ESTIMATED GRADING QUANTITIES

DESCRIPTION	UNADJUSTED VOLUMES (CY)		ADJUSTED VOLUMES (CY)
	EXC.	EMB.	EXC.
SR-100	1714	2865	1457
CUMBERLAND DRIVE	1623	68	1380
PVT. DRIVES, BUSINESS AND FIELD ENTRANCES	5	130	5
EROSION CONTROL BERMS	210	0	179
TEMPORARY CONSTRUCTION EXITS	115	0	98
OTHER (BRIDGE EXCAVATION, PAVEMENT, ETC...)	0	0	
TOPSOIL (EMB.)	558		
TOPSOIL (EXC.)	682		
TOPSOIL TOTALS (SEE TOPSOIL TABLE)			

ROCK (C.Y.)		TOTALS (C.Y.)				
EXC.	EMB.	EXC. (UNCL.)	EMB. (UNCL.)	EXC (COMMON)	EXC. (AVAIL.)	EXC. (ADJ.)
0	0	4907	3063	4907	3395	2886

BALANCE SUMMARY (CY)

SHRINK = 15 % SWELL = 15 %

EMB.		EXC.
3063	VS.	-2886

REQUIRED = 177

BORROW MATERIAL = 204

```
Input  File: ewkprj.inp
Output File: SR100Earthwork.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 = Y:\Projects\0010000\0014000\14285 TDOT Roadway 2017-2020\WO #20 SR100 Intersection
Improvement\DGN\WMSR100-20MainlineXSections.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, line_string
 1    17    17             lvname = DESIGN - TYPICAL - Finished Grade and Subgrade
 1    18    18             lc = 0
 1    19    19             co = 1-2,6-8,18,161
 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, line_string
 1    27    27             lvname = SURVEY - GROUND - Top of Ground
 1    28    28             lc = ByLevel
 1    29    29             wt = ByLevel
 1    30    30             co = ByLevel
 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
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```
 1    36    36         fill mult factor = 1.000000
 1    37    37             type = line, line_string
 1    38    38             lvname = SURVEY - GROUND - Bottom of Topsoil Layer
 1    39    39             lc = 2
 1    40    40             co = 2
 1    41    41
 1    42    42     Excavation Limit
 1    43    43             type = line
 1    44    44             lvname = DESIGN - EARTHWORK - Excavation Limit Lines
 1    45    45             lc = 0
 1    46    46             wt = 0
 1    47    47             co = 0
 1    48    48
 1    49    49     Write Earthwork Shapes
 1    50    50         plot param
 1    51    51             lv = 347
 1    52    52             lvname = DESIGN - EARTHWORK - Shapes
 1    53    53             co = 2
 1    54    54             wt = 0
 1    55    55             lc = 0
 1    56    56             Stratify Shape Color
 1    57    57
 1    58    58
 1    59    59     Add Accumulated Adjusted Volume Column
 1    60    60
 1    61    61     Add Accumulated Unadjusted Volume Column
 1    62    62
 1    63    63     Calculate Only Between Excavation Limits
 1    64    64
 1    65    65     End Area Decimal Places = 2
 1    66    66
 1    67    67     write column base ascii file = Y:\Projects\0010000\0014000\14285 TDOT Roadway
2017-2020\WO #20 SR100 Intersection Improvement\DGN\Geopak\NewEarthwork.txt
 1    68    68
 1    69    69     column 1 formula = abs( ["Earth", Common Exc, End Area]  )
 1    70    70     column 1 number of decimal place = 2
 1    71    71     column 1 total length = 10
 1    72    72
```

```
 1    73    73     column 2 formula = abs( ["Topsoil", Common Exc, End Area]  )
 1    74    74     column 2 number of decimal place = 2
 1    75    75     column 2 total length = 10
 1    76    76
 1    77    77     column 3 formula = abs( ["Topsoil", Subsoil Exc, End Area]  )
 1    78    78     column 3 number of decimal place = 2
 1    79    79     column 3 total length = 10
 1    80    80
 1    81    81     column 4 formula = abs( ["Earth", Fill, End Area]  )
 1    82    82     column 4 number of decimal place = 2
 1    83    83     column 4 total length = 10
 1    84    84
 1    85    85
 1    86    86     Process Earthwork for Baseline = SR100
 1    87    87         job number = 300
 1    88    88
 1    89    89         beg sta = 335+00.00 R 1
 1    90    90         end sta = 355+00.00 R 1
 0     0    91 END_OF_FILE
COMPUTING EARTHWORKS FOR BASELINE = SR100
COMPUTING EARTHWORKS FOR JOB = 300
FORMING LIST OF XSCELLS
BEGINNING EARTHWORKS COMPUTATION
```

