CHAPTER 2: QUANTITIES and TABULATIONS

2018 SPEC BOOK

The effective date for the 2018 Spec Book is the January 26, 2018 letting.

All project documents submitted for the January 26, 2018 letting, or later lettings, must be in accordance with the 2018 Spec Book. If your project is let on or after January 26, 2018, it must use the 2018 Spec Book. If you think your project should be granted an exemption from this requirement, submit a written request to the State Design Engineer (with justification) as soon as possible.

As part of the 2018 Spec Book the Bid item numbering is changing to be more consistent with the special provision numbering convention. This will allow for a higher degree of quality, in addition to making our estimating and specification updating more consistent moving forward.

Therefore, make sure that all plans on or after January 26, 2018 use this new numbering convention. The .6XX numbers will still require a special provision write-up for them. The following is a list of what the new trail numbers will be for ALL items.

Special Provision Numbering	Standard Specification Numbering	Plan Unit Description
.601	.501	LUMP SUM
.602	.502	EACH
.603	.503	LIN FT
.604	.504	SQ YD
.605	.505	ACRE
.606	.506	GALLON
.607	.507	CU YD
.608	.508	POUND
.609	.509	TON
.610	.510	HOUR
.611	.511	DAY
.612	.512	WEEK
.613	.513	UNIT DAY
.614	.514	STRUCTURE

Special Provision Numbering	Standard Specification Numbering	Plan Unit Description
.615	.515	ASSEMBLY
.616	.516	SYSTEM
.617	.517	SQ FT/DAY
.618	.518	SQ FT
.619	.519	ROAD STA
.620	.520	YARD
.621	.521	DOLLAR
.622	.522	MBM
.623	.523	M GALLON
.624	.524	TREE
.625	.525	SHRUB
.626	.526	VINE
.627	.527	PLANT
.628	.528	SYSTEM

Other changes/errors in the new 2018 Spec Book as it relates to putting a plan together (2### Spec Numbers) as we know them so far.

- The following items have been added to TRNS*PRT as a result of the 2018 SPEC BOOK……..

Item Number	Short Description	Unit Name
2104.502	REMOVE REFERENCE LOCATION SIGN	EACH
2104.502	SALVAGE REFERENCE LOCATION SIGN	EACH
2215.509	CEMENT	TON
2215.509	AGGREGATE BASE	TON
2215.509	BITUMINOUS MATERIAL FOR MIXTURE	TON
2390.504	COLD-IN-PLACE RECYCLED/COLD CENTRAL PLANT RECYCLING	SQ YD
2515.502	CONCRTE ARMOR UNITS A-36	EACH
2515.504	CONCRTE ARMOR UNITS A-34	SQ YD
2515.504	CONCRTE ARMOR UNITS A-36	SQ YD
2564.502	INSTALL REFERENCE LOCATION SIGN	EACH
2564.508	STRUCTURAL STEEL-POSTS FOR OH SIGNS (D)	POUND
2564.508	STRUCTURAL STEEL-TRUSSES FOR OH SIGNS (D)	POUND
2564.508	STRUCTURAL STEEL-WALKWAY SUPPORT FOR OH SIGNS (D)	POUND
2564.508	STRUCTURAL STEEL-PANEL MOUNT POST FOR OH SIGNS (D)	POUND
2564.508	STRUCTURAL STEEL-WALKWAY GRATING FOR OH SIGNS (D)	POUND
2573.502	WHEEL WASH OFF	EACH
2575.504	FLEXIBLE CONCRETE GEOGRID MAT	SQ YD
2575.504	TEMPORARY GEOTEXTILE COVERING	SQ YD
2577.502	ROOT WAD	EACH
2577.507	ROOT RAP	CU YD

- Several items have been added to the 2018 Spec Book resulting in the tail number changing from the .6## series to the .5## series. Some of them are…

2016 Spec Item #	2018 Spec Item #	Description	Units
2105.604	2105.504	GEOTEXTILE FABRIC TYPE #	SQ YD
2118.607	2118.507	AGGREGATE SURFACING (CV) FROM STOCKPILE	CU YD
2118.607	2118.507	AGGREGATE SURFACING (CV) CLASS #	CU YD
2564.602	2564.502	INSTALL MARKER	EACH
2564.602	2564.502	INFILTRATION AREA MARKER X3-6A	EACH
2564.602	2564.502	INSTALL DELINEATOR	EACH

- Under Spec 2545 the descriptions have changed as follows…
  - UNDERGROUND WIRE 1 COND NO 0 changed to UNDERGROUND WIRE 1/C 0 AWG .
  - DIRECT BURIED LIGHTING CABLE 4 COND NO 2 changed to DIRECT BURIED LIGHTING CABLE 4 COND 2 AWG .
  - OVERHEAD LIGHT CABLE 1 COND NO 3/0 changed to OVERHEAD LIGHTING CABLE 1/C 3/) AWG .

- Under Spec 2564 the whole description was changed as follows….

2016 Spec Item #	2016 Spec Description	2018 Spec Item #	2018 Spec Description	Units
2564.550/00301	DELINEATOR TYPE X3-1	2564.502/00301	RIGHT OF WAY MARKER TYPE X3-1	EACH

- Under Spec 2582 the word "EPOXY" was changed to "MULTI COMP".

- Page 98, ITEM 2105.604 GEOTEXTILE FABRIC TYPE # and Page 413 item 2511.504 GEOTEXTILE FILTER TYPE #…the Roman numeral (I, II, III, etc.) for the type has been replaced with the Alpha character (1, 2, 3, etc.).

- Spec 2106 EXCAVATION AND EMBANKMENT-COMPACTED VOLUME METHOD…
  - Page 99, Spec 2106.1A.7…Topsoil excavation is included in the Excavation-Common item and is NOT paid for separately. See design scene article in Chapter 4 on how this is handled.
  - Page 108, Spec 2106.5K…Note 2, when using this item the plan should contain a note stating how it is modified.

- Page 128, Spec 2215…
  - Item 2105.509 CEMENT should be item 2**21**5.509
  - Item 2211.509 AGGREGATE BASE CLASS # should be 2215.509 AGGREGATE BASE.

- Page 210, Spec 2360 PLANT MIXED ASPHALT PAVEMENT… Item 2106.509 TYPE SP* NON-WEARING COURSE MIXTURE should not have a dash between non and earing it should be a space (e.g. Non Wearing)

- Page 232, Spec 2390 COLD-IN-PLACE RECYCLED (CIR) BITUMINOUS AND COLD CENTRAL PLANT RECYCLING (CCPR) BITUMINOUS…
  - Item 2105.509 CEMENT should be item 2215.509.
  - Item 2211.509 AGGREGATE BASE, CLASS # is in the wrong spec., it should be 2215.509 AGGREGATE BASE.

- Page 433, Spec 2533 CONCRETE MEDIAN BARRIERS…THE * NOTE SHOULD INCLUDE "OR PLAN".

