GRADING QUANTITIES SHEET

Computed By: T Snow
Checked By:
Route: SR 237

Sheet: 1 of 2
Project No.: 1116007
County: Montgomery

Ramp C & ramp widening for Stage 1 Traffic Control/Construction

Total Excav.	8024 CY	Unclass Embank.	3150 CY
Topsoil Excav.	2151 CY		
Unclass Excav.	5873.17 CY		

Factor(s): SHR. 15%

Balance Calculation: Unclass. Embank -(Unclass Excav./(1+SHR)
3150-(5873/1.15) = -1957.10 CY (WASTE)

Excess Excav. Material: 1957.10 CY

GRADING QUANTITIES SHEET

Computed By: T Snow
Checked By:
Route: SR 237

Sheet: 2 of 2
Project No.: 1116007
County: Montgomery

Tabulation of Earthwork Volumes

Alignment	Excavation (CY)		Embank (CY)
	Earth	Topsoil	
SR 237	766	1123	1851
Ramp A	138		
Ramp B	424		
Ramp C	4363	1028	1299
Ramp D	146		
Clearing & Grubbing	36		
Totals	**5873**	**2151**	**3150**

7-9-14 T. Snow
SR 237 Stage 1
Earthwork

```
 Input  File: ewkprj.inp
 Output File: SR 237 STAGE 1 EARTH.log
  1      1      1
  1      2      2
  1      3      3 Earthwork
  1      4      4
  1      5      5 tolerance = 0.010000
  1      6      6
  1      7      7 vertical search distance = 500.000000
  1      8      8
  1      9      9 xs dgn = H:\1116007\DGN\Traffic control working
files\Mainline XS Stage 1.dgn
  1     10     10
  1     11     11     Proposed Finish Grade
  1     12     12         soil type = EARTH
  1     13     13         roadway exc mult factor = 1.000000
  1     14     14         subsoil exc mult factor = 1.000000
  1     15     15         fill mult factor = 1.000000
  1     16     16             type = line
  1     17     17             lvname = DESIGN - TYPICAL - Finished Grade and
Subgrade
  1     18     18             lc = 0
  1     19     19             wt = 4
  1     20     20
  1     21     21     Existing Ground Line
  1     22     22         soil type = EARTH
  1     23     23         roadway exc mult factor = 1.000000
  1     24     24         subsoil exc mult factor = 1.000000
  1     25     25         fill mult factor = 1.000000
  1     26     26             type = line_string
  1     27     27             lvname = SURVEY - GROUND - Top of Ground
  1     28     28             lc = 3
  1     29     29             wt = 2
  1     30     30             co = 0
  1     31     31
  1     32     32     Existing Unsuitable Material
  1     33     33         soil type = TOPSOIL
  1     34     34         roadway exc mult factor = 1.000000
  1     35     35         subsoil exc mult factor = 1.000000
  1     36     36         fill mult factor = 1.000000
  1     37     37             type = line
  1     38     38             lvname = SURVEY - GROUND - Bottom of Topsoil
Layer
  1     39     39             lc = 2
  1     40     40             wt = 2
  1     41     41             co = 2
  1     42     42
  1     43     43     Excavation Limit
  1     44     44             type = line
  1     45     45             lvname = DESIGN - EARTHWORK - Excavation Limit
Lines
  1     46     46             lc = 0
  1     47     47             wt = 0
  1     48     48             co = 0
```

```
 1    49    49
 1    50    50      Skip Areas
 1    51    51         from 85+36.71 R 1 to 87+21.71 R 1
 1    52    52         from 91+78.42 R 1 to 93+62.42 R 1
 1    53    53
 1    54    54      Ignore Areas
 1    55    55         from 85+36.71 R 1 to 87+21.71 R 1
 1    56    56         from 91+78.42 R 1 to 93+62.42 R 1
 1    57    57
 1    58    58      Write Earthwork Shapes
 1    59    59          plot param
 1    60    60              lv = 347
 1    61    61              lvname = DESIGN - EARTHWORK - Shapes
 1    62    62              co = ByLevel
 1    63    63              wt = ByLevel
 1    64    64              lc = ByLevel
 1    65    65
 1    66    66      combine common exc + subgrade exc + subsoil exc
 1    67    67
 1    68    68      End Area Decimal Places = 0
 1    69    69
 1    70    70      write column base ascii file = SR237 EARTH.TXT
 1    71    71
 1    72    72      column 1 formula = abs( ["EARTH", Common Exc, End
Area]  )
 1    73    73      column 1 number of decimal place = 0
 1    74    74      column 1 total length = 10
 1    75    75
 1    76    76      column 2 formula = abs( ["EARTH", Fill, End Area]  )
 1    77    77      column 2 number of decimal place = 0
 1    78    78      column 2 total length = 10
 1    79    79
 1    80    80      column 3 formula = abs( ["TOPSOIL", Subsoil Exc, End
Area]  )
 1    81    81      column 3 number of decimal place = 0
 1    82    82      column 3 total length = 10
 1    83    83
 1    84    84
 1    85    85      Process Earthwork for Baseline = SR237
 1    86    86          job number = 098
 1    87    87
 1    88    88          beg sta = 70+00.00 R 1
 1    89    89          end sta = 124+50.00 R 1
 0     0    90 END_OF_FILE
COMPUTING EARTHWORKS FOR BASELINE = SR237
COMPUTING EARTHWORKS FOR JOB = 098
FORMING LIST OF XSCELLS
BEGINNING EARTHWORKS COMPUTATION
```