Station	Material Name	End Areas (sq. ft.)	Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Mult Factor	Mass Ordinate	Accum Unadj Vol (cu. yd.)	Accum Adj Vol (cu. yd.)
335+07.83	EARTH							
	Common Exc	12.52	0	0	1.00		0	0
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	13.04	0	0	1.00	0	0	0
	TOPSOIL							
	Common Exc	0.00	0	0	1.00		0	0
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	4.71	0	0	1.00		0	0
	Fill	0.00	0	0	1.00	0	0	0

```
              Mass ordinate for TOPSOIL = 0

335+50.00 EARTH
              Common Exc      13.52         20         20   1.00                20         20
            Subgrade Exc       0.00          0          0   1.00                 0          0
             Subsoil Exc       0.00          0          0   1.00                 0          0
                  Fill        12.27         20         20   1.00        0       20         20
          TOPSOIL
              Common Exc       0.00          0          0   1.00                 0          0
            Subgrade Exc       0.00          0          0   1.00                 0          0
             Subsoil Exc       4.59          7          7   1.00                 7          7
                  Fill         0.00          0          0   1.00        0        0          0
              Mass ordinate for TOPSOIL = 7

336+00.00 EARTH
              Common Exc      13.14         25         25   1.00                45         45
            Subgrade Exc       0.00          0          0   1.00                 0          0
             Subsoil Exc       0.00          0          0   1.00                 0          0
                  Fill        13.07         23         23   1.00        2       43         43
          TOPSOIL
              Common Exc       0.00          0          0   1.00                 0          0
            Subgrade Exc       0.00          0          0   1.00                 0          0
             Subsoil Exc       4.82          9          9   1.00                16         16
                  Fill         0.00          0          0   1.00        2        0          0
              Mass ordinate for TOPSOIL = 16

336+50.00 EARTH
              Common Exc      14.58         26         26   1.00                71         71
            Subgrade Exc       0.00          0          0   1.00                 0          0
             Subsoil Exc       0.00          0          0   1.00                 0          0
                  Fill        16.08         27         27   1.00        1       70         70
          TOPSOIL
              Common Exc       0.02          0          0   1.00                 0          0
            Subgrade Exc       0.00          0          0   1.00                 0          0
             Subsoil Exc       5.48         10         10   1.00                26         26
                  Fill         0.00          0          0   1.00        1        0          0
              Mass ordinate for TOPSOIL = 26
```

337+00.00	EARTH							
	Common Exc	13.75	26	26	1.00		97	97
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	14.54	28	28	1.00	-1	98	98
	TOPSOIL							
	Common Exc	0.01	0	0	1.00		0	0
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	5.17	10	10	1.00		36	36
	Fill	0.00	0	0	1.00	-1	0	0
	Mass ordinate for TOPSOIL = 36							
337+50.00	EARTH							
	Common Exc	11.01	23	23	1.00		120	120
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	17.79	30	30	1.00	-8	128	128
	TOPSOIL							
	Common Exc	0.86	1	1	1.00		1	1
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	4.53	9	9	1.00		45	45
	Fill	0.00	0	0	1.00	-8	0	0
	Mass ordinate for TOPSOIL = 46							
338+00.00	EARTH							
	Common Exc	12.08	21	21	1.00		141	141
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	13.71	29	29	1.00	-16	157	157
	TOPSOIL							
	Common Exc	2.10	3	3	1.00		4	4
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	3.55	7	7	1.00		52	52
	Fill	0.00	0	0	1.00	-16	0	0
	Mass ordinate for TOPSOIL = 56							
338+50.00	EARTH							
	Common Exc	11.57	22	22	1.00		163	163