- Page 451 & 453, Item 2545.501 LIGHTING SYSTEM by LUMP SUM…
  - Now includes the removal/salvage and disposal of the miscellaneous structures, conduit, wiring, and lighting equipment from the existing system.
  - If any of this system is being salvaged the designer still needs to include a pay item for 2104.601 HAUL SALVAGED MATERIAL by LUMP SUM and note what is being hauled.
  - If the lighting system is owned by the city/county the Feds won't pay for the removal/salvage but will pay for the new/installation. **Contact the MnDOT Agreements section on how to show this in the SEQ.**

- Page 501, Spec 2565 TRAFFIC CONTROL SIGNALS…the typical unit of SIGNAL SYSTEM has been changed to just "SYSTEM".

- Page 521, Spec 2573 STORM WATER MANAGEMENT …Item 2573.504 SEDIMENT TRAP EXCAVATION should be item 2573.50**7** and move down one on the list to stay in sequential numerical order by item number.

- Page 527, Spec 2575.3C.3 TYPE 4 MULCH should read….3884, **HYDRAULIC** STABILIZED FIBER MATRIX…

- Page 540, Spec 2580 INTERIM PAVEMENT MARKING…
  - Item 2102.501 INTERIM PAVEMENT MARKING should be 2**580**.501.
  - Item 2102.503 INTERIM PAVEMENT MARKING should be 2**580**.503.

2112 SHOULDER PREPARATION

There has been some confusion on how to determine the quantity for 2112 Shoulder Preparation in the plans. *This needs to be further clarified so this section is revised as follows….*

When the shoulder preparation work is not continuous (random) it should be paid for by the LIN FT and each shoulder is counted separately. By that I mean that for a 100 foot stretch of roadway if the project is prepping only one side of the road (one shoulder) it is only 100 linear feet. But if the project is prepping both shoulders then the quantity would be 200 linear feet. Use 2112.603 SHOULDER PREPARATION by LIN FT the measurement will be made by the linear foot along the shoulder of the roadway where shoulder preparation is performed as specified.

When the shoulder preparation work is a continuous length of work (left and right sides roughly equal start and stop locations for both sides of the road) it should be paid for by the ROAD STATION and the measurement includes both shoulders of the roadway, do NOT double the quantity for this. By that I mean that for a 100 foot stretch of roadway the quantity would be 1 road station. Use 2112.619 SHOULDER PREPARATION by ROAD STA the measurement will be made by length in road stations of 100 feet along the centerline of the roadway where shoulder preparation is performed as specified.

ALTERNATE BID

The Minnesota Department of Transportation (MnDOT) has made a decision to develop alternate bid pavement plans for rehabilitation projects that fall within a certain threshold. See the letter from the Office of Materials and Road Research dated September 1, 2011 at…
http://ihub.dot.state.mn.us/operations/documents/Ops_Handout_09092011.pdf

These alternate bid pavement plans will allow certain rehabilitation projects to be bid by both bituminous and concrete contractors.
A committee was formed to formulate the following guidelines for alternate bid projects….

General Themes

As the committee discussed the sections of the plan two thoughts became prominent. The first was that as much of the plan as possible should be common to both alternates. Having as much of the plan as possible common to both alternates should keep the plan size reduced to nearly the same size as a single alternate rehabilitation project.

The second thought was that all information relating to alternates should be clearly and consistently labeled to provide a contractor as much clarity as possible in distinguishing between alternates. The committee selected to label alternates using numbers rather than letters for statewide consistency. The alternate number should be followed by a description of the alternate. An example would be "**Alternate 1 – Reclamation and Bituminous Surfacing, Alternate 2 – Concrete Overlay**". This labeling should be used consistently throughout the plan wherever alternate paving information is shown.

Recommendations for Plan Format

Title Sheet

The title on the title sheet should clearly state that the plan is an alternate pavement plan, e.g.: CONSTRUCTION PLAN FOR Grading, Alternate Bituminous or Concrete Surfacing, etc.

Statement of Estimated Quantities

Pay for the bituminous quantities by the ton and pay for concrete with two items, Sq Yd for Place Concrete Material and cubic yard for the structural concrete. This is consistent with the September 1, 2011 letter from the Office of Materials and Road Research.

1) The alternate bid quantities should be part of the main SEQ and not in separate SEQs. The alternate bid quantities should be at the end of the SEQ. The alternates should be slightly separated from the other items in the SEQ and clearly labeled as discussed under General Themes section of this report. Only those items directly related to the alternate pavement design should be listed in the alternate sections of the SEQ. In some cases, there may be items such as striping listed in the alternate sections because those items change with the pavement selected.

2) In the case where the milling depth or the reclaim depth may vary between alternates, the removal quantities that the alternates have in common should be shown in the common section of the estimated quantities. For the alternate that requires the removal of extra material, only the quantity of extra material should be shown in the alternate quantity.

General Layout and Construction Plan Sheets

For most rural plans, a General Layout should be sufficient to convey the anticipated construction. Plan details can be added later in the plan to show information that may be required for culvert replacement, superelevation transitions, etc.

Construction Plans sheets may be needed if a rural project involves inslope grading over the length of the project due to crown or superelevation correction. In these cases, erosion control,

turf establishment, culvert adjustments, etc. may need to be shown on a more detailed Construction Plan type sheet. As much information as possible should be shown on one sheet to minimize the size of the plan set.

1) For urban projects, Construction Plan sheets may be necessary to show locations of storm sewer facilities, ADA improvements, etc.

Profiles

Profiles are generally not needed unless there are intentional corrections to the profile to correct sight distance or bridge clearance.

Typical Sections

Use common typical sections where possible for existing typical and perhaps the milling and/or reclaiming.

1) Clearly label typical sections for alternates with the convention listed under the General Themes section of this report.

2) Each alternate should have its own typical section(s). Do not split a typical section between alternates (show the bituminous alternate left of centerline and the concrete alternate right of centerline).

As per the September 1, 2011 letter from the Office of Materials and Road Research, the pavement widths should be the same if possible. Pavement widths may not be 26 feet, however, due to the width of the underlying pavements upon which the new surface will be constructed.

Tabulated Quantities and Construction Notes

Most tabulated quantities and construction notes should be common to both alternatives. Tabulated quantities and construction notes that pertain to only one alternate should be clearly labeled as described in the General Themes section of this report.

Traffic Control

1) Alternate bid plans requiring reclaiming will typically require a detour for both alternates. The same detour should be used.

2) Alternate bid plans requiring milling may only require a detour for the concrete paving since the bituminous overlay could typically be done under traffic. In the case of milling type projects, several options could be considered by the District:
    a. Require the bituminous contractor use the same detour as the concrete contractor. This would keep consistency between the options and would allow the bituminous contractor the same unobstructed work site as the concrete contractor. If bridge or culvert replacement is part of a project, this may be the natural course of action.