Station Ordinate	Material Name	End Areas (sq. ft.)	Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Mult Factor	Mass
SKIP STATION RANGE = 85+36.71 to 87+21.71						
SKIP STATION RANGE = 91+78.42 to 93+62.42						
97+00.00	EARTH					
	Excavation	0	0	0	1.00	
	Fill	80	0	0	1.00	0
	TOPSOIL					
	Excavation	21	0	0	1.00	
	Fill	0	0	0	1.00	0
	Mass ordinate for TOPSOIL = 0					
97+50.00	EARTH					
	Excavation	4	4	4	1.00	
	Fill	53	123	123	1.00	-119
	TOPSOIL					
	Excavation	21	39	39	1.00	
	Fill	0	0	0	1.00	-119
	Mass ordinate for TOPSOIL = 39					
98+00.00	EARTH					
	Excavation	8	11	11	1.00	
	Fill	45	91	91	1.00	-199
	TOPSOIL					
	Excavation	18	36	36	1.00	
	Fill	0	0	0	1.00	-199
	Mass ordinate for TOPSOIL = 75					
98+50.00	EARTH					
	Excavation	9	16	16	1.00	
	Fill	35	74	74	1.00	-257
	TOPSOIL					
	Excavation	15	31	31	1.00	
	Fill	0	0	0	1.00	-257
	Mass ordinate for TOPSOIL = 106					
120+50.00	EARTH					
	Excavation	3	489	489	1.00	
	Fill	2	1507	1507	1.00	-1275
	TOPSOIL					
	Excavation	6	855	855	1.00	
	Fill	0	0	0	1.00	-1275
	Mass ordinate for TOPSOIL = 961					
121+00.00	EARTH					
	Excavation	2	5	5	1.00	
	Fill	6	7	7	1.00	-1277
	TOPSOIL					
	Excavation	9	13	13	1.00	
	Fill	0	0	0	1.00	-1277

