Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut [1] Total Cut Unadjusted Volume	[2] Total Class 10 Unadjusted Volume	[3] Topsoil Cut Volume	[4] Template Pavement Removal Volume	[5] Manual Calculated Cut Adjustments (+/- Cut)	[6] [2]+[5] Total Cut Adjusted	Fill [7] Total Fill Unadjusted Volume	[8] Topsoil Stripping Undercut (+ Fill)	[9] Existing Pavement Undercut (+ Fill)	[10] Manual Calculated Fill Adjustments (+/- Fill)	[11] [7]+[8]+[9]+[10] Total Fill Adjusted	[12] [11] X 1.3 Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	[13] [6]-[12] Total Cut Adjusted Minus Fill w/Shrink
ML020	335,796	218,253	117,543	2,307	3,511	221,764	314,714	60,236	1,191	3,133	379,274	493,056.2	-271,292.2
CoRdM25_N	1,321	1,321	0	258	0	1,321	3,628	0	3	0	3,631	4,720.3	-3,399.3
Harvest	1,361	1,361	0	0	73	1,434	22	0	0	57	79	102.7	3,399.3
Indian_North	577	577	0	0	1	578	145	0	0	91	236	306.8	1,331.3
Jasper_North	1,140	1,140	0	0	0	1,140	15	0	0	0	15	19.5	1,120.5
Marshal	1,074	1,074	0	0	0	1,074	750	0	0	93	843	1,095.9	-21.9
Project Totals:	341,269	223,726	117,543	2,565	3,585	227,311	319,274	60,236	1,194	3,374	384,078	499,302	-271,991

Negative number indicates embankment need

Excavation, Class 10, Roadway & Borrow
227,311
[6]

Compaction With Moisture/Density Control Bid Item (If applicable)

Embankment in Place, Contractor Furnished
271,991 / 1.3 = 209,224
[13] / 1.3

Place topsoil bid items here

Embankment In Place Bid Item = Total Cut Adjusted minus Fill w/ Shrink Factor / shrink factor

Note: Shrink is not included with Embankment in Place bid items

Check:
All of the cut material on the project must be covered by the Class 10 and Topsoil bid items.

341,269 Total Unadjusted Volume + 3,585 Manual Calculated Cut Adjustments = 344,854

227,311 Total Cut Adjusted + 117,543 Topsoil = 344,854

Simple Embankment In Place Example

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut [1] Total Cut Unadjusted Volume	[2] Total Class 10 Unadjusted Volume	[3] Topsoil Cut Volume	[4] Template Pavement Removal Volume	[5] Manual Calculated Cut Adjustments (+/- Cut)	[6] [2]+[5] Total Cut Adjusted	Fill [7] Total Fill Unadjusted Volume	[8] Topsoil Stripping Undercut (+ Fill)	[9] Existing Pavement Undercut (+ Fill)	[10] Manual Calculated Fill Adjustments (+/- Fill)	[11] [7]+[8]+[9]+[10] Total Fill Adjusted	[12] [11] X 1.3 Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	[13] [6]-[12] Total Cut Adjusted Minus Fill w/Shrink Factor	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
ML020_5	38,232	28,927	9,305	3,547	17	28,944	10,315	5,127	1,134	335	16,911	21,894.3	6,959.7									
SUR020	240,434	216,397	24,037	5,114	0	216,397	7,257	6,012	683	0	13,952	18,137.6	198,259.4									
Channel	8,502	8,502	0	0	0	8,502	12	0	0	0	12	15.6	8,486.4									
Landmark_N	199	199	0	0	3	202	432	0	0	438	870	1,131.0	-929.0									
Landmark_S	409	409	0	0	335	744	0	0	0	40	40	52.0	692.0									
Project Totals:	287,776	254,434	33,342	8,661	355	254,789	18,016	11,139	1,817	813	31,785	41,321	213,469									

Excavation, Class 10, Roadway & Borrow
41,321
[12]

Excavation, Class 10, Waste
254,789 - 41,321 = 213,468
[6] - [12]

Place topsoil bid items here

Check:
These items added together should be equal to the Total Adjusted Cut total. There may be a 1 or 2 CY discrepancy due to rounding in the Total Fill Adjusted w/Shrink Factor column.

Check:
All of the cut on the project is covered by the Class 10 and Topsoil bid items.