	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	11.68	24	24	1.00	-18	181	181
	TOPSOIL							
	Common Exc	3.27	5	5	1.00		9	9
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	3.27	6	6	1.00		58	58
	Fill	0.00	0	0	1.00	-18	0	0
	Mass ordinate for TOPSOIL = 67							
339+00.00	EARTH							
	Common Exc	12.13	22	22	1.00		185	185
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	6.61	17	17	1.00	-13	198	198
	TOPSOIL							
	Common Exc	5.03	8	8	1.00		17	17
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	4.46	7	7	1.00		65	65
	Fill	0.00	0	0	1.00	-13	0	0
	Mass ordinate for TOPSOIL = 82							
339+50.00	EARTH							
	Common Exc	15.31	25	25	1.00		210	210
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	5.42	11	11	1.00	1	209	209
	TOPSOIL							
	Common Exc	5.86	10	10	1.00		27	27
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	3.02	7	7	1.00		72	72
	Fill	0.00	0	0	1.00	1	0	0
	Mass ordinate for TOPSOIL = 99							
340+00.00	EARTH							
	Common Exc	8.45	22	22	1.00		232	232
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0

	Fill	33.07	36	36	1.00	-13	245	245
TOPSOIL								
	Common Exc	2.01	7	7	1.00		34	34
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	9.56	12	12	1.00		84	84
	Fill	0.00	0	0	1.00	-13	0	0
	Mass ordinate for TOPSOIL = 118							
340+50.00 EARTH								
	Common Exc	7.73	15	15	1.00		247	247
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	115.45	138	138	1.00	-136	383	383
TOPSOIL								
	Common Exc	2.16	4	4	1.00		38	38
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	16.91	25	25	1.00		109	109
	Fill	0.00	0	0	1.00	-136	0	0
	Mass ordinate for TOPSOIL = 147							
340+70.00 EARTH								
	Common Exc	8.10	6	6	1.00		253	253
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	175.23	108	108	1.00	-238	491	491
TOPSOIL								
	Common Exc	2.18	2	2	1.00		40	40
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	19.82	14	14	1.00		123	123
	Fill	0.00	0	0	1.00	-238	0	0
	Mass ordinate for TOPSOIL = 163							
341+00.00 EARTH								
	Common Exc	5.99	8	8	1.00		261	261
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	330.31	281	281	1.00	-511	772	772
TOPSOIL								

	Common Exc	1.71	2	2	1.00		42	42
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	24.27	24	24	1.00		147	147
	Fill	0.00	0	0	1.00	-511	0	0
	Mass ordinate for TOPSOIL = 189							
341+20.00	EARTH							
	Common Exc	15.17	8	8	1.00		269	269
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	366.93	258	258	1.00	-761	1030	1030
	TOPSOIL							
	Common Exc	7.22	3	3	1.00		45	45
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	29.68	20	20	1.00		167	167
	Fill	0.00	0	0	1.00	-761	0	0
	Mass ordinate for TOPSOIL = 212							
341+50.00	EARTH							
	Common Exc	9.86	14	14	1.00		283	283
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	290.79	365	365	1.00	-1112	1395	1395
	TOPSOIL							
	Common Exc	5.32	7	7	1.00		52	52
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	36.28	37	37	1.00		204	204
	Fill	0.00	0	0	1.00	-1112	0	0
	Mass ordinate for TOPSOIL = 256							
341+60.00	EARTH							
	Common Exc	8.36	3	3	1.00		286	286
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	272.86	104	104	1.00	-1213	1499	1499
	TOPSOIL							
	Common Exc	7.05	2	2	1.00		54	54
	Subgrade Exc	0.00	0	0	1.00		0	0

	Subsoil Exc	36.32	13	13	1.00		217	217
	Fill	0.00	0	0	1.00	-1213	0	0
	Mass ordinate for TOPSOIL = 271							
341+70.00	EARTH							
	Common Exc	11.96	4	4	1.00		290	290
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	218.22	91	91	1.00	-1300	1590	1590
	TOPSOIL							
	Common Exc	6.09	2	2	1.00		56	56
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	23.08	11	11	1.00		228	228
	Fill	0.00	0	0	1.00	-1300	0	0
	Mass ordinate for TOPSOIL = 284							
342+00.00	EARTH							
	Common Exc	12.35	14	14	1.00		304	304
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	174.83	218	218	1.00	-1504	1808	1808
	TOPSOIL							
	Common Exc	6.88	7	7	1.00		63	63
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	21.51	25	25	1.00		253	253
	Fill	0.00	0	0	1.00	-1504	0	0
	Mass ordinate for TOPSOIL = 316							
342+10.00	EARTH							
	Common Exc	12.69	5	5	1.00		309	309
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	166.40	63	63	1.00	-1562	1871	1871
	TOPSOIL							
	Common Exc	6.63	3	3	1.00		66	66
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	21.39	8	8	1.00		261	261
	Fill	0.00	0	0	1.00	-1562	0	0