	Mass ordinate for TOPSOIL = 974					
121+50.00	EARTH					
	Excavation	1	3	3	1.00	
	Fill	13	18	18	1.00	-1292
	TOPSOIL					
	Excavation	13	20	20	1.00	
	Fill	0	0	0	1.00	-1292
	Mass ordinate for TOPSOIL = 994					
122+00.00	EARTH					
	Excavation	2	3	3	1.00	
	Fill	9	20	20	1.00	-1309
	TOPSOIL					
	Excavation	15	26	26	1.00	
	Fill	0	0	0	1.00	-1309
	Mass ordinate for TOPSOIL = 1020					
122+50.00	EARTH					
	Excavation	16	17	17	1.00	
	Fill	1	9	9	1.00	-1301
	TOPSOIL					
	Excavation	16	28	28	1.00	
	Fill	0	0	0	1.00	-1301
	Mass ordinate for TOPSOIL = 1048					
123+00.00	EARTH					
	Excavation	47	58	58	1.00	
	Fill	0	1	1	1.00	-1244
	TOPSOIL					
	Excavation	15	29	29	1.00	
	Fill	0	0	0	1.00	-1244
	Mass ordinate for TOPSOIL = 1077					
123+50.00	EARTH					
	Excavation	51	91	91	1.00	
	Fill	0	0	0	1.00	-1153
	TOPSOIL					
	Excavation	13	26	26	1.00	
	Fill	0	0	0	1.00	-1153
	Mass ordinate for TOPSOIL = 1103					
124+00.00	EARTH					
	Excavation	23	69	69	1.00	
	Fill	1	1	1	1.00	-1085
	TOPSOIL					
	Excavation	9	20	20	1.00	
	Fill	0	0	0	1.00	-1085
	Mass ordinate for TOPSOIL = 1123					

G R A N D S U M M A R Y T O T A L S

Material Name		Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Mult Factor
EARTH				
	Excavation	766	766	1.00
	Fill	1851	1851	1.00
TOPSOIL				
	Excavation	1123	1123	1.00
	Fill	0	0	1.00

		SPLIT SUMMARY		TOTALS
		XS Quant	XS Quant	Add/Sub Quant
Material Name		Unadjusted	Adjusted	Unadjusted
Mult		Volume	Volume	Volume
Factor		(cu. yd.)	(cu. yd.)	(cu. yd.)
EARTH				
	Excavation	766	766	0
1.00				0
	Fill	1851	1851	0
1.00				0
TOPSOIL				
	Excavation	1123	1123	0
1.00				0
	Fill	0	0	0
1.00				0

7-9-14 T. SNOW
RAMP C STAGE 1
EARTHWORK

```
 Input  File: ewkprj.inp
 Output File: RAMP C STAGE 1 EARTH.log
  1      1      1
  1      2      2
  1      3      3 Earthwork
  1      4      4
  1      5      5 tolerance = 0.010000
  1      6      6
  1      7      7 vertical search distance = 500.000000
  1      8      8
  1      9      9 xs dgn = H:\1116007\DGN\Traffic control working
files\RampC XS Stage 1.dgn
  1     10     10
  1     11     11     Proposed Finish Grade
  1     12     12         soil type = EARTH
  1     13     13         roadway exc mult factor = 1.000000
  1     14     14         subsoil exc mult factor = 1.000000
  1     15     15         fill mult factor = 1.000000
  1     16     16             type = line
  1     17     17             lvname = DESIGN - TYPICAL - Finished Grade and
Subgrade
  1     18     18             lc = 0
  1     19     19             wt = 4
  1     20     20
  1     21     21     Existing Ground Line
  1     22     22         soil type = EARTH
  1     23     23         roadway exc mult factor = 1.000000
  1     24     24         subsoil exc mult factor = 1.000000
  1     25     25         fill mult factor = 1.000000
  1     26     26             type = line_string
  1     27     27             lvname = SURVEY - GROUND - Top of Ground
  1     28     28             lc = 3
  1     29     29             wt = 2
  1     30     30             co = 0
  1     31     31
  1     32     32     Existing Unsuitable Material
  1     33     33         soil type = TOPSOIL
  1     34     34         roadway exc mult factor = 1.000000
  1     35     35         subsoil exc mult factor = 1.000000
  1     36     36         fill mult factor = 1.000000
  1     37     37             type = line
  1     38     38             lvname = SURVEY - GROUND - Bottom of Topsoil
Layer
  1     39     39             lc = 2
  1     40     40             wt = 2
  1     41     41             co = 2
  1     42     42
  1     43     43     Excavation Limit
  1     44     44             type = line
  1     45     45             lvname = DESIGN - EARTHWORK - Excavation Limit
Lines
  1     46     46             lc = 0
  1     47     47             wt = 0
  1     48     48             co = 0
```

```
 1     49     49
 1     50     50      Write Earthwork Shapes
 1     51     51          plot param
 1     52     52              lv = 347
 1     53     53              lvname = DESIGN - EARTHWORK - Shapes
 1     54     54              co = ByLevel
 1     55     55              wt = ByLevel
 1     56     56              lc = ByLevel
 1     57     57
 1     58     58      combine common exc + subgrade exc + subsoil exc
 1     59     59
 1     60     60      End Area Decimal Places = 0
 1     61     61
 1     62     62      write column base ascii file =  RAMPC-1 EARTH.TXT
 1     63     63
 1     64     64      column 1 formula = abs( ["EARTH", Common Exc, End
Area]  )
 1     65     65      column 1 number of decimal place = 0
 1     66     66      column 1 total length = 10
 1     67     67
 1     68     68      column 2 formula = abs( ["EARTH", Fill, End Area]  )
 1     69     69      column 2 number of decimal place = 0
 1     70     70      column 2 total length = 10
 1     71     71
 1     72     72      column 3 formula = abs( ["TOPSOIL", Subsoil Exc, End
Area]  )
 1     73     73      column 3 number of decimal place = 0
 1     74     74      column 3 total length = 10
 1     75     75
 1     76     76
 1     77     77      Process Earthwork for Baseline = RAMPC
 1     78     78          job number = 098
 1     79     79
 1     80     80          beg sta = 40+40.00 R 1
 1     81     81          end sta = 49+50.00 R 1
 0      0     82 END_OF_FILE
COMPUTING EARTHWORKS FOR BASELINE = RAMPC
COMPUTING EARTHWORKS FOR JOB = 098
FORMING LIST OF XSCELLS
BEGINNING EARTHWORKS COMPUTATION
```