287,776 Total Unadjusted Volume + 355 Manual Calculated Cut Adjustments = 288,131

254,789 Total Cut Adjusted + 33,342 Topsoil = 288,131

Compaction With Moisture/Density Control Bid Item
(If applicable)

When a project is in waste the Total Adjusted Fill w/Shrink Factor will be the quantity for Excavation, Class 10 Roadway & Borrow because that is how much cut material will be necessary for construction of the fills on the project. If the Total Cut Adjusted quantity is used the waste material will effectively have been bid twice. Once with the Excavation, Class 10, Roadway & Borrow item and the second time with the Excavation, Class 10, Waste item

Positive number indicates waste

Simple Waste Example

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut [1] Total Cut Unadjusted Volume	[2] Total Class 10 Unadjusted Volume	[3] Topsoil Cut Volume	[4] Template Pavement Removal Volume	[5] Template Rock Volume	[6] Manual Calculated Cut Adjustments (+/- Cut)	[7] [2]+[5]+[6] Total Cut Adjusted	Fill [8] Total Fill Unadjusted Volume	[9] Topsoil Stripping Undercut (+ Fill)	[10] Existing Pavement Undercut (+ Fill)	[11] Manual Calculated Fill Adjustments (+/- Fill)	[12] [8]+[9]+[10]+[11] Total Fill Adjusted	[13] [12] X 1.3 Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	[14] [7]-[13] Total Cut Adjusted Minus Fill w/Shrink
ML020	344,548	218,253	117,543	2,307	8,752	3,511	230,516	314,714	60,236	1,191	3,133	379,274	493,056.2	-262,540.2
CoRdM25_N	1,321	1,321	0	258	0	0	1,321	3,628	0	3	0	3,631	4,720.3	-3,399.3
Harvest	1,361	1,361	0	0	0	73	1,434	22	0	0	57	79	102.7	3,399.3
Indian_North	577	577	0	0	0	1	578	145	0	0	91	236	306.8	1,331.3
Jasper_North	1,140	1,140	0	0	0	0	1,140	15	0	0	0	15	19.5	1,120.5
Marshal	1,074	1,074	0	0	0	0	1,074	750	0	0	93	843	1,095.9	-21.9
Project Totals:	350,021	223,726	117,543	2,565	8,752	3,585	236,063	319,274	60,236	1,194	3,374	384,078	499,302	-263,239

Negative number indicates embankment need

Excavation, Class 10, Roadway & Borrow
236,063 - 8,752 = 227,311
[7] - [5]

The volume of Template Rock Cut must be subtracted from the Total Cut Adjusted Volume to get the volume of Excavation, Class 10

Excavation, Class 12, Roadway & Borrow
8,752
[5]

Embankment in Place, Contractor Furnished
263,239 / 1.3 = 202,492
[14] / 1.3

Place topsoil bid items here

Compaction With Moisture/Density Control Bid Item (If applicable)

Bid quantity = Total Fill Adjusted - (Template Rock Volume X Swell Factor)

Presplitting of Rock Cut bid item may be necessary in addition to Excavation, Class 12. Contact the soils section for assistance.

Embankment In Place Bid Item = Total Cut Adjusted minus Fill w/ Shrink Factor / shrink factor

Note: Shrink is not included with Embankment in Place bid items

Check:
These items added together should be equal to the Total Adjusted Cut total.

Check:
All of the cut material on the project must be covered by Class 10, Class 12, and Topsoil bid items.

350,021 Total Unadjusted Volume + 3,585 Manual Calculated Cut Adjustments = 353,606

236,063 Total Cut Adjusted + 117,543 Topsoil = 353,606

Note:
When rock is encountered in a cut section it is assumed that the material excavated will be used to construct the embankment on the project.