	Mass ordinate for TOPSOIL = 327							
342+20.00	EARTH							
	Common Exc	12.35	5	5	1.00		314	314
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	157.65	60	60	1.00	-1617	1931	1931
	TOPSOIL							
	Common Exc	6.39	2	2	1.00		68	68
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	21.26	8	8	1.00		269	269
	Fill	0.00	0	0	1.00	-1617	0	0
	Mass ordinate for TOPSOIL = 337							
342+30.00	EARTH							
	Common Exc	6.74	4	4	1.00		318	318
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	150.46	57	57	1.00	-1670	1988	1988
	TOPSOIL							
	Common Exc	2.13	2	2	1.00		70	70
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	18.91	7	7	1.00		276	276
	Fill	0.00	0	0	1.00	-1670	0	0
	Mass ordinate for TOPSOIL = 346							
342+50.00	EARTH							
	Common Exc	6.79	5	5	1.00		323	323
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	129.16	104	104	1.00	-1769	2092	2092
	TOPSOIL							
	Common Exc	2.12	2	2	1.00		72	72
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	17.48	13	13	1.00		289	289
	Fill	0.00	0	0	1.00	-1769	0	0
	Mass ordinate for TOPSOIL = 361							

343+00.00	EARTH							
	Common Exc	7.66	13	13	1.00		336	336
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	60.94	176	176	1.00	-1932	2268	2268
	TOPSOIL							
	Common Exc	2.08	4	4	1.00		76	76
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	13.07	28	28	1.00		317	317
	Fill	0.00	0	0	1.00	-1932	0	0
	Mass ordinate for TOPSOIL = 393							
343+50.00	EARTH							
	Common Exc	7.55	14	14	1.00		350	350
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	29.43	84	84	1.00	-2002	2352	2352
	TOPSOIL							
	Common Exc	1.77	4	4	1.00		80	80
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	9.53	21	21	1.00		338	338
	Fill	0.00	0	0	1.00	-2002	0	0
	Mass ordinate for TOPSOIL = 418							
344+00.00	EARTH							
	Common Exc	7.33	14	14	1.00		364	364
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	9.00	36	36	1.00	-2024	2388	2388
	TOPSOIL							
	Common Exc	2.95	4	4	1.00		84	84
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	5.73	14	14	1.00		352	352
	Fill	0.00	0	0	1.00	-2024	0	0
	Mass ordinate for TOPSOIL = 436							
344+50.00	EARTH							
	Common Exc	15.43	21	21	1.00		385	385

	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	0.87	9	9	1.00	-2012	2397	2397
	TOPSOIL							
	Common Exc	11.34	13	13	1.00		97	97
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.87	6	6	1.00		358	358
	Fill	0.00	0	0	1.00	-2012	0	0
	Mass ordinate for TOPSOIL = 455							
345+00.00	EARTH							
	Common Exc	26.79	39	39	1.00		424	424
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	0.97	2	2	1.00	-1975	2399	2399
	TOPSOIL							
	Common Exc	12.84	22	22	1.00		119	119
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.97	2	2	1.00		360	360
	Fill	0.00	0	0	1.00	-1975	0	0
	Mass ordinate for TOPSOIL = 479							
345+50.00	EARTH							
	Common Exc	57.11	78	78	1.00		502	502
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	0.50	1	1	1.00	-1898	2400	2400
	TOPSOIL							
	Common Exc	16.13	27	27	1.00		146	146
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.50	1	1	1.00		361	361
	Fill	0.00	0	0	1.00	-1898	0	0
	Mass ordinate for TOPSOIL = 507							
346+00.00	EARTH							
	Common Exc	83.88	131	131	1.00		633	633
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0

	Fill	0.51	1	1	1.00	-1768	2401	2401
	TOPSOIL							
	Common Exc	21.27	35	35	1.00		181	181
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.46	1	1	1.00		362	362
	Fill	0.00	0	0	1.00	-1768	0	0
	Mass ordinate for TOPSOIL = 543							
346+50.00	EARTH							
	Common Exc	25.30	101	101	1.00		734	734
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	1.74	2	2	1.00	-1669	2403	2403
	TOPSOIL							
	Common Exc	15.16	34	34	1.00		215	215
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	1.74	2	2	1.00		364	364
	Fill	0.00	0	0	1.00	-1669	0	0
	Mass ordinate for TOPSOIL = 579							
347+00.00	EARTH							
	Common Exc	72.36	90	90	1.00		824	824
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	0.00	2	2	1.00	-1581	2405	2405
	TOPSOIL							
	Common Exc	15.49	28	28	1.00		243	243
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	2	2	1.00		366	366
	Fill	0.00	0	0	1.00	-1581	0	0
	Mass ordinate for TOPSOIL = 609							
347+21.99	EARTH							
	Common Exc	18.56	37	37	1.00		861	861
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	1.46	1	1	1.00	-1545	2406	2406
	TOPSOIL							