Depending upon the length of detour and business impacts, this option may not be desirable from the public's perspective.

b. Require the bituminous contractor to work under traffic. This could require the traffic control to be considered as part of the alternate bid portion of the estimated quantities since it would be drastically different for the two alternatives. This option could be more desirable from a road user and business perspective. However, the bituminous contractor is not allowed the same unobstructed work site as the concrete contractor and heavy traffic volumes may reduce production rates or require night work.
c. Design the same detour plan for both options, but allow contractors to work under traffic if they desire. Contractors choosing to work under traffic could not submit the proposal under value engineering. A more formalized way to deal with this option, however, would be to set up an A+B contract where the B portion is determined by the number of days that the contractor would use the detour. This would allow the contractors the greatest flexibility, but would not necessarily be the best way to address user costs and business impacts.

3) The decision on Traffic Control for mill and overlay type projects will need to be addressed on a case by case basis considering other work types in the project that may require a detour, traffic volumes that may hinder productivity, business impacts, and available and reasonable detour routes.

Cross-sections

With many rehabilitation projects, cross-sections will not be needed as part of the plan set.

1) Some rehabilitation projects may require minor inslope work. The inslope work may not be readily visible on cross-sections drawn for the plan. In these cases, the cross-sections may be omitted from the plan, even though they may need to be developed to calculate quantities.

Other Issues

Other issues affecting project delivery were also discussed.

1) The designer should request a life cycle cost from the pavement engineer at the time of plan turn in. This will allow the pavement engineer sufficient time to develop the life cycle cost adjustment factor for the bidding process.

2) A standard specification for pavement smoothness has been developed for alternate pavement projects. This specification should be incorporated into the special provisions.

3) Alternate bid projects should not be combined with single alternate projects. These combinations could skew the bid of the alternate pavement to the pavement type selected for the other portion of the project.

4) Alternate bid projects should not be combined with other alternate bid projects. If a District desires to combine two alternate bid projects, the District should work with the pavement engineer to see if common typical sections and life cycle costs can be used over the length of both projects.

5) Districts may use A+B bidding in conjunction with alternate pavements. A+B contracts may be desirable when a significant difference in working days between alternates is anticipated.

Use 2301.504 "Concrete Pavement __" " by the SQ YD pay item when 2360 pay items are Square Yard. Use 2301.504 "Place Concrete Pavement __" " by the SQ YD and 2301. 507 "Structural Concrete" by CU YD pay items when 2360 pay items are Tons.

AS BUILT

Designers should include 2011.601 As Built in their plans whenever they have pay items pertaining to the following categories….

- Drainage/Stormwater
- Traffic Management Systems
- Lighting Systems
- Signing
- Traffic Control Signal Systems
- Traffic Barrier
- Earth Retaining Systems
- Noisewalls
- Landscaping
- Rumble Strips

The MnDOT 2011.601 As-Built Specification and Pay Item requires the collection and submittal of as-built data, including electronic asset location data and/or red-lined plans, by a contractor, for these assests.

Designers should eliminate incidental as-built references in other parts of the specifications (besides bridge as-builts as they are working on incorporating that as well).

Some keys to help understand 2011.601 As-Builts

- Currently located S-63 (2011) AS BUILTS revised 3/20/18
  - Two methods of data accuracy requested per spec
  - Electronic deliverables include .csv file or shapefiles and/or red-lined plans via County Coordinate System.
- External Web-site: GPS As-Built Deliverable
  - More information that include asset specific information for contractors and example data tables: Table K and Table Z
  - Submittal information: MnDOT Project Engineer and copy AsBuilts.DOT@state.mn.us .

BRIDGES & BOX CULVERTS

There has been come confusion this season in how Bridge items are documented in project plans and financial information. There is also a need to reinforce how these items are tracked for financial purposes.

The following guidance is related to Bridge replacements, new Bridges and Box Culverts with or without Bridge numbers.

Bridge Replacements:

Bridge/Box Culvert Replaced with Bridge

If you have an existing bridge/culvert with a Bridge number that is replaced with a new bridge, the new bridge has a Bridge plan completed that is attached as a separate plan. Bridge plans are not embedded in the grading plans but rather attached at the end.

The existing and new bridge numbers are identified on the Grading plan title sheet index map (e.g. Remove Br. No XXX, Proposed Br. No. XXX) and the new bridge is included in the project description. The Bridge pay items (in the bridge plan only) and quantities are in a separate cost/funding group or groups. The Bridge numbers (new and existing) should also be identified in the appropriate sections of the plan such as the general layout, construction plans and profiles.

Bridge/ Box Culvert Replace with Box Culvert 10' and Over

If you have an existing bridge/culvert with Bridge number that is replaced with a Box culvert that is 10 ' or over and has a Bridge number, the new box culvert has plan sheets that are incorporated INTO the Grading Plan.

The existing bridge and new box culvert bridge numbers are identified on the Grading plan title sheet index map (e.g. Remove Br. No XXX, Proposed Box Culvert. No. XXX) and the new bridge is included in the project description. The pay items and quantities for each individual box culvert and end sections are in separate cost/funding group or groups. Since these items are included in the grading plan quantities, the items must have footnotes on the SEQ referencing the culvert and end sections that are for the specific Bridge number noted on the Box culvert. When the project includes multiple box culverts of the same size with different bridge numbers, the footnotes need to identify the quantities for each bridge number. The Bridge numbers (new and existing) should also be identified in the appropriate sections of the plan such as the general layout, construction plans and profiles.

Example of Single Bridge/Box Culvert

NOTES	ITEM	DESCRIPTION	UNIT	QUANTITY
(2)	2412.502	12X11 PRECAST CONCRETE BOX CULVERT END SECT	EACH	2
(2)	2412.503	12X11 PRECAST CONCRETE BOX CULVERT	LIN FT	150
(1)	2442.501	REMOVE EXISTING BRIDGE	LUMP SUM	1
	(1) Bridge No. 1234 consists of 25'x25' concrete beam structure.			
	(2) Box Culvert No. 23X10, Replaces Bridge No. 1234.			

Example of Single Box Culvert/Box Culvert

NOTES	ITEM	DESCRIPTION	UNIT	QUANTITY
(1)	2104.502	REMOVE CONCRETE BOX CULVERT END SECTION	EACH	2
(1)	2104.503	REMOVE CONCRETE BOX CULVERT	LIN FT	130
(2)	2412.502	12X11 PRECAST CONCRETE BOX CULVERT END SECT	EACH	2
(2)	2412.503	12X11 PRECAST CONCRETE BOX CULVERT	LIN FT	150
	(1) Bridge No 1234, 12x10 Box Culvert.			
	(2) Box Culvert No 23X10, Replaces Bridge No. 1234.			