Rock Cut Example

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

									Fill								Checks (EW-102)					
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
								[2]+[4]+[6]+[7]						[9]+[10]+[11]+[12]+[13]	[14] X1.3	[8]-[15]						
Station	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Pavement Removal Volume	Template Select Loam Volume	Manual Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Plowing & Shaping Undercut (+ Fill)	Topsoil Stripping Undercut (+ Fill)	Existing Pavement Undercut (+ Fill)	Manual Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' And Above 20' w/Shrink Fact.	Approx. Fill Volume Below 3' w/Shrink Factor				
ML020_1	377,367	218,253	117,543	6,915	2,307	34,656	3,511	263,335	314,714	0	60,236	1,191	3,133	379,274	493,056.2	-229,721.2	103,365	312,289				
CoRdM25_N	1,321	1,321	0	0	258	0	0	1,321	3,628	0	0	3	0	3,631	4,720.3	-3,399.3	0	2,068				
Harvest	1,361	1,361	0	0	0	0	73								102.7	1,331.3	0	19				
Indian_North	577	577	0	0	0	0	1								306.8	271.2	0	103				
Jasper_North	1,140	1,140	0	0	0	0	0	1,140	15	0	0	0	0	15	19.5	1,120.5	0	2				
Marshal	1,074	1,074	0	0	0	0	0	1,074	750	0	0	0	93	843	1,095.9	-21.9	0	375				
Project Totals:	382,840	223,726	117,543	6,915	2,565	34,656	3,585	268,882	319,274	0	60,236	1,194	3,374	384,078	499,302	-230,420	103,365	314,856				

Verify that there is sufficient room for Unsuitable Soil placement

Excavation, Class 10, Roadway & Borrow
268,882
[8]

Embankment In Place, Contractor Furnished
230,420 / 1.3 = 177,246
[16] / 1.3

Compaction With Moisture/Density Control Bid Item
(If applicable)

Type "C" Placement
(Does not apply in this case)

Type "B" Placement

Negative number indicates embankment need

Place topsoil bid items here

Embankment In Place Bid Item = Total Cut Adjusted minus Fill w/ Shrink Factor / shrink factor

Note: Shrink is not included with Embankment in Place bid items

Check:
All of the cut material on the project must be covered by the Class 10 and Topsoil bid items.

382,840 Total Unadjusted Volume + 3,585 Manual Calculated Cut Adjustments = 386,425

268,882 Total Cut Adjusted + 117,543 Topsoil = 386,425

Complex Embankment In Place Example

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	[1] Total Cut Unadjusted Volume	[2] Total Class 10 Unadjusted Volume	[3] Topsoil Cut Volume	[4] Template Unsuitable Type B Volume	[5] Template Pavement Removal Volume	[6] Template Select Loam Volume	[7] Manual Calculated Cut Adjustments (+/- Cut)	[8] Total Cut Adjusted	[9] Total Fill Unadjusted Volume	[10] Plowing & Shaping Undercut (+ Fill)	[11] Topsoil Stripping Undercut (+ Fill)	[12] Existing Pavement Undercut (+ Fill)	[13] Manual Calculated Fill Adjustments (+/- Fill)	[14] Total Fill Adjusted	[15] Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	[16] Total Cut Adjusted Minus Fill w/Shrink	[17] Approx. Fill Vol. Below 5' And Above 20' w/Shrink Fact.	[18] Approx. Fill Volume Below 3' w/Shrink Factor	[19]	[20]	[21]	[22]
								[2]+[4]+[6]+[7]						[9]+[10]+[11]+[12]+[13]	[14] X1.3	[8]-[15]	Checks (EW-102)					
									Fill													
ML020_3	280,281	194,197	47,919	38,163	31,343	2	2,054	234,416	57,070	14,911	21,864	1,097	3,507	98,269	127,749.7	106,666.3	49,852	56,738				
CoRdM25_South	2,076	2,076	0	0	0	0	36	2,112	4	0	0	0	111	115	149.5	1,962.5	0	2				
Indian_South	920	920	0	0	0	0	0								213.2	706.8	0	233				
Ivory	276	276	0	0	0	0	4								388.7	-108.7	0	311				
Jasper_S	473	473	0	0	0	0	0	473	159	0	0	0	0	159	206.7	266.3	0	215				
Noble	190	190	0	0	0	0	0	190	1	0	0	0	130	131	170.3	19.7	0	0				
Project Totals:	284,216	198,132	47,919	38,163	31,343	2	2,094	238,391	57,673	14,911	21,864	1,097	3,772	99,137	128,879	109,513	49,852	57,499				

Verify that there is sufficient room for Unsuitable Soil placement

Excavation, Class 10, Roadway & Borrow
128,879
[15]

Excavation, Class 10, Waste
238,391 - 128,879 = 109,513
[8] - [15]

Place topsoil bid items here

Compaction With Moisture/Density Control Bid Item
(If applicable)

Type "C" Placement
(Does not apply in this case)

Type "B" Placement

Positive number indicates waste

When a project is in waste the Total Adjusted Fill w/Shrink Factor will be the quantity for Excavation, Class 10 Roadway & Borrow because that is how much cut material will be necessary for construction of the fills on the project. If the Total Cut Adjusted quantity is used the waste material will effectively have been bid twice. Once with the Excavation, Class 10, Roadway & Borrow item and the second time with the Excavation, Class 10, Waste item.

