



**STATE OF TENNESSEE  
DEPARTMENT OF TRANSPORTATION**

**ROADWAY DESIGN DIVISION**  
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**INSTRUCTIONAL BULLETIN NO. 22-04**

**Regarding Chapter 2 – Earthwork Update**

**Effective with the May 13, 2022 letting**, the Roadway Design Guidelines Chapter 2 has been revised to include updated earthwork information. The estimated grading tabulated block has been updated. Topsoil quantity calculation has been revised. An info only topsoil calculation table has been added to the Estimated Quantities File. The [Earthwork Design Guide](#) has also been updated to provide additional guidance for designers.

The revised section is shown below:

**2-708.00 ESTIMATED GRADING QUANTITIES TABULATED BLOCK**

The Estimated Grading Quantities tabulated block should be shown on Sheet 2E, Tabulated Quantities Sheet. An example of the tabulated block is shown in *Table 2-7, Estimated Grading Quantities – Balanced Example* and *Table 2-8, Estimated Grading Quantities – Unbalanced Example*.

On all projects using Item No. 203-01, Road and Drainage Excavation (Unclassified), it is to be referred to as unclassified excavation. When the Designer has received the Soils and Geology Report stating approximately what portion is common and what portion is solid rock, the Designer is to include the quantities in the block, even if the quantity is zero. If the Designer does not know the composition of the material being excavated, the Designer should use write 'UNKNOWN' in the Rock cell.

ESTIMATED GRADING QUANTITIES						
DESCRIPTION	UNADJUSTED VOLUMES (CY)		ADJUSTED VOLUMES (CY)	BALANCE SUMMARY		
	EXC.	EMB.	EXC.	SHRINK = 15 % SWELL = 15 %		
MAINLINE	225000	237500	191250	EXC.                      EMB.  248950                  vs.       -248950  AVAILABLE            =            0  WASTE MATERIAL      =            0		
SIDE ROADS	7000	11450	5950			
PVT. DRIVES, BUSINESS AND FIELD ENTRANCES	0	0				
INDEPENDENT DITCHES	0	0				
TEMPORARY CONSTRUCTION EXITS	0	0				
OTHER (BRIDGE EXCAVATION, PAVEMENT, ETC...)	0	0				
TOPSOIL (EMB.)	5000					
TOPSOIL (EXC.)	13000					
TOPSOIL TOTALS (SEE TOPSOIL TAB)						
<b>ROCK (C.Y.)</b>		<b>TOTALS (C.Y.)</b>				
EXC.	EMB.	EXC. (UNCL.)	EMB. (UNCL.)	EXC (COMMON)	EXC. (AVAIL.)	EXC. (ADJ.)
45000	0	295000	248950	250000	232000	248950

**Table 2-7**  
**Estimated Grading Quantities – Balanced Example**

ESTIMATED GRADING QUANTITIES						
DESCRIPTION	UNADJUSTED VOLUMES (CY)		ADJUSTED VOLUMES (CY)	BALANCE SUMMARY		
	EXC.	EMB.	EXC.	SHRINK = 15 % SWELL = 15 %		
MAINLINE	325000	237500	276250	EXC.                      EMB.  333950                  vs.       -248950  AVAILABLE            =            85000  WASTE MATERIAL      =            97750		
SIDE ROADS	7000	11450	5950			
PVT. DRIVES, BUSINESS AND FIELD ENTRANCES	0	0				
INDEPENDENT DITCHES	0	0				
TEMPORARY CONSTRUCTION EXITS	0	0				
OTHER (BRIDGE EXCAVATION, PAVEMENT, ETC...)	0	0				
TOPSOIL (EMB.)	5000					
TOPSOIL (EXC.)	13000					
TOPSOIL TOTALS (SEE TOPSOIL TAB)						
<b>ROCK (C.Y.)</b>		<b>TOTALS (C.Y.)</b>				
EXC.	EMB.	EXC. (UNCL.)	EMB. (UNCL.)	EXC (COMMON)	EXC. (AVAIL.)	EXC. (ADJ.)
45000	0	395000	248950	350000	332000	333950

**Table 2-8**  
**Estimated Grading Quantities – Unbalanced Example**

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Jennifer Lloyd, PE  
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KJL:LHC:MBB:NHP:WKA  
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