Example of Multiple Bridges/Box Culvert

NOTES	ITEM	DESCRIPTION	UNIT	QUANTITY
(4)	2412.502	12X11 PRECAST CONCRETE BOX CULVERT END SECT	EACH	6
(4)	2412.503	12X11 PRECAST CONCRETE BOX CULVERT	LIN FT	350
(1)	2442.501	REMOVE EXISTING BRIDGE A	LUMP SUM	1
(2)	2442.501	REMOVE EXISTING BRIDGE B	LUMP SUM	1
(3)	2442.501	REMOVE EXISTING BRIDGE C	LUMP SUM	1
	(1) Bridge No. 1234 consists of 25'x25' concrete beam structure.			
	(2) Bridge No 5678 consists of 20' timber structure.			
	(3) Bridge No 9123 consists of 35' x 35' concrete beam structure.			
	(4) Box Culvert no 23X10 = 100' with 2 end sections, Replaces Bridge No. 1234.			
	Box Culvert No 23X11 = 150' with 2 end sections, Replaces Bridge No. 5678.			
	Box Culvert No 23X12 = 100' with 2 end sections, Replaces Bridge No. 9123.			

Bridge/ Box Culvert Replace with Box Culvert under 10'

If you have an existing bridge/culvert with Bridge number that is replaced with a Box culvert that is less than 10', it will not have a bridge number but will have box culvert plan sheets that are incorporated into the Grading Plan.

The existing bridge number being replaced is identified on the Grading plan title sheet index map (e.g. Remove Br. No. XXX) and included in the project description. The pay items and quantities for each individual box culvert and end sections are in separate cost/funding group or groups. Since these items are included in the grading plan quantities, the items must have footnotes on the SEQ referencing each individual culvert and end sections that are for the specific Bridge number being replaced. When the project includes multiple box culverts of the same size replacing existing structures (with bridge numbers), the footnotes need to identify the quantities for each existing bridge number. The Bridge numbers (existing) should also be identified in the appropriate sections of the plan such as the general layout, construction plans and profiles.

Example of Single Bridge/Box Culvert

NOTES	ITEM	DESCRIPTION	UNIT	QUANTITY
(2)	2412.502	8X8 PRECAST CONCRETE BOX CULVERT END SECT	EACH	2
(2)	2412.503	8X8 PRECAST CONCRETE BOX CULVERT	LIN FT	150
(1)	2442.501	REMOVE EXISTING BRIDGE	LUMP SUM	1
	(1) Bridge No. 1234 consists of 25'x25' concrete beam structure.			
	(2) Replaces Bridge No. 1234.			

Example of Single Box Culvert/Box Culvert

NOTES	ITEM	DESCRIPTION	UNIT	QUANTITY
(1)	2104.502	REMOVE CONCRETE BOX CULVERT END SECTION	EACH	2
(1)	2104.503	REMOVE CONCRETE BOX CULVERT	LIN FT	130
(2)	2412.502	8X8 PRECAST CONCRETE BOX CULVERT END SECT	EACH	2
(2)	2412.503	8X8 PRECAST CONCRETE BOX CULVERT	LIN FT	150
	(1) Remove 6'x8' box culvert and end sections.			
	(2) Replaces 6'x8' box culvert with end sections.			

Example of Multiple Bridges/Box Culvert

NOTES	ITEM	DESCRIPTION	UNIT	QUANTITY
(4)	2412.502	12X11 PRECAST CONCRETE BOX CULVERT END SECT	EACH	6
(4)	2412.503	12X11 PRECAST CONCRETE BOX CULVERT	LIN FT	350
(1)	2442.501	REMOVE EXISTING BRIDGE A	LUMP SUM	1
(2)	2442.501	REMOVE EXISTING BRIDGE B	LUMP SUM	1
(3)	2442.501	REMOVE EXISTING BRIDGE C	LUMP SUM	1
	(1) Bridge No. 1234 consists of 25'x25' concrete beam structure.			
	(2) Bridge No 5678 consists of 20' timber structure.			
	(3) Bridge No 9123 consists of 35' x 35' concrete beam structure.			
	(4) Box Culvert at Station 101+00 = 100' with 2 end sections, Replaces Bridge No. 1234.			
	Box Culvert at Station 105+70 = 150' with 2 end sections, Replaces Bridge No. 5678.			
	Box Culvert at Station 120+35 = 100' with 2 end sections, Replaces Bridge No. 9123.			

Bridge/ Box Culvert Replace with Pipe

If you have an existing bridge/culvert with Bridge number that is replaced with a pipe, it will not have a new bridge number but will have plan sheets that are incorporated into the Grading Plan.

The existing bridge number being replaced is identified on the Grading plan title sheet index map (e.g. Remove Br. No. XXX) and included in the project description. The pay items and quantities for the pipe and end sections are in a separate cost/funding group or groups. Since these items are included in the grading plan quantities, the items must have footnotes on the SEQ referencing the pipe and end sections that are for each individual Bridge number being replaced. When the project includes multiple pipes of the same size replacing existing structures (with bridge numbers), the footnotes need to identify the quantities for each existing bridge number. The Bridge numbers (existing) should also be identified in the appropriate sections of the plan such as the general layout, construction plans and profiles.

Example of Single Bridge/Box Culvert

NOTES	ITEM	DESCRIPTION	UNIT	QUANTITY
(1)	2442.501	REMOVE EXISTING BRIDGE	LUMP SUM	1
(2)	2501.502	72" RC SAFETY APRON & GRATE DES 3132	EACH	2
(2)	2501.503	72" RC PIPE CULVERT CLASS IV	LIN FT	150
	(1) Bridge No. 1234 consists of 25'x25' concrete beam structure.			
	(2) Replaces Bridge No. 1234.			

Example of Single Box Culvert/Box Culvert

NOTES	ITEM	DESCRIPTION	UNIT	QUANTITY
(1)	2104.502	REMOVE CONCRETE BOX CULVERT END SECTION	EACH	2
(1)	2104.503	REMOVE CONCRETE BOX CULVERT	LIN FT	130
(2)	2501.502	72" RC SAFETY APRON & GRATE DES 3132	EACH	2
(2)	2501.503	72" RC PIPE CULVERT CLASS IV	LIN FT	150
	(1) Remove 6'x8' box culvert and end sections.			
	(2) Replaces 6'x8' box culvert.			

Example of Multiple Bridges/Box Culvert

NOTES	ITEM	DESCRIPTION	UNIT	QUANTITY
(1)	2442.501	REMOVE EXISTING BRIDGE A	LUMP SUM	1
(2)	2442.501	REMOVE EXISTING BRIDGE B	LUMP SUM	1
(3)	2442.501	REMOVE EXISTING BRIDGE C	LUMP SUM	1
(4)	2501.502	72" RC SAFETY APRON & GRATE DES 3132	EACH	6
(4)	2501.503	72" RC PIPE CULVERT CLASS IV	LIN FT	350
	(1) Bridge No. 1234 consists of 25'x25' concrete beam structure.			
	(2) Bridge No 5678 consists of 20' timber structure.			
	(3) Bridge No 9123 consists of 35' x 35' concrete beam structure.			
	(4) Culvert at Station 101+00 = 100' with 2 end sections, Replaces Bridge No. 1234.			
	Culvert at Station 105+70 = 150' with 2 end sections, Replaces Bridge No. 5678.			
	Culvert at Station 120+35 = 100' with 2 end sections, Replaces Bridge No. 9123.			