Check:
These items added together should be equal to the Total Cut Adjusted column. There may be 1 or 2 CY discrepancy due to rounding of the Total Fill Adjusted w/Shrink Factor column.

All of the cut material on the project must be covered by the Class 10 and Topsoil bid items.

284,216 Total Unadjusted Volume + 2,094 Manual Calculated Cut Adjustments = 286,312

238,391 Total Cut Adjusted + 47,919 Topsoil = 286,310

Complex Waste Example

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

									Fill								Checks (EW-102)					
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	[19]	[20]	[21]	[22]
								[2]+[4]+[6]+[7]						[9]+[10]+[11]+[12]+[13]	[14] X1.3	[8]-[15]						
Station	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Unsuitable Type B Volume	Template Pavement Removal Volume	Template Select Loam Volume	Manual Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Plowing & Shaping Undercut (+ Fill)	Topsoil Stripping Undercut (+ Fill)	Existing Pavement Undercut (+ Fill)	Manual Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/ Shrink	Approx. Fill Vol. Below 5' And Above 20' w/Shrink Fact.	Approx. Fill Volume Below 3' w/Shrink Factor				
ML020_1	335,796	218,253	117,543	6,915	2,307	34,656	3,511	263,335	314,714	0	60,236	1,191	3,133	379,274	493,056.2	-229,721.2	2,518	4,484				
CoRdM25_N	1,321	1,321	0	0	258	0	0								4,720.3	-3,399.3	0	2,068				
Harvest	1,361	1,361	0	0	0	0	73								102.7	1,331.3	0	19				
Indian_North	577	577	0	0	0	0	1	578	145	0	0	0	91	236	306.8	271.2	0	103				
Jasper_North	1,140	1,140	0	0	0	0	0	1,140	15	0	0	0	0	15	19.5	1,120.5	0	2				
Marshal	1,074	1,074	0	0	0	0	0	1,074	750	0	0	0	93	843	1,095.9	-21.9	0	375				
Project Totals:	382,840	223,726	117,543	6,915	2,565	34,656	3,585	268,882	319,274	0	60,236	1,194	3,374	384,078	499,302	-230,420	2,518	7,051				

Verify that there is sufficient room for Unsuitable Soil placement *

CUT

Unsuitable B 6,915 = 6,915
Class 10 268,882 - 6,915 = 261,967
[8]-[4]
Total: 268,882 ← Check

Fill

Unsuitable B 2,518 = 2,518
Class 10 499,302 - 2,518 = 496,784
[15] - [17]
Total: 499,302 ← Check

Unsuitable B 6,915 - 2,518 = 4,397 **Excavation, Class 10, Waste**
[4] - [17]

268,882 - 4,397 = 264,485 **Excavation, Class 10, Roadway & Borrow**
[8] - ([4] - [17])

Class 10 261,967 - 496,784 = -234,817 Borrow
[Class 10 Cut] - [Class 10 Fill]

234,817 / 1.3 = 108,628 **Embankment In Place, Contractor Furnished**
[Borrow] / 1.3

Type "C" Placement (Does not apply in this case)

Type "B" Placement

When sufficient room is not available for Unsuitable Soil placement disregard this number

Compaction With Moisture/Density Control Bid Item (If applicable)

Check:
All of the cut material on the project must be covered by the Class 10 and Topsoil bid items.

382,840 Total Unadjusted Volume + 3,585 Manual Calculated Cut Adjustments = 386,425

268,882 Total Cut Adjusted + 117,543 Topsoil = 386,425

Excavation, Class 10, Waste Bid Item = Unsuitable B Cut - Unsuitable B Placement

Excavation, Class 10, Roadway & Borrow Bid Item = Total Cut Adjusted - Excavation, Class 10, Waste Bid Item

Embankment In Place Bid Item = (Class 10 Cut - Class 10 Fill needed) / shrink factor

Note: Shrink is not included with Embankment in Place bid items

* In this example there is more Unsuitable B Soil available than there is space available for placement. This requires the Cuts and Fills for the Class 10 and Unsuitable Soils to be handled independently of each other.