	Common Exc	12.12	11	11	1.00		254	254
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	1.46	1	1	1.00		367	367
	Fill	0.00	0	0	1.00	-1545	0	0
	Mass ordinate for TOPSOIL = 621							
347+50.00	EARTH							
	Common Exc	12.42	16	16	1.00		877	877
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	3.45	3	3	1.00	-1532	2409	2409
	TOPSOIL							
	Common Exc	7.75	10	10	1.00		264	264
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	2.25	2	2	1.00		369	369
	Fill	0.00	0	0	1.00	-1532	0	0
	Mass ordinate for TOPSOIL = 633							
348+00.00	EARTH							
	Common Exc	10.83	22	22	1.00		899	899
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	5.65	8	8	1.00	-1518	2417	2417
	TOPSOIL							
	Common Exc	5.94	13	13	1.00		277	277
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	3.29	5	5	1.00		374	374
	Fill	0.00	0	0	1.00	-1518	0	0
	Mass ordinate for TOPSOIL = 651							
348+50.00	EARTH							
	Common Exc	11.97	21	21	1.00		920	920
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	4.41	9	9	1.00	-1506	2426	2426
	TOPSOIL							
	Common Exc	6.34	11	11	1.00		288	288
	Subgrade Exc	0.00	0	0	1.00		0	0

	Subsoil Exc	2.76	6	6	1.00		380	380
	Fill	0.00	0	0	1.00	-1506	0	0
	Mass ordinate for TOPSOIL = 668							
349+00.00	EARTH							
	Common Exc	8.76	19	19	1.00		939	939
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	4.11	8	8	1.00	-1495	2434	2434
	TOPSOIL							
	Common Exc	4.87	10	10	1.00		298	298
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	4.11	6	6	1.00		386	386
	Fill	0.00	0	0	1.00	-1495	0	0
	Mass ordinate for TOPSOIL = 684							
349+50.00	EARTH							
	Common Exc	143.73	141	141	1.00		1080	1080
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	5.35	9	9	1.00	-1363	2443	2443
	TOPSOIL							
	Common Exc	30.45	33	33	1.00		331	331
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	4.25	8	8	1.00		394	394
	Fill	0.00	0	0	1.00	-1363	0	0
	Mass ordinate for TOPSOIL = 725							
350+00.00	EARTH							
	Common Exc	65.25	193	193	1.00		1273	1273
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	22.29	26	26	1.00	-1196	2469	2469
	TOPSOIL							
	Common Exc	18.55	45	45	1.00		376	376
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	10.06	13	13	1.00		407	407
	Fill	0.00	0	0	1.00	-1196	0	0

	Mass ordinate for TOPSOIL = 783							
350+50.00	EARTH							
	Common Exc	31.39	89	89	1.00		1362	1362
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	24.16	43	43	1.00	-1150	2512	2512
	TOPSOIL							
	Common Exc	13.80	30	30	1.00		406	406
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	10.51	19	19	1.00		426	426
	Fill	0.00	0	0	1.00	-1150	0	0
	Mass ordinate for TOPSOIL = 832							
351+00.00	EARTH							
	Common Exc	14.74	43	43	1.00		1405	1405
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	61.22	79	79	1.00	-1186	2591	2591
	TOPSOIL							
	Common Exc	8.52	21	21	1.00		427	427
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	12.72	22	22	1.00		448	448
	Fill	0.00	0	0	1.00	-1186	0	0
	Mass ordinate for TOPSOIL = 875							
351+50.00	EARTH							
	Common Exc	15.98	28	28	1.00		1433	1433
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	46.18	99	99	1.00	-1257	2690	2690
	TOPSOIL							
	Common Exc	9.17	16	16	1.00		443	443
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	11.95	23	23	1.00		471	471
	Fill	0.00	0	0	1.00	-1257	0	0
	Mass ordinate for TOPSOIL = 914							

