30 or less.

Chapter 18 – PLAN REVIEW – BIDABILITY, STANDARDS, & CONSISTANCY CHECKSLIST (Deleted)

This section is deleted as it was combined with Chapter 18 section – ROAD DESIGN PLANS FINAL CHECKLIST...see Design Scene Chapter 18 – ROAD DESIGN PLANS FINAL CHECKLIST for new Checklist.

Chapter 18 – PROPRIETARY ITEMS IN PLAN (Revised)

As you are aware, proprietary items are those items where a specific supplier or part is sited in the plan. In the past this was allowed if three manufacturers or suppliers were listed. That has now been changed to 2 known manufacturers or suppliers.

Whenever a proprietary item is specified, the Project Manager is to write a request for certification request to the State Design Engineer requesting Certification or a PIF for proprietary items stating why it is in the public interest to use that brand name item. It is very difficult for us in the Central Office to know why a proprietary item must be used. We therefore request that when designers specify a proprietary item, they prepare a memo indicating why this product was chosen. Reasons may be to match an existing system or design constraints.

Send the memo to the Special Provisions Engineer as soon as possible. The Special Provisions Engineer will work with the FHWA on the Public Interest Finding (PIF). For questions regarding the appropriate request (PIF or Certification) please contact the Special Provisions Engineer.

Chapter 18 – PLAN SHEET SIGNATURES

Each sheet in the plan must be signed with the exception of the cross sections, proprietary items, standard plan sheets, and a select few other sheets.

The design engineers' signature must include his/her printed name and date of the signature as required by the Minnesota Board of Architecture, Engineering, Land Surveying, Landscape Architecture, Geoscience and Interior Design (AELSLAGID). See MN Statute 326.12 Subd. 3 for signature requirements.

When the sheets are revised the signature date should be revised to reflect the date it was signed, not the original plan signature date.

An example can be found at <http://mn.gov/aelslagid/stampinfo.html>

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Chapter 18 – STATE AID PROJECT NUMBERS

In the State Aid Manual dated May 2015, Chapter 5.4 Plans and Proposals Section II.A.2 states ...*Show all SP and SAP numbers in the lower right corner of all sheets...* therefore, when you have a state aid number on your plan make sure that it is included in the bottom right corner of EVERY sheet.

The designer should also be sure to use the correct precursor for this project number. For state aid projects that are using federal funds be sure to use SP (SP = State Aid Project with federal funds). If no federal funds are being used then the project should start with SAP (State Aid Project). When either of these is being used the title sheet should include the signature block(s) for state aid as well.

FOR STATE AID PLANS

_____	20_____
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY	
_____	20_____
APPROVED FOR STATE AID FUNDING: STATE AID ENGINEER	

FOR LOCAL AGENCY SOLICITED FEDERAL AID PLANS

_____	20_____
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID AND/OR FEDERAL AID RULES/POLICY (*)	
_____	20_____
APPROVED FOR STATE AID AND/OR FEDERAL AID FUNDING: STATE AID ENGINEER (*)	

(*) This portion will be modified when State Aid and/or Federal Aid funds are used for part of the local match. For plans that contain *both Federal Aid and State Aid funding*, use the required Federal Aid signatures shown above.

State Aid project numbers consist of 3 sets of 3 numbers (###-###-###) adding leading zeros as necessary.

The first set of number relates to the Agency Number (e.g. city, county, other). These can be found at MnDOT A to Z, “State Aid (WWW)” ...

- ”Project Delivery”...”Project Number Format Guidance”
- “CSAH”...”County Numbers by District”
- “MSAS”...”Municipal Information List & Maps”...choose the option you want.

The second set of numbers relates to the route/system number. The third set of numbers relate to the project number assigned for the previous six numbers (e.g. next project on the list).

For example a project using state funds only on MSAS 132 in St. Cloud would read something like....SAP 162-132-004.