Complex Unsuitable Example

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Cut						Fill						
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
						[2]+[5]					[7]+[8]+[9]+[10]	[11] X 1.3	[6]-[12]
	Total Cut Unadjusted Volume	Total Class 10 Unadjusted Volume	Topsoil Cut Volume	Template Pavement Removal Volume	Manual Calculated Cut Adjustments (+/- Cut)	Total Cut Adjusted	Total Fill Unadjusted Volume	Topsoil Stripping Undercut (+ Fill)	Existing Pavement Undercut (+ Fill)	Manual Calculated Fill Adjustments (+/- Fill)	Total Fill Adjusted	Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	Total Cut Adjusted Minus Fill w/Shrink
Summary:													
Stage 1													
ML020_1	335,796	218,253	117,543	2,307	3,511	221,764	314,714	60,236	1,191	3,133	379,274	493,056.2	-271,292.2
CoRdM25_N	1,321	1,321	0	258	0	1,321	3,628	0	3	0	3,631	4,720.3	-3,399.3
Harvest	1,361	1,361	0	0	73	1,434	22	0	0	57	79	102.7	1,331.3
Indian_North	577	577	0	0	1	578	145	0	0	91	236	306.8	271.2
Jasper_North	1,140	1,140	0	0	0	1,140	15	0	0	0	15	19.5	1,120.5
Marshal	1,074	1,074	0	0	0	1,074	750	0	0	93	843	1,095.9	-21.9
Stage 1 Subtotals:	341,269	223,726	117,543	2,565	3,585	227,311	319,274	60,236	1,194	3,374	384,078	499,302	-271,991
Stage 2													
ML020_3	242,116	194,197	47,919	31,343	2,054	196,253	57,070	21,684	1,097	3,507	83,358	108,365.4	87,885.6
CoRdM25_South	2,076	2,076	0	0	36	2,112	4	0	0	111	115	149.5	1,962.5
Indian_South	920	920	0	0	0	920	164	0	0	0	164	213.2	706.8
Ivory	276	276	0	0	4	280	275	0	0	24	299	388.7	-108.7
Jasper_S	473	473	0	0	0	473	159	0	0	0	159	206.7	266.3
Noble	190	190	0	0	0	190	1	0	0	130	131	170.3	19.7
Stage 2 Subtotals:	246,051	198,132	47,919	31,343	2,094	200,228	57,673	21,684	1,097	3,772	84,226	109,494	90,732
Project Totals:	587,320	421,858	165,462	33,908	5,679	427,537	376,947	81,920	2,291	7,146	468,304	608,796	-181,259

Excavation, Class 10, Roadway & Borrow

Stage 1:	227,311	[6] or [12]
Stage 2:	109,494	[6] or [12]
Total:	336,805	

Excavation, Class 10, Waste

Stage 1:	0	[13]
Stage 2:	90,732	[13]
Total:	90,732	

Embankment In Place, Contractor Furnished

Stage 1:	271,991 / 1.3 = 209,224	[13] / 1.3
Stage 2:	0 / 1.3 = 0	[13] / 1.3
Total:	209,224	

Negative number indicates stage in embankment need

Positive number indicates stage in waste

Disregard this number for quantity purposes

Compaction With Moisture/Density Control Bid Item (If applicable)

When a stage is in waste the Total Adjusted Fill w/Shrink Factor will be the quantity for Excavation, Class 10 Roadway & Borrow because that is how much cut material will be necessary for construction of the fills on the project. If the Total Cut Adjusted quantity is used the waste material will effectively have been bid twice. Once with the Excavation, Class 10, Roadway & Borrow item and the second time with the Excavation, Class 10, Waste item

Embankment In Place Bid Item = Total Cut Adjusted Minus Fill w/ Shrink Factor / shrink factor

Note: Shrink is not included with Embankment in Place bid items

Check:
All of the cut material on the project must be covered by the Class 10 and Topsoil bid items.

587,320 Total Unadjusted Volume + 5,679 Manual Calculated Cut Adjustments = 592,999

427,537 Total Cut Adjusted + 165,462 Topsoil = 592,999

Note: Colored rows are for illustrative purposes in the example and are not required in the final T Sheets.