Station Ordinate	Material Name	End Areas (sq. ft.)	Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Mult Factor	Mass
40+40.00	EARTH					
	Excavation	14	0	0	1.00	
	Fill	8	0	0	1.00	0
	TOPSOIL					
	Excavation	14	0	0	1.00	
	Fill	0	0	0	1.00	0
	Mass ordinate for TOPSOIL = 0					
40+50.00	EARTH					
	Excavation	77	17	17	1.00	
	Fill	14	4	4	1.00	13
	TOPSOIL					
	Excavation	36	9	9	1.00	
	Fill	0	0	0	1.00	13
	Mass ordinate for TOPSOIL = 9					
41+50.00	EARTH					
	Excavation	184	483	483	1.00	
	Fill	19	61	61	1.00	435
	TOPSOIL					
	Excavation	36	133	133	1.00	
	Fill	0	0	0	1.00	435
	Mass ordinate for TOPSOIL = 142					
42+00.00	EARTH					
	Excavation	226	380	380	1.00	
	Fill	19	35	35	1.00	780
	TOPSOIL					
	Excavation	34	65	65	1.00	
	Fill	0	0	0	1.00	780
	Mass ordinate for TOPSOIL = 207					
42+50.00	EARTH					
	Excavation	273	462	462	1.00	
	Fill	17	33	33	1.00	1209
	TOPSOIL					
	Excavation	35	64	64	1.00	
	Fill	0	0	0	1.00	1209
	Mass ordinate for TOPSOIL = 271					
43+00.00	EARTH					
	Excavation	280	512	512	1.00	
	Fill	15	30	30	1.00	1691
	TOPSOIL					
	Excavation	37	67	67	1.00	
	Fill	0	0	0	1.00	1691
	Mass ordinate for TOPSOIL = 338					