New Bridges:

New Bridge

If you have a new bridge, the new bridge has a Bridge plan completed that is attached to the Grading Plan. The new bridge number is identified on the Grading plan title sheet index map and included in the project description. The Bridge pay items and quantities are in a separate cost/funding group or groups. Bridge plans are not embedded in the grading plans but rather attached at the end. The Bridge numbers (new) should also be identified in the appropriate sections of the plan such as the general layout, construction plans and profiles.

New Box Culvert 10' or Over

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

are identified on the Grading plan title sheet index map (Proposed Box Culvert No. XXxXX) and included in the project description. The pay items and quantities for each individual box culvert and end sections are in a separate cost/funding group or groups. Since these items are included in the grading plan quantities, the items must have footnotes on the SEQ referencing the culvert and end sections that are for the specific Bridge number noted on the Box culvert. When the project includes multiple box culverts of the same size with different bridge numbers, the footnotes need to identify the quantities for each bridge number. The Bridge numbers (new) should also be identified in the appropriate sections of the plan such as the general layout, construction plans and profiles.

Example of Single Bridge/Box Culvert

NOTES	ITEM	DESCRIPTION	UNIT	QUANTITY
(1)	2412.502	12X11 PRECAST CONCRETE BOX CULVERT END SECT	EACH	2
(1)	2412.503	12X11 PRECAST CONCRETE BOX CULVERT	LIN FT	150
	(1) Box Culvert No 23X10.			

Example of Multiple Bridges/Box Culvert

NOTES	ITEM	DESCRIPTION	UNIT	QUANTITY
(1)	2412.502	12X11 PRECAST CONCRETE BOX CULVERT END SECT	EACH	6
(1)	2412.503	12X11 PRECAST CONCRETE BOX CULVERT	LIN FT	350
	(1) Box Culvert no 23X10 = 100' with 2 end sections			
	Box Culvert No 23X11 = 150' with 2 end sections			
	Box Culvert No 23X12 = 100' with 2 end sections			

New Box Culvert under 10'

If you have a new Box culvert that is less than 10', it will not have a bridge number but will have box culvert plan sheets that are incorporated into the Grading Plan. The box culverts are not identified on the Grading plan title sheet or included in the project description. The pay items and quantities for box culverts and end sections without bridge numbers are incorporated into the grading cost/funding group.

Items such as grading, pavement, guardrail, riprap, erosion control, and turf are not required or recommended for inclusion in the box culvert cost groups (unless it is shown in the items on separate Bridge SEQ's/Plans) to aid in more efficient contract management in the field.

CITY/COUNTY FUNDS

When you have a plan that has city/county funds include the name of the city or county that is participating in the costs. Place the name with the funding information either in the SEQ column heading or in a funding note.

If there is a State Aid SP or SAP on a project the plan will require either one or two signatures from the State Aid office on the title sheet. For appropriate signature block descriptions and signatures from the State Aid office contact the District State Aid office. If the plan requires CO

State Aid to sign the title sheet obtain the signature or make arrangements with CO State Aid to sign.

COMBINATION FIELD LABORATORY OFFICE

Whenever this item is used in the plan it needs to include a note in the estimated quantity table…REQUIRES TYPE??? SERVICE.

CONCRETE MEDIAN BARRIER DESIGN TYPE AA

Concrete median barrier should be measured and paid for separately by type. Type A, Type AL and Type transition barrier lengths are measured along the top of the barrier, essentially one foot of barrier for each foot of median. Type AA barrier is also measured along the top of the barrier but each side is measured separately.

CULVERT/STORM TREATMENTS

When these details are included in the plan it needs to be clear how the excavation is being paid for. This CANNOT be incidental as this is over and above what a culvert excavation would be. Make sure the detail makes it clear how the excavation is being paid for and include quantities in the earthwork tabulation to account for this work.

ESTIMATED QUANTITIES FORMAT

The quantities put on the estimate sheet should normally be rounded to the nearest whole number. We should avoid using decimals, if possible. Only in cases of extremely small quantities should decimals be used and then only to the tenth place.

Commas should not be used either. For large numbers either leave a space where the comma would typically go or just continue the number (e.g. 12 345 or 12345 instead of 12,345).

When using small numbers as in the case of prorate items, a zero should be placed before the decimal number. (e.g. 0.5 instead of .5).

Do NOT use zeros or dashes in the estimated quantities table or any tabs. These locations should be left blank.

The statement of estimated quantity (SEQ) table should begin with the tab column. This will then be followed by the Sheet number column.

Next will be the Item number column followed by the item description column. After this will be the units column. Be sure to follow the standard abbreviations as shown later in this chapter.

There will only be one total column. It will not have a final estimate column. The Total Estimate Column should always follow the Unit column on the estimated quantities table. If there is more than one SP or one funding source the Total Estimate Column should come first

then the prime SP followed by the next major SP and ending with the state aid/city/county SP . If there is only one SP then only the total column should be shown not a total and SP column. The following is an example of how the headings in the estimate column should be shown…

Tab	Sheet #	Item #	Item Description	Units	Total Estimated Quantity	SP Prime # Quantity	SP Secondary # Quantity	State Aid SP # Quantity

If there is only one SP then the following headings are recommended…

Tab	Sheet #	Item #	Item Description	Units	Total Estimated Quantity

The sheet # column (if used) should reference the sheet that the tab is on and/or any special details other than standard plan sheets. We do NOT reference standard plan sheets.

FOG SEAL

When using item 2355 BITUMINOUS MATERIAL FOR FOG SEAL. It should include a note that gives the dilution and mix rate. The note would read something like…
Quantity based on diluted mixture at a 1:1 rate applied at 0.08 gallons per square yard.

FUNDING

As the funding has become more complicated it is necessary to make sure that it is entered into the system correctly and shown on the plans correctly.

The funding sources (e.g. state, federal, city, county, state aid, etc.) need to be determined early in the process. If there are multiple funding sources then the Statement of Estimated Quantities (SEQ) and the tabulations need to show the funding splits. ALL TABS need to show the funding splits, even traffic and drainage tabs.

Quantities on the estimated quantities sheets must be split into as many columns as there are separate funding groups; the factors that determine funding groups are funding source, project number, and percentage of participation. Specific funding information should be included at the top of each group column.

MnDOT participation should be indicated by showing the percentage of MnDOT participation for each group. When there is more than one State Project Number, each separate state funding source is a separate group and the appropriate State Project Number should be indicated.