Simple Staged Example

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	[1] Total Cut Unadjusted Volume	[2] Total Class 10 Unadjusted Volume	[3] Topsoil Cut Volume	[4] Template Unsuitable Type B Volume	[5] Template Pavement Removal Volume	[6] Template Select Loam Volume	[7] Manual Calculated Cut Adjustments (+/- Cut)	[8] [2]+[4]+[6]+[7] Total Cut Adjusted	[9] Fill: Total Fill Unadjusted Volume	[10] Fill: Plowing & Shaping Undercut (+ Fill)	[11] Fill: Topsoil Stripping Undercut (+ Fill)	[12] Fill: Non-Template Existing Pavement Removal (+ Fill)	[13] Fill: Manual Calculated Fill Adjustments (+/- Fill)	[14] Fill: [9]+[10]+[11]+[12]+[13] Total Fill Adjusted	[15] Fill: [14] X1.3 Total Fill Adjusted w/ Weighted Average 1.3 Shrink Factor	[16] Fill: [8]-[15] Total Cut Adjusted Minus Fill w/Shrink	[17] Checks (EW-102): Approx. Fill Vol. Below 5' And Above 20' w/Shrink Fact.	[18] Checks (EW-102): Approx. Fill Volume Below 3' w/Shrink Factor	[19]	[20]	[21]	[22]
Summary:																						
Stage 1																						
ML020_1	377,367	218,253	117,543	6,915	2,307	34,656	3,511	263,335	314,714	0	60,236	1,191	3,133	379,274	493,056.2	-229,721.2	103,365	312,289				
CoRdM25_N	1,321	1,321	0	0	258	0	0	1,321	3,628	0	0	3	0	3,631	4,720.3	-3,399.3	0	2,068				
Harvest	1,361	1,361	0	0	0	0	73	1,434	22	0	0	0	57	79	102.7	1,331.3	0	19				
Indian_North	577	577	0	0	0	0	1	578	145	0	0	0	91	236	306.8	271.2	0	103				
Jasper_North	1,140	1,140	0	0	0	0	0	1,140	15	0	0	0	0	15	19.5	1,120.5	0	2				
Marshal	1,074	1,074	0	0	0	0	0	1,074	750	0	0	0	93	843	1,095.9	-21.9	0	375				
Stage 1 Subtotals:	382,840	223,726	117,543	6,915	2,565	34,656	3,585	268,882	319,274	0	60,236	1,194	3,374	384,078	499,302	-230,420	103,365	314,856				
Stage 2																						
ML020_2	3,329	3,329	0	0	0	0	0	3,329	4,275	0	0	0	0	4,275	5,557.5	-2,228.5	0	4,235				
Stage 2 Subtotals:	3,329	3,329	0	0	0	0	0	3,329	4,275	0	0	0	0	4,275	5,558	-2,229	0	4,235				
Stage 3																						
ML020_3	242,118	194,197	47,919	0	31,343	2	2,054	196,253	57,070	14,911	21,864	1,097	3,507	98,269	127,749.7	68,503.3	49,582	56,738				
CoRdM25_South	2,076	2,076	0	0	0	0	36	2,112	4	0	0	0	111	115	149.5	1,962.5	0	2				
Indian_South	920	920	0	0	0	0	0	920	164	0	0	0	0	164	213.2	706.8	0	233				
Ivory	276	276	0	0	0	0	4	280	275	0	0	0	24	299	388.7	-108.7	0	311				
Jasper_S	473	473	0	0	0	0	0	473	159	0	0	0	0	159	206.7	266.3	0	215				
Noble	190	190	0	0	0	0	0	190	1	0	0	0	130	131	170.3	19.7	0	0				
Stage 3 Subtotals:	246,053	198,132	47,919	0	31,343	2	2,094	200,228	57,673	14,911	21,864	1,097	3,772	97,440	56,577	71,350	49,852	57,499				
Project Totals:	632,222	425,187	165,462	6,915	33,908	34,658	5,679	472,439	381,222	14,911	81,920	2,291	7,146	487,490	633,739	-161,299	153,217	376,590				

Verify that there is sufficient room available for Unsuitable Soil Placement for each stage

Excavation, Class 10, Roadway & Borrow

Stage 1:	268,882	[8] or [15]
Stage 2:	3,329	[8] or [15]
Stage 3:	56,577	[8] or [15]
Total:	328,788	