352+00.00	EARTH							
	Common Exc	34.90	47	47	1.00		1480	1480
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	27.45	68	68	1.00	-1278	2758	2758
	TOPSOIL							
	Common Exc	13.27	21	21	1.00		464	464
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	9.14	20	20	1.00		491	491
	Fill	0.00	0	0	1.00	-1278	0	0
	Mass ordinate for TOPSOIL = 955							
352+50.00	EARTH							
	Common Exc	48.32	77	77	1.00		1557	1557
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	22.23	46	46	1.00	-1247	2804	2804
	TOPSOIL							
	Common Exc	15.76	27	27	1.00		491	491
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	7.64	16	16	1.00		507	507
	Fill	0.00	0	0	1.00	-1247	0	0
	Mass ordinate for TOPSOIL = 998							
353+00.00	EARTH							
	Common Exc	45.50	87	87	1.00		1644	1644
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	20.74	40	40	1.00	-1200	2844	2844
	TOPSOIL							
	Common Exc	14.66	28	28	1.00		519	519
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	7.12	14	14	1.00		521	521
	Fill	0.00	0	0	1.00	-1200	0	0
	Mass ordinate for TOPSOIL = 1040							
353+50.00	EARTH							
	Common Exc	9.01	50	50	1.00		1694	1694

	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	0.00	19	19	1.00	-1169	2863	2863
	TOPSOIL							
	Common Exc	1.19	15	15	1.00		534	534
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	7	7	1.00		528	528
	Fill	0.00	0	0	1.00	-1169	0	0
	Mass ordinate for TOPSOIL = 1062							
354+00.00	EARTH							
	Common Exc	4.99	13	13	1.00		1707	1707
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	0.88	1	1	1.00	-1157	2864	2864
	TOPSOIL							
	Common Exc	0.09	1	1	1.00		535	535
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.88	1	1	1.00		529	529
	Fill	0.00	0	0	1.00	-1157	0	0
	Mass ordinate for TOPSOIL = 1064							
354+50.00	EARTH							
	Common Exc	2.20	7	7	1.00		1714	1714
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	0.00	1	1	1.00	-1151	2865	2865
	TOPSOIL							
	Common Exc	0.00	0	0	1.00		535	535
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	1	1	1.00		530	530
	Fill	0.00	0	0	1.00	-1151	0	0
	Mass ordinate for TOPSOIL = 1065							
354+52.06	EARTH							
	Common Exc	1.68	0	0	1.00		1714	1714
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0

Fill	0.00	0	0	1.00	-1151	2865	2865

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				
	Common Exc	1714	1714	1.00
	Subgrade Exc	0	0	1.00
	Subsoil Exc	0	0	1.00
	Fill	2865	2865	1.00
TOPSOIL				
	Common Exc	535	535	1.00
	Subgrade Exc	0	0	1.00
	Subsoil Exc	530	530	1.00
	Fill	0	0	1.00

S P L I T S U M M A R Y T O T A L S

Material Name		XS Quant Unadjusted Volume (cu. yd.)	XS Quant Adjusted Volume (cu. yd.)	Add/Sub Quant Unadjusted Volume (cu. yd.)	Add/Sub Quant Adjusted Volume (cu. yd.)	Mult Factor
EARTH						
	Common Exc	1714	1714	0	0	1.00
	Subgrade Exc	0	0	0	0	1.00
	Subsoil Exc	0	0	0	0	1.00
	Fill	2865	2865	0	0	1.00
TOPSOIL						
	Common Exc	535	535	0	0	1.00
	Subgrade Exc	0	0	0	0	1.00
	Subsoil Exc	530	530	0	0	1.00
	Fill	0	0	0	0	1.00

B A L A N C E P O I N T S U M M A R Y

Material Name	Cumulative		Incremental		Mult
	Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Factor

Station = -00000000+01.#J

EARTH						
	Common Exc	20	20	20	20	1.00
	Subgrade Exc	0	0	0	0	1.00
	Subsoil Exc	0	0	0	0	1.00
	Fill	20	20	20	20	1.00
TOPSOIL						
	Common Exc	0	0	0	0	1.00
	Subgrade Exc	0	0	0	0	1.00
	Subsoil Exc	7	7	7	7	1.00
	Fill	0	0	0	0	1.00

Station = 336+75.00

EARTH						
	Common Exc	84	84	64	64	1.00
	Subgrade Exc	0	0	0	0	1.00
	Subsoil Exc	0	0	0	0	1.00
	Fill	84	84	64	64	1.00
TOPSOIL						
	Common Exc	0	0	0	0	1.00
	Subgrade Exc	0	0	0	0	1.00
	Subsoil Exc	31	31	24	24	1.00
	Fill	0	0	0	0	1.00

