

Earthwork Balance Sheet

Volumes in Cubic Yards

PROJECT: A-0009CC

COUNTY: Graham

DATE: 7/8/2022

ROCK SWELL = 25% COMPILED BY: SGM

SHEET OF SHEETS

STATION	STATION	EXCAVATION					EMBANKMENT				BORROW	WASTE			
		TOTAL UNCLASS.	ROCK	UNDERCUT	UNSUIT. UNCLASS.	SUITABLE UNCLASS.	TOTAL	ROCK	EARTH	EMBANK. +15%		ROCK	SUITABLE	UNSUIT.	TOTAL
-L- 414+50.00	-L- 444+50.00	22,650	4,395			18,255	1,381	1,105		1,105		3,290	18,255		21,545
Retaining Wall #27				560										560	
-DR3- 10+20.00	-DR3- 11+72.03	4,055				4,055							4,055		4,055
	SUBTOTAL 1	26,705	4,395	560		22,310	1,381	1,105		1,105		3,290	22,310	560	26,160
-L- 444+50.00	-L- 474+19.52	13,476	587			12,889	2,143	587	1,409	2,208			11,268		11,268
	SUBTOTAL 2	13,476	587			12,889	2,143	587	1,409	2,208			11,268		11,268
-Y2- 12+60.00	-Y2- 40+00.00	90,331	3,445			86,886	21,994	3,445	17,688	23,786			66,545		66,545
Retaining Wall #30				2,850										2,850	2,850
	SUBTOTAL 3	90,331	3,445	2,850		86,886	21,994	3,445	17,688	23,786			66,545	2,850	69,395
-Y2- 40+00.00	-Y2- 70+00.00	24,372	848			23,524	54,562	848	53,502	62,375	38,003				
Retaining Wall #32				8,150										8,150	8,150
-DR4- 10+12.13	-DR4- 11+10.00	57				57	3,435		3,435	3,950	3,893				
	SUBTOTAL 4	24,429	848	8,150		23,581	57,997	848	56,937	66,325	41,896			8,150	8,150
-Y2- 70+00.00	-Y2- 100+00.00	11,409	1,015			10,394	13,947	1,015	12,678	15,595	4,186				
-Y3- 10+50.00	-Y3- 14+02.24	2,881				2,881	1,160		1,160	1,334			1,547		1,547
	SUBTOTAL 5	14,290	1,015			13,275	15,107	1,015	13,838	16,929	4,186		1,547		1,547
-Y2- 100+00.00	-Y2- 130+00.00	21,061	188			20,873	20,987	188	20,752	24,053	2,992				
-Y2- 117+75.00	-Y2- 130+00.00			5,076										5,076	5,076
	SUBTOTAL 6	21,061	188	5,076		20,873	20,987	188	20,752	24,053	2,992			5,076	5,076
-Y2- 130+00.00	-Y2- 158+00.00	358,609	129,575			229,034	20,063	16,050		16,050		113,525	229,034		342,559
-Y2- 130+00.00	-Y2- 133+75.00			1,554										1,554	1,554
-Y2- 138+25.00	-Y2- 141+75.00			2,320										2,320	2,320
	SUBTOTAL 7	358,609	129,575	3,874		229,034	20,063	16,050		16,050		113,525	229,034	3,874	346,433
-Y2- 158+00.00	-Y2- 169+60.00	54,525	20,190			34,335	833	666		666		19,524	34,335		53,859
	SUBTOTAL 8	54,525	20,190			34,335	833	666		666		19,524	34,335		53,859
	TOTAL	603,426	160,243	20,510		443,183	140,505	23,904	110,624	151,122	49,074	136,339	365,039	20,510	521,888
	UNSUITABLE WASTE (PER GEOTECH)				1,000	-1,000							-1,000	1,000	
	LOSS DUE TO CLEARING & GRUBBING	-25,000				-25,000							-25,000		-25,000
	ADDITIONAL UNDERCUT (PER GEOTECH)			5,980										5,980	5,980
	ADDITIONAL UNDERCUT (PER CFI)			5,000										5,000	5,000
	HARD ROCK WASTE TO REPLACE BORROW							34,138	-34,138		-34,138	-34,138			-34,138
	ADJUST ROCK SWELL								-8,535	-8,535	-8,535				
	ELIMINATE EARTH SHRINKAGE FACTOR									-6,401	-6,401				
	HARD ROCK WASTE TO REPLACE EARTH EMBANKMENT							54,361	-54,361			-54,361	54,361		
	ADJUST ROCK SWELL								-13,590	-13,590			13,590		13,590
	ELIMINATE EARTH SHRINKAGE FACTOR									-10,193			10,193		10,193
	APPLY ROCK SWELL FACTOR TO PERMANENTLY WASTED HARD ROCK											11,960			11,960
	APPLY ROCK SHRINKAGE TO PERMANENTLY WASTED HARD ROCK											8,970			8,970
	GRAND TOTAL	578,426	160,243	31,490	1,000	417,183	140,505	112,403		112,403		68,769	417,182	32,490	518,443
	SAY	585,000		31,490											

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY TGS ENGINEERS. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.

EST. DDE = 2,900 CUBIC YARDS

SELECT GRANULAR MATERIAL, CLASS III = 19,550 CY

EST. SHALLOW UNDERCUT = 1,500 CY

PER GEOTECH RECOMMENDATION, ESTIMATED 22,600 CUBIC YARDS OF UNDERCUT FOR TOE SHEAR KEY.

PAVEMENT STRUCTURE VOLUME: 7,000 CY