The Federal Project Number, State Project Number, and State Aid Project Number must be shown on the construction plan title sheet. These will be located on the bottom right corner of the title sheet. At a minimum the Prime SP number needs to be in the bottom right corner of every sheet. The State Aid number(s) needs to be on the bottom right corner of EVERY plan

sheet as well. The other SP numbers may also be on every sheet but do not have to be (other than the title sheet).

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 an alpha note at the top of the column. The notes on the SEQ sheet will need to include ….

A typical note for a…

- Schedule "I" agreement reads…100% CITY FUNDS S.A.P. XXX-XXX-XXX. SEE AGREEMENT NUMBER XXXXXXX with the CITY OF CROCKER.
- Lump Sum or Lump Sum based on bids agreement reads…SEE LUMP SUM AGREEMENT NUMBER XXXXXXX with SWANSON COUNTY.

Lump sum agreement Subnote should be added to the column when the items for a lump sum agreement are included in that column.

When 100% local funds apply to more than 5 items, then you need a column for those items.

When 100% local funds apply to 5 items or less and it is not a lump sum agreement, then subnote those items with an alpha character note which will read….100% CITY FUNDS SEE AGREEMENT NUMBER XXXXXXX with the CITY OF CROCKER.

For example….

ITEM	DESCRIPTION	UNITS	TOTAL ESTIMATED QUANTITY	ESTIMATED QUANTITY SP 1111-11 **(A)**	ESTIMATED QUANTITY SAP 111-112-121 (B)	100% CITY OF CROCKER FUNDS (C)
2021.501	MOBILIZATION	LUMP SUM	1	0.5	0.3	0.2
2104.502	REMOVE CONCRETE APRON	EACH	10	5	3	2
2105.504	GEOTEXTILE FABRIC TYPE 3	SQ YD	200	100	50	50

(A) SEE LUMP SUM AGREEMENT NUMBER 1234567 WITH THE CITY OF CROCKER or
(A) SEE AGREEMENT NUMBER 1234567 WITH SWANSON COUNTY (64% FEDERAL, 16% STATE, 20% COUNTY FUNDS)
(B) SEE AGREEMENT NO 1234568 WITH THE CITY OF CROCKER (100% STATE AID FUNDS) or
(B) SEE AGREEMENT NO 1234568 WITH SWANSON COUNTY (80% STATE AID, 20% COUNTY FUNDS)
(C) SEE AGREEMENT NO 1234569 WITH THE CITY OF CROCKER (100% CITY FUNDS)

The funding percentages must total 100% for each column.

If there are federal funds and/or unique funds the SEQ needs to show the funding splits. (e.g. 80% Federal/20% State Funds). When there is more than one Federal Project Number, each separate federal aid funding source is shown as a separate group and the appropriate Federal Project Number should be indicated.

If the funding designations (80% Federal/20% State Funds) do not fit in the SEQ column headings then they should be shown as a note. The note should be a lettered note (e.g. A, B, C, etc.) not a numbered note. It should be set apart from the numbered notes so that it stands out and is noticed.

Do NOT use numbered notes for any funding items. Even the "100% State Funds" note should be a lettered note.

If federal funds are applied to the local share, the local federal funds must be identified in the STIP, and the local share needs a federal State Aid project number.

For further information regarding cost participation information required in the construction plan, see the "Metro Sample Plan," MnDOT Policy for Cost Participation for Cooperative Construction Projects and Maintenance Responsibilities between MnDOT and Local Units of Government, or contact MnDOT's Design Service Engineer, the Funding Program Coordinator in the MnDOT Office of Transportation System Management, or MnDOT's Cooperative Agreements Engineer.

HAUL SALVAGED MATERIAL

Our specification (Spec. 2104 and 2442) spell out that salvaged materials will be neatly stored within the project limits. The F.H.W.A. won't pay to haul salvaged materials off the construction project. If Maintenance prefers not to handle the material, the item 2104.601 Haul Salvaged Material by the Lump Sum should be added and is state funded.

INCIDENTAL AND LUMP SUM ITEMS

An internal review of our existing process for the development of engineer's estimates for construction projects identified a number of risk areas and change needs. The following process changes will be made immediately. These adjustments to our process will result in reducing the risk of inadvertent disclosure of nonpublic data prior to project award per Minnesota Statute §13.72, subd. 1.

These new procedures will be applied to all projects that are included in the MnDOT letting process.

The INCIDENTAL, FOR INFORMATION ONLY, and LUMP SUM quantities will no longer be supplied in the plan or special provisions. The list of elements and application rates included in the incidental and lump sum items can be listed in the plan and special provisions but not the quantities.

FOR INFORMATION ONLY statement as associated with quantities will no longer be allowed in the plans.

This information will be supplied in the current tabulated or listed format via a stand alone document to the Cost Estimating Engineer and the Design Support Engineer only, at the time of project submittal. The Preliminary Estimate and Data Base file (*.mdb) will be located in the specific projects ProjectWise location (a right protected folder), with AD group name of "DxEstimates" and a Folder name of "Estimates Restricted" which restricts access for anyone except newly established AD group (Ex. Design Engineer, Lead Designer & District Cost Estimating Engineer).

LUMP SUM ITEMS

The term, "lump sum," when used as a unit of measurement for payment, means complete payment for that item of work as described by the contract. A description of the work to be paid for as a "lump sum" is included in the plans so that contractors bidding on the project will know exactly what work and materials are included in the pay item. These "lump sum" items usually include work items that are used on many projects. Either a bill of materials has been developed for them (such as standardized traffic control or traffic control interconnection systems) or they are routine work items that do not vary significantly from project to project (such as maintenance or restoration of haul roads).

Clear definition in the plan of what is expected in each case contributes to harmony and better results at less cost during construction. More accurate estimates are promoted as well. There is no good substitute for careful research and determination of reasonably accurate quantities. Pursuing this a bit further - occasionally a plan provides for direct payment for certain items yet advises bidders that certain like items of unknown quantity required to be furnished by the contractor as included in one thing or another will not be measured for payment. This can only be disadvantageous to the state. The bidder must again include a sufficient sum somewhere in his proposal to cover the costs of the unknown quantity to protect themselves and then still demand direct payment of the engineer. How can direct payment be justified for the known quantity but not for the unknown? Better to provide that the unknown quantities will be paid for at the appropriate contract price. Gives estimators a break, too. The preceding cases are even more confusing when the extent of the unknown quantities is subject to "as direct (or ordered) by the engineer."

LUMP SUM ON MULTIPLE COLUMN OR TIED PLANS

There has been some confusion on how to show quantities for Lump Sum (non-prorated) (see PRORATA ITEMS article in this chapter) on multiple column plans and tied plans.
For multi column plans and/or tied plans

- A quantity of 1 should be placed under the total column and the prime S.P. column. All the other S.P. columns should be left blank, or
- If it only applies to a column (not the prime S.P.) then the 1 should go in that column, or
- If the designer feels it is absolutely necessary to split the item then it can be divided between the various columns or tied plan, based on the amount of work needed for that work not based on cost. The decimal for these items can only go to the tenths place.