Station = 339+46.43

EARTH						
	Common Exc	208	208	124	124	1.00
	Subgrade Exc	0	0	0	0	1.00
	Subsoil Exc	0	0	0	0	1.00
	Fill	208	208	124	124	1.00
TOPSOIL						
	Common Exc	26	26	26	26	1.00
	Subgrade Exc	0	0	0	0	1.00
	Subsoil Exc	72	72	41	41	1.00
	Fill	0	0	0	0	1.00

Station = 339+53.57

EARTH						
	Common Exc	212	212	4	4	1.00
	Subgrade Exc	0	0	0	0	1.00
	Subsoil Exc	0	0	0	0	1.00

	Fill	212	212	4	4	1.00
TOPSOIL						
	Common Exc	28	28	2	2	1.00
	Subgrade Exc	0	0	0	0	1.00
	Subsoil Exc	73	73	1	1	1.00
	Fill	0	0	0	0	1.00

```
Input  File: ewkprj.inp
Output File: Y:\Projects\0010000\0014000\14285 TDOT Roadway 2017-2020\WO #20 SR100 Intersection
Improvement\DGN\Geopak\CMBRLNDEarthwork.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 = Y:\Projects\0010000\0014000\14285 TDOT Roadway 2017-2020\WO #20 SR100 Intersection
Improvement\DGN\WMSR100-20CumberlandXSections.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, line_string
 1    17    17             lvname = DESIGN - TYPICAL - Finished Grade and Subgrade
 1    18    18             lc = 0
 1    19    19             co = 1-2,6-8,18,161
 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, line_string
 1    27    27             lvname = SURVEY - GROUND - Top of Ground
 1    28    28             lc = ByLevel
 1    29    29             wt = ByLevel
 1    30    30             co = ByLevel
 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, line_string
 1    38    38             lvname = SURVEY - GROUND - Bottom of Topsoil Layer
 1    39    39             lc = 2
 1    40    40             co = 2
 1    41    41
 1    42    42     Excavation Limit
 1    43    43             type = line
 1    44    44             lvname = DESIGN - EARTHWORK - Excavation Limit Lines
 1    45    45             lc = 0
 1    46    46             wt = 0
 1    47    47             co = 0
 1    48    48
 1    49    49     Write Earthwork Shapes
 1    50    50         plot param
 1    51    51             lv = 347
 1    52    52             lvname = DESIGN - EARTHWORK - Shapes
 1    53    53             co = 2
 1    54    54             wt = 0
 1    55    55             lc = 0
 1    56    56             Stratify Shape Color
 1    57    57
 1    58    58
 1    59    59     Add Accumulated Adjusted Volume Column
 1    60    60
 1    61    61     Add Accumulated Unadjusted Volume Column
 1    62    62
 1    63    63     Calculate Only Between Excavation Limits
 1    64    64
 1    65    65     End Area Decimal Places = 2
 1    66    66
 1    67    67     write column base ascii file = Y:\Projects\0010000\0014000\14285 TDOT Roadway 2017-2020\WO
#20 SR100 Intersection Improvement\DGN\Geopak\SR100Earthwork.txt
 1    68    68
 1    69    69     column 1 formula = abs( ["Earth", Common Exc, End Area]  )
 1    70    70     column 1 number of decimal place = 2
 1    71    71     column 1 total length = 10
 1    72    72
 1    73    73     column 2 formula = abs( ["Topsoil", Common Exc, End Area]  )
```

```
 1    74    74     column 2 number of decimal place = 2
 1    75    75     column 2 total length = 10
 1    76    76
 1    77    77     column 3 formula = abs( ["Topsoil", Subsoil Exc, End Area]  )
 1    78    78     column 3 number of decimal place = 2
 1    79    79     column 3 total length = 10
 1    80    80
 1    81    81     column 4 formula = abs( ["Earth", Fill, End Area]  )
 1    82    82     column 4 number of decimal place = 2
 1    83    83     column 4 total length = 10
 1    84    84
 1    85    85
 1    86    86     Process Earthwork for Baseline = CMBRLND_CONST
 1    87    87         job number = 300
 1    88    88
 1    89    89         beg sta = 70+50.00 R 1
 1    90    90         end sta = 73+50.00 R 1
 0     0    91 END_OF_FILE
COMPUTING EARTHWORKS FOR BASELINE = CMBRLND_CONST
COMPUTING EARTHWORKS FOR JOB = 300
FORMING LIST OF XSCELLS
BEGINNING EARTHWORKS COMPUTATION
```