Excavation, Class 10, Waste

Stage 1:	0	[16]
Stage 2:	0	[16]
Stage 3:	71,350	[16]
Total:	71,350	

Embankment In Place, Contractor Furnished

Stage 1:	230,420 / 1.3 = 177,246	[16] / 1.3
Stage 2:	2,229 / 1.3 = 1,715	[16] / 1.3
Stage 3:	0 / 1.3 = 0	[16] / 1.3
Total:	178,691	

Negative numbers indicates stage in embankment need

Positive number indicates stage in waste

Type "C" Placement (Does not apply in this case)

Type "B" Placement

Disregard this number for quantity purposes

Compaction With Moisture/Density Control Bid Item (If applicable)

When a stage is in waste the Total Adjusted Fill w/Shrink Factor will be the quantity for Excavation, Class 10, Roadway and Borrow because that is how much cut material will be necessary for construction of the fills on the project. If the Total Cut Adjusted quantity is used the waste material will effecitvely been bid twice. Once with the Excavation, Class 10, Roadway & Borrow item and the second time with the Excavation, Class 10, Waste item.

Embankment In Place Bid Item = Total Adjusted Cut Minus Fill w/ Shrink Factor / shrink factor

Note: Shrink is not included with Embankment in Place bid items

Check:
All of the cut material on the project must be covered by the Class 10 and Topsoil bid items.

632,222 Total Unadjusted Volume + 5,679 Manual Calculated Cut Adjustments = 637,901

472,439 Total Cut Adjusted + 165,462 Topsoil = 637,901

Note: Colored rows are for illustrative purposes in the example and are not required in the final T Sheets.

Complex Staged Example

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Topsoil [1] Topsoil Stripping Undercut Volume	Topsoil [2] Topsoil Placement Undercut Volume	Topsoil [3] Topsoil Placement With 1.4 Shrink Factor	Topsoil [4] Topsoil Stripping Minus Topsoil Placement W/Shrink
ML020_5	9,305	6,652	9,312.8	-7.8
SUR020	24,037	26,598	37,237.2	-13,200.2
Channel	0	312	436.8	-436.8
Landmark_N	0	230	322.0	-322.0
Landmark_S	0	163	228.2	-228.2
Project Totals:	33,342	33,955	47,537	-14,195

Topsoil, Strip, Salvage & Spread
33,342
[1]

Topsoil, Furnish and Spread
14,195 / 1.4 = 10,140
[4] / 1.4

Negative number indicates topsoil need

Topsoil, Furnish and Spread Bid Item =
Topsoil Cut Minus Topsoil Replacement
With Shrink / shrink factor

Topsoil Need Example

FILE NO.	ENGLISH	DESIGN TEAM Project Manager\Designer	County COUNTY	PROJECT NUMBER Project Number	SHEET NUMBER T.?

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Topsoil [1] Topsoil Stripping Undercut Volume	Topsoil [2] Topsoil Placement Undercut Volume	Topsoil [3] Topsoil Placement With 1.4 Shrink Factor	Topsoil [4] Topsoil Stripping Minus Topsoil Placement W/Shrink
ML020_1	117,543	40,804	57,125.6	60,417.4
CoRdM25_N	0	373	522.2	-522.2
Harvest	0	309	432.6	-432.6
Indian_North	0	234	327.6	-327.6
Jasper_North	0	273	382.2	-382.2
Marshal	0	396	554.4	-554.4
Project Totals:	117,543	42,389	59,345	58,198

Topsoil, Strip, Salvage & Spread
117,543
[1]

Positive number indicates excess topsoil

The total bid quantity will be all of the topsoil stripping on the project.

To determine the excess topsoil available, subtract the Total Placement With Shrink Factor from the Topsoil Stripping Undercut Volume. This excess topsoil can be used for earth shoulder construction or earth shoulder finishing. If the excess will be used in that manner, note the quantity available in the Estimate Reference Information for the topsoil bid item that is used.

If earth shoulder construction (earth shoulder finishing) is not used or the additional the quantity for earth shoulder construction (earth shoulder finishing) does not use all of the available topsoil then adjust the topsoil thickness to consume the excess material.