Examples can be found at….
Multiple Funding Type examples

MAINTENANCE AND RESTORATION OF HAUL ROADS

The pay item 2105.501 "Maintenance and Restoration of Haul Roads" Lump Sum should be used on all projects that require raw materials to be hauled to or from the job site. Such as projects that include, but are not limited to, Borrow items, Bituminous materials, Concrete materials.

Stand-alone projects such as crack repairs, landscaping, striping, and guardrail would not need the pay item in the SEQ.

MOBILIZATION ITEM

The item is intended to cover the contractor's costs to mobilize labor and equipment to the project as well as other costs such as performance bond, job superintendent, testing, engineering and miscellaneous costs that have not been assigned to another bid item.

Occasionally, we see a plan without the mobilization item included. Since mobilization is a real cost to contractors, they must add their mobilization cost to the cost of another item(s). This unbalancing of bid items can distort average bid prices generated for the purpose of estimating. In the interests of providing the most accurate historical bid prices for construction, it is important to include a bid item for mobilization in our plans. The few exceptions to this would be standalone projects such as, but not limited to, landscaping, signal, TMS, and lighting jobs.

PLAN QUANTITIES (P)

The "P" designation on individual Contract Items or specific portions of Contract Items in the Statement of Estimated Quantities on the Plan means that Plan dimensions will be used to calculate the pay quantity for that Contract Item. The purpose of the use of "P" designated quantities is to avoid the expense of measuring dimensions in the field, if original Plan dimensions remain valid. The use of "P" designated quantities is limited to Contract Items with specified dimensions that can be controlled by field checks during, or after construction. Items with the "P" designation must have quantities that are calculated using dimensions in the plan.

Some examples of Items where a "P" designation might be appropriate include the following:

ITEM	DESCRIPTION	UNITS
2101.505	CLEARING	Acre
2101.505	GRUBBING	Acre
2104.503	REMOVE	Lin. Ft.
2104.504	REMOVE	Sq. Yd.
2104.518	REMOVE	Sq. Ft.
2105.507	COMMON EXCAVATION	Cu. Yd.

ITEM	DESCRIPTION	UNITS
2105.507	ROCK EXCAVATION	Cu. Yd.
2105.507	MUCK EXCAVATION	Cu. Yd.
2105.507	SUBGRADE EXCAVATION	Cu. Yd.
2105.507	CHANNEL AND POND EXCAVATION	Cu. Yd.
2105.507	ROCK CHANNEL EXCAVATION	Cu. Yd.
2106.507	EXCAVATION – COMMON	Cu. Yd.
2106.507	EXCAVATION – SUBGRADE	Cu. Yd.
2106.507	EXCAVATION – ROCK	Cu. Yd.
2106.507	EXCAVATION – MUCK	Cu. Yd.
2211.507	AGGREGATE BASE (CV), CLASS _	Cu. Yd.
2221.507	SHOULDER BASE AGGREGATE (_V) CLASS _	Cu. Yd.
2232.504	MILL BITUMINOUS SURFACE (__")	Sq. Yd.
2301.504	CONCRETE PAVEMENT _"	Sq. Yd.
2301.504	PLACE CONCRETE PAVEMENT _"	Sq. Yd.
2301.508	SUPPLEMENTAL PAVEMENT REINFORCEMENT	Pound
2360.504	TYPE _# _COURSE MIX (_) _" THICK	Sq. Yd.
2360.504	TYPE _#_ COURSE MIX (_)	Sq. Yd.
2401.507	STRUCTURAL CONCRETE (MIX NO.)	Cu. Yd.
2401.507	STRUCTURE EXCAVATION, CLASS _	Cu. Yd.
2401.508	REINFORCEMENT BARS	Pound
2401.508	REINFORCEMENT BARS (EPOXY COATED)	Pound
2401.508	STEEL FABRIC	Pound
2401.508	SPIRAL REINFORCEMENT	Pound
2401.508	SPIRAL REINFORCEMENT, (EPOXY COATED)	Pound
2402.503	ORNAMENTAL METAL RAILING	Lin. Ft.
2402.503	PIPE RAILING	Lin. Ft.
2411.504	CONCRETE FOOTING	Sq. Yd.
2411.507	STRUCTURAL CONCRETE (MIX NO.)	Cu. Yd.
2411.507	STRUCTURE EXCAVATION, CLASS _	Cu. Yd.
2411.507	GRANULAR BACKFILL (CV)	Cu. Yd.
2411.507	AGGREGATE BACKFILL (CV)	Cu. Yd.
2411.508	REINFORCEMENT BARS	Pound
2411.508	REINFORCEMENT BARS (EPOXY COATED)	Pound
2451.507	STRUCTURE EXCAVATION, CLASS _	Cu. Yd.
2451.507	GRANULAR BACKFILL (CV)	Cu. Yd.
2451.507	AGGREGATE BACKFILL (CV)	Cu. Yd.
2451.507	GRANULAR BEDDING (CV)	Cu. Yd.
2451.507	FINE AGGREGATE BEDDING (CV)	Cu. Yd.
2451.507	COARSE AGGREGATE BEDDING (CV)	Cu. Yd.
2451.507	CONDUITE AGGREGATE BEDDDING (CV)	Cu. Yd.
2451.507	COURSE FILTER AGGREGATE (CV)	Cu. Yd.
2451.507	FINE FILTER AGGREGATE (CV)	Cu. Yd.
2461.507	CONCRETE MIX NO.___	Cu. Yd.

ITEM	DESCRIPTION	UNITS
2501.507	CULVERT EXCAVATION, CLASS _	Cu. Yd.
2575.505	SEEDING	Acre
2575.505	DISK ANCHORING	Acre

Some examples of Items where a "P" designation is **not** appropriate include the following:

2118.509	AGGREGATE SURFACING, CLASS ___	Ton
2130.523	WATER	M Gallon
2131.506	CALCIUM CHLORIDE SOLUTION	Gallon
2131.509	CALCIUM CHLORIDE, TYPE___	Ton
2211.509	AGGREGATE BASE, CLASS___	Ton
2301.507	STRUCTURAL CONCRETE HIGH EARLY	Cu. Yd.
2301.507	STRUCTURAL CONCRETE	Cu. Yd.
2331.509	BITUMINOUS MATERIAL FOR MIXTURE	Ton
2355.506	BITUMINOUS MATERIAL FOR FOG SEAL	Gallon
2360.509	TYPE SP __ WEARING COURSE MIXTURE __	Ton
2360.509	TYPE SP __ NON-WEARING COURSE MIXTURE _	Ton

If only a portion of the quantity for an Item can be calculated using dimensions in the plan, then only that portion can have the "P" designation and can be shown as follows with a footnote:

2105.507 COMMON EXCAVATION (5) Cu.Yd. 1,289,582 (985 956.4) (P)

(5) This is a partial "P" quantity. The quantity is a "P" quantity except for the area between Sta. 842 to 851 which will be field measured.