Station	Material Name	End Areas (sq. ft.)	Unadjusted Volumes (cu. yd.)	Adjusted Volumes (cu. yd.)	Mult Factor	Mass Ordinate	Accum Unadj Vol (cu. yd.)	Accum Adj Vol (cu. yd.)
70+50.00	EARTH							
	Common Exc	193.79	0	0	1.00		0	0
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	1.55	0	0	1.00	0	0	0
	TOPSOIL							
	Common Exc	17.99	0	0	1.00		0	0
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	1.55	0	0	1.00		0	0
	Fill	0.00	0	0	1.00	0	0	0
	Mass ordinate for TOPSOIL = 0							

71+00.00	EARTH							
	Common Exc	335.56	490	490	1.00		490	490
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	0.70	2	2	1.00	488	2	2
	TOPSOIL							
	Common Exc	27.05	42	42	1.00		42	42
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.70	2	2	1.00		2	2
	Fill	0.00	0	0	1.00	488	0	0
	Mass ordinate for TOPSOIL = 44							
71+50.00	EARTH							
	Common Exc	240.68	534	534	1.00		1024	1024
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	0.72	1	1	1.00	1021	3	3
	TOPSOIL							
	Common Exc	22.58	46	46	1.00		88	88
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.72	1	1	1.00		3	3
	Fill	0.00	0	0	1.00	1021	0	0
	Mass ordinate for TOPSOIL = 91							
72+00.00	EARTH							
	Common Exc	127.77	341	341	1.00		1365	1365
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	1.05	2	2	1.00	1360	5	5
	TOPSOIL							
	Common Exc	13.71	34	34	1.00		122	122
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	1.05	2	2	1.00		5	5
	Fill	0.00	0	0	1.00	1360	0	0
	Mass ordinate for TOPSOIL = 127							
72+50.00	EARTH							
	Common Exc	55.56	170	170	1.00		1535	1535
	Subgrade Exc	0.00	0	0	1.00		0	0

	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	14.36	14	14	1.00	1516	19	19
TOPSOIL								
	Common Exc	4.74	17	17	1.00		139	139
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	6.38	7	7	1.00		12	12
	Fill	0.00	0	0	1.00	1516	0	0
	Mass ordinate for TOPSOIL = 151							
73+00.00 EARTH								
	Common Exc	29.89	79	79	1.00		1614	1614
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	30.22	41	41	1.00	1554	60	60
TOPSOIL								
	Common Exc	3.31	7	7	1.00		146	146
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	8.60	14	14	1.00		26	26
	Fill	0.00	0	0	1.00	1554	0	0
	Mass ordinate for TOPSOIL = 172							
73+15.13 EARTH								
	Common Exc	2.35	9	9	1.00		1623	1623
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	0	0	1.00		0	0
	Fill	0.00	8	8	1.00	1555	68	68
TOPSOIL								
	Common Exc	0.00	1	1	1.00		147	147
	Subgrade Exc	0.00	0	0	1.00		0	0
	Subsoil Exc	0.00	2	2	1.00		28	28
	Fill	0.00	0	0	1.00	1555	0	0
	Mass ordinate for TOPSOIL = 175							

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			
Common Exc	1623	1623	1.00

Subgrade Exc	0	0	1.00	
Subsoil Exc	0	0	1.00	
Fill	68	68	1.00	
TOPSOIL				
Common Exc	147	147	1.00	
Subgrade Exc	0	0	1.00	
Subsoil Exc	28	28	1.00	
Fill	0	0	1.00	

S P L I T S U M M A R Y T O T A L S

Material Name	XS Quant Unadjusted Volume (cu. yd.)	XS Quant Adjusted Volume (cu. yd.)	Add/Sub Quant Unadjusted Volume (cu. yd.)	Add/Sub Quant Adjusted Volume (cu. yd.)	Mult Factor
EARTH					
Common Exc	1623	1623	0	0	1.00
Subgrade Exc	0	0	0	0	1.00
Subsoil Exc	0	0	0	0	1.00
Fill	68	68	0	0	1.00
TOPSOIL					
Common Exc	147	147	0	0	1.00
Subgrade Exc	0	0	0	0	1.00
Subsoil Exc	28	28	0	0	1.00
Fill	0	0	0	0	1.00