Excess Topsoil Example

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Topsoil [1] Topsoil Stripping Undercut Volume	Topsoil [2] Topsoil Placement Undercut Volume	Topsoil [3] Topsoil Placement With 1.4 Shrink Factor	Topsoil [4] Topsoil Stripping Minus Topsoil Placement W/Shrink
Summary:				
Stage 1				
ML020_1	48,693	40,804	57,125.6	-8,432.6
CoRdM25_N	0	373	522.2	-522.2
Harvest	0	309	432.6	-432.2
Indian_North	0	234	327.6	-327.6
Jasper_North	0	273	382.2	-382.2
Marshal	0	396	554.4	-554.4
Stage 1 Subtotals:	48,693	42,389	59,345	-10,652
Stage 2				
ML020_3	57,829	39,329	55,060.6	2,768.4
CoRdM25_South	0	313	438.2	-438.2
Indian_South	0	242	338.8	-338.8
Ivory	0	172	240.8	-240.8
Jasper_S	0	81	113.4	-113.4
Noble	0	84	117.6	-117.6
Stage 2 Subtotals:	57,829	40,221	56,310	1,520
Project Totals:	106,522	82,610	115,655	-9,132

Topsoil, Strip, Salvage & Spread

Stage 1:	48,693	[1] or [3]
Stage 2:	57,829	[1] or [3]
Total:	106,522	

Topsoil, Furnish and Spread

Stage 1:	10,652 / 1.4 = 7,609	[4] / 1.3
Stage 2:	0	[4] / 1.3
Total:	7,609	

Negative number indicates topsoil need

Positive number indicates topsoil waste

Disregard this number for quantity purposes

This excess topsoil can be used for earth shoulder construction or earth shoulder finishing. If the excess will be used in that manner, note the quantity available in the Estimate Reference Information for the topsoil bid item that is used.

If earth shoulder construction (earth shoulder finishing) is not used or the additional the quantity for earth shoulder construction (earth shoulder finishing) does not use all of the available topsoil then adjust the topsoil thickness to consume the excess material.

Topsoil, Furnish and Spread Bid Item = Topsoil Cut minus Topsoil Replacement With Shrink / shrink factor

Note: Colored rows are for illustrative purposes in the example and are not required in the final T Sheets.

Staged Topsoil Example

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Topsoil [1] Topsoil Stripping Undercut Volume	Topsoil [2] Topsoil Placement Undercut Volume	Topsoil [3] Topsoil Placement With 1.4 Shrink Factor	Topsoil [4] Topsoil Stripping Minus Topsoil Placement W/Shrink
ML020_1	117,543	40,804	57,125.6	60,417.4
CoRdM25_N	0	373	522.2	-522.2
Harvest	0	309	432.6	-432.6
Indian_North	0	234	327.6	-327.6
Jasper_North	0	273	382.2	-382.2
Marshal	0	396	554.4	-554.4
Project Totals:	117,543	42,389	59,345	58,198

[5] [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] [17] [18] [19] [20] [21] [22]

Topsoil, Strip, Salvage & Spread
59,345
[3]

Topsoil, Strip and Stockpile
58,198
[4]

Positive number indicates excess topsoil

In this example there is excess topsoil that is not needed for the project. This material will be stockpiled for use on a future project.

Topsoil Stockpile For Future Project Example

Refer to Standard Road Plans EW-101 and EW-102.

TABULATION OF TEMPLATE QUANTITIES AND ADJUSTMENTS

107-28
04-21-15

Station	Topsoil [1] Topsoil Stripping Undercut Volume	Topsoil [2] Topsoil Placement Undercut Volume	Topsoil [3] Topsoil Placement With 1.4 Shrink Factor	Topsoil [4] Topsoil Stripping Minus Topsoil Placement W/Shrink
ML020_5	9,305	6,652	9,312.8	-7.8
SUR020	24,037	26,598	37,237.2	-13,200.2
Channel	0	312	436.8	-436.8
Landmark_N	0	230	322.0	-322.0
Landmark_S	0	163	228.2	-228.2
Project Totals:	33,342	33,955	47,537	-14,195

Topsoil, Strip, Salvage & Spread

33,342
[1]

Topsoil, Spread

14,195
[4]

Negative number indicates topsoil need

Needed topsoil is cut from stockpile created on previous project

Topsoil From Stockpile Example

FILE NO.	ENGLISH	DESIGN TEAM Project Manager\Designer	County COUNTY	PROJECT NUMBER Project Number	SHEET NUMBER T.?