PRORATA ITEMS

There has been some confusion on which items should be prorated in construction plans which involve more than one SP. Proration distributes the cost of items such as mobilization and field office among the various funding groups and/or SP's so that they all share in the cost of these items. It should be noted that ONLY the following items should be prorated:

Mobilization	Lump sum
Field Office	Each
Field Laboratory	Each
Traffic Control	Lump Sum

The pro-rata percentage assigned to each funding split (including bridge costs, if applicable) shown in the plans is determined by dividing the dollar value of work associated with that split by the total dollar value of the contract (including bridge costs), less the pro-rata items.

The prorata percentage for each funding split is to be computed to two decimal places and tabulated on the estimated quantities sheet. The designer is to use estimated quantities and

estimated prices to compute the prorata percentages. No other items should be taken to two decimal places. (There are a few rare exceptions to this such as signals with agreements.) Prorata percentages should be shown on the grading plan only, even when bridge costs are included in calculation,

Special circumstances may justify an exception to these procedures. These situations should be reviewed with the Municipal Agreements Unit and the Plan Review Unit, and the determination of how to handle such exception will be made on a case-by-case basis.

Prorata Items Involving Cooperative Construction

A sample computation of prorata items is shown below for reference.

Sample Computation
of PRORATA ITEMS
for Cooperative Construction
Agreements
Total Contract Cost **(including bridge cost)** = $220,500.00

Prorata Items

Mobilization	$10,000.00
Field Office	$ 3,000.00
Field Laboratory	$ 2,500.00
Traffic Control	$ 5,000.00
Total Cost of Prorata Items	**$20,500.00**

Total Contract Cost Minus Total Cost of Prorata Items
$220,500.00 - $20,500.00 =
$200,000.00

Cost of each Funding Group & Bridge
(Cost for each group does not include cost for prorata items)

Group 1:	100% State	**$101,000.00**
Group 2:	60% State, 40% City	$ 87,200.00
Group 3:	56% State, 44% City	$ 1,000.00
Group 4:	100% City	$ 800.00
Bridge:	**100% State**	**$10,000.00**

Prorata Percentage for each Funding Group

Group 1: **($101,000.00+$10,000.00)** = 0.555 (Use 0.55)
$200,000.00

Group 2: $ 87,200.00 = 0.436 (Use 0.44)
$200,000.00

Group 3: $ 1,000.00 = 0.005 (Use 0.01)
$200,000.00

Group 4: $ 800.00 = 0.004 (Use 0.00)
$200,000.00

STATEMENT OF ESTIMATED QUANTITIES							
ITEM NO.	ITEM	UNITS	TOTAL ESTIMATE	GROUP 1	GROUP 2	GROUP 3	GROUP 4
2021.501	MOBILIZATION	LUMP SUM	1	0.55	0.44	0.01	
2031.502	FIELD OFFICE, TYPE D	EACH	1	0.55	0.44	0.01	
2031.502	FIELD LABORATORY,	EACH	1	0.55	0.44	0.01	
2563.601	TRAFFIC CONTROL	LUMP SUM	1	0.55	0.44	0.01	

Prorata items on Tied Plans

There has been some confusion on how to show the prorated items for tied plans.
When the tied plan has the same funding for all the SP's.

			PLAN A			PLAN B			
Item No.	Description	Unit	TOTAL A	SP 1111-11		TOTAL B	SP 2222-22	SP 3333-33	
2021.501	MOBILIZATION	LUMP SUM	1	1					ACCEPTABLE
2021.501	MOBILIZATION	LUMP SUM	1						ACCEPTABLE
2021.501	**MOBILIZATION**	**LUMP SUM**							**ACCEPTABLE - PREFERRED**

When the tied plan has a different funding for at least one of the SP's.

			PLAN A			PLAN B			
Item No.	Description	Unit	TOTAL A	SP 1111-11		TOTAL B	SP 2222-22	SP 3333-33	
2021.501	MOBILIZATION	LUMP SUM	0.25	0.25		0.75	0.35	0.40	ACCEPTABLE

STANDARD ABBREVIATIONS FOR PAY ITEMS

The item descriptions in the estimated quantities table should follow the transport list. The list shows both a short description and a long description. The designer can use either option, which means that the descriptions can be mixed. Some descriptions can be long and some can be short. But an individual item itself can't be part long and part short). Also the description must match EXACTLY as it is shown in transport.

The UNITS must also follow the standard abbreviation as follows…

As Shown in Plan	Definition	As Shown in Plan	Definition	As Shown in Plan	Definition
LUMP SUM	Lump Sum	DAY	Day	YARD	Yard
EACH	Each	WEEK	Week	DOLLAR	Dollar
LIN FT	Linear Foot	UNIT DAY	Unit Day	MBM	Thousand Board Feet
SQ YD	Square Yard	STRUCTURE	Structure	M GALLON	Thousand Gallons
ACRE	Acre	ASSEMBLY	Assembly	TREE	Tree
GALLON	Gallon	SYSTEM	System or Signal System	SHRUB	Shrub
CU YD	Cubic Yard	SQ FT/DAY	Square Foot/Day	VINE	Vine
POUND	Pound Ton	SQ FT	Square Foot/Day	PLANT	Plant
HOUR	Hour	ROAD STA	Road Station		

TABULATION DEVELOPMENT

When tabulations are under development it is good practice to leave an open line space every 5 or 6 lines. This practice is desirable when corrections or additions have to be made on the sheets. Some designers are not leaving enough space below the tabulations for the addition of notes if some have to be added after the plan is turned in for processing. A two inch minimum space from the bottom border line of the plan sheet to the lower line on the tabulation is desirable.

If a note is written with a tab it should not be repeated with the SEQ. The note should only appear in one location (either the SEQ or the tab, not both).

Tab letters should be placed in the top right corner of the tab box. It should be in capital letters and it is recommended that you do not use the letters "I", "O", or "Q".

WEED SPRAYING

When using weed spraying the plan should contain both…

- 2575.505 WEED SPRAYING by ACRE and
- 2575.506 WEED SPRAY MIXTURE by GALLON.

The weed spraying covers the process of applying the mixture. This needs to include a note either in the SEQ or Tabulation of the application rate.

The weed spray mixture is the cost of the product being applied. This needs to include a note either in the SEQ or Tabulation of the weed spray mixture to be used. Since there are many types of weed sprays and certain ones are used for certain types of weeds there may be more than one needed. For further information contact the Office of Environmental Stewardship.

WORK ZONE ITEM CHANGES

As a result of recent updates to the 1404 MAINTENANCE OF TRAFFIC and 2563 TRAFFIC CONTROL provisions two traffic control pay items have changed.

- 2563.610 FLAG PERSON by HOUR is now "2563.610 FLAGGER"
- 2563.613 WORK ZONE SPEED LIMIT by UNIT DAY is now "2563.613 WORKERS PRESENT SPEED LIMIT"