43+50.00	EARTH					
	Excavation	286	524	524	1.00	
	Fill	17	30	30	1.00	2185
	TOPSOIL					
	Excavation	38	69	69	1.00	
	Fill	0	0	0	1.00	2185
	Mass ordinate for TOPSOIL = 407					
44+00.00	EARTH					
	Excavation	420	654	654	1.00	
	Fill	17	31	31	1.00	2808
	TOPSOIL					
	Excavation	46	78	78	1.00	
	Fill	0	0	0	1.00	2808
	Mass ordinate for TOPSOIL = 485					
44+50.00	EARTH					
	Excavation	326	691	691	1.00	
	Fill	20	34	34	1.00	3465
	TOPSOIL					
	Excavation	43	83	83	1.00	
	Fill	0	0	0	1.00	3465
	Mass ordinate for TOPSOIL = 568					
45+00.00	EARTH					
	Excavation	128	420	420	1.00	
	Fill	24	41	41	1.00	3844
	TOPSOIL					
	Excavation	32	70	70	1.00	
	Fill	0	0	0	1.00	3844
	Mass ordinate for TOPSOIL = 638					
45+50.00	EARTH					
	Excavation	25	142	142	1.00	
	Fill	30	50	50	1.00	3936
	TOPSOIL					
	Excavation	23	51	51	1.00	
	Fill	0	0	0	1.00	3936
	Mass ordinate for TOPSOIL = 689					
46+00.00	EARTH					
	Excavation	2	25	25	1.00	
	Fill	61	84	84	1.00	3877
	TOPSOIL					
	Excavation	21	41	41	1.00	
	Fill	0	0	0	1.00	3877
	Mass ordinate for TOPSOIL = 730					
46+50.00	EARTH					
	Excavation	3	5	5	1.00	
	Fill	55	107	107	1.00	3775
	TOPSOIL					
	Excavation	21	38	38	1.00	
	Fill	0	0	0	1.00	3775

	Mass ordinate for TOPSOIL = 768					
47+00.00	EARTH					
	Excavation	3	6	6	1.00	
	Fill	84	129	129	1.00	3652
	TOPSOIL					
	Excavation	27	44	44	1.00	
	Fill	0	0	0	1.00	3652
	Mass ordinate for TOPSOIL = 812					
47+50.00	EARTH					
	Excavation	3	6	6	1.00	
	Fill	89	160	160	1.00	3498
	TOPSOIL					
	Excavation	28	51	51	1.00	
	Fill	0	0	0	1.00	3498
	Mass ordinate for TOPSOIL = 863					
48+00.00	EARTH					
	Excavation	3	6	6	1.00	
	Fill	100	175	175	1.00	3329
	TOPSOIL					
	Excavation	27	51	51	1.00	
	Fill	0	0	0	1.00	3329
	Mass ordinate for TOPSOIL = 914					
48+50.00	EARTH					
	Excavation	4	6	6	1.00	
	Fill	66	154	154	1.00	3181
	TOPSOIL					
	Excavation	22	45	45	1.00	
	Fill	0	0	0	1.00	3181
	Mass ordinate for TOPSOIL = 959					
49+00.00	EARTH					
	Excavation	7	10	10	1.00	
	Fill	39	97	97	1.00	3094
	TOPSOIL					
	Excavation	18	37	37	1.00	
	Fill	0	0	0	1.00	3094
	Mass ordinate for TOPSOIL = 996					
49+50.00	EARTH					
	Excavation	8	14	14	1.00	
	Fill	8	44	44	1.00	3064
	TOPSOIL					
	Excavation	16	32	32	1.00	
	Fill	0	0	0	1.00	3064
	Mass ordinate for TOPSOIL = 1028					

G R A N D S U M M A R Y T O T A L S

Material Name		Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Mult Factor
EARTH				
	Excavation	4363	4363	1.00
	Fill	1299	1299	1.00
TOPSOIL				
	Excavation	1028	1028	1.00
	Fill	0	0	1.00

		SPLIT SUMMARY XS Quant Unadjusted Volume (cu. yd.)	XS Quant Adjusted Volume (cu. yd.)	TOTALS Add/Sub Quant Unadjusted Volume (cu. yd.)	Add/Sub Quant Adjusted Volume (cu. yd.)	Mult Factor
EARTH						
	Excavation	4363	4363	0	0	1.00
	Fill	1299	1299	0	0	1.00
TOPSOIL						
	Excavation	1028	1028	0	0	1.00
	Fill	0	0	0	0	1.00