

# CALCULATIONS

## ITEM 601 ROCK CHANNEL PROTECTION, TYPE C, WITH FABRIC FILTER

A. STA 222+86 TO STA 223+32, LT		
5 FT DEPTH AT 2.4:1 SLOPE TO 1.8:1 SLOPE = 5.42 FT TO 5.72 FT DEPTHS		
976.48 S.F. AREA X (5.42 FT + 5.72 FT)/2 / 27 CU. FT./CU. YD.	=	201.44 CU. YDS.
VARYING DEPTH, 4.75 FT TO 5.00 FT BEHIND RETAINING WALL SHAFTS AT 1.8:1 SLOPE = 5.72 FT TO 5.43 FT		
339.30 S.F. AREA X (5.72 FT + 5.43 FT)/2 / 27 CU. FT./CU. YD.	=	70.06 CU. YDS.
VARYING DEPTH, OUTSIDE CRUSHED AGGREGATE SLOPE PROTECTION, 5.72 FT DEPTH TO 0 FT. DEPTH		
435.56 S.F. AREA X (5.72 FT + 0 FT)/2 / 27 CU. FT./CU. YD.	=	46.14 CU. YDS.
LESS VOLUME FOR RETAINING WALL SHAFTS		
4 SHAFTS X 25.13 S.F. AREA X (5.72 FT + 3.52 FT)/2 / 27 CU. YD./CU. FT.	=	-17.20 CU. YDS.
SUBTOTAL A	=	300.44 CU. YDS.
B. SOUTH BASELINE STA 2+00 TO STA 3+00		
END AREA (S.F.)	VOLUME (CU. YDS.)	
STA. 2+00 139.51	258.36	
STA. 2+50 139.51	258.36	
STA. 3+00 139.51		
SUBTOTAL B	=	516.72 CU. YDS.
C. STA 223+81 TO STA 224+36.50, RT		
5 FT DEPTH AT 2.1:1 SLOPE TO 1.8:1 SLOPE = 5.54 FT TO 5.72 FT DEPTHS		
3126.28 S.F. AREA X (5.54 FT + 5.72 FT)/2 / 27 CU. FT./CU. YD.	=	651.89 CU. YDS.
VARYING DEPTH, 4.75 FT TO 5.00 FT BEHIND RETAINING WALL SHAFTS AT 1.8:1 SLOPE = 5.72 FT TO 5.43 FT		
261 S.F. AREA X (5.43 FT + 5.72 FT)/2 / 27 CU. FT./CU. YD.	=	53.89 CU. YDS.
VARYING DEPTH, OUTSIDE CRUSHED AGGREGATE SLOPE PROTECTION, 5.72 FT DEPTH TO 0 FT. DEPTH		
623.45 S.F. AREA X (5.72 FT + 0 FT)/2 / 27 CU. FT./CU. YD.	=	66.04 CU. YDS.
SUBTOTAL C	=	771.82 CU. YDS.
D. STA 226+69 TO STA 227+22, LT		
5 FT DEPTH AT 2.0:1 SLOPE TO 1.8:1 SLOPE = 5.59 FT TO 5.72 FT DEPTHS		
1446.06 S.F. AREA X (5.59 FT + 5.72 FT)/2 / 27 CU. FT./CU. YD.	=	302.87 CU. YDS.
VARYING DEPTH, 4.75 FT TO 5.00 FT BEHIND RETAINING WALL SHAFTS AT 1.8:1 SLOPE = 5.72 FT TO 5.43 FT		
397.50 S.F. AREA X (5.43 FT + 5.72 FT)/2 / 27 CU. FT./CU. YD.	=	82.08 CU. YDS.
VARYING DEPTH, OUTSIDE CRUSHED AGGREGATE SLOPE PROTECTION, 5.72 FT DEPTH TO 0 FT. DEPTH		
592 S.F. AREA X (5.72 FT + 0 FT)/2 / 27 CU. FT./CU. YD.	=	62.71 CU. YDS.
SUBTOTAL D	=	447.66 CU. YDS.
E. NORTH BASELINE STA 5+00 TO STA 6+00		
END AREA (S.F.)	VOLUME (CU. FT.)	
STA 5+00 139.51	258.36	
STA 5+50 139.51	258.36	
STA 6+00 139.51		
SUBTOTAL E	=	516.72 CU. YDS.
F. STA 227+76 TO STA 228+15		
5 FT DEPTH AT 2.0:1 SLOPE TO 1.8:1 SLOPE = 5.54 FT TO 5.72 FT DEPTHS		
1173 S.F. AREA X (5.72 FT + 5.54 FT)/2 / 27 CU. FT./CU. YD.	=	244.59 CU. YDS.
VARYING DEPTH, OUTSIDE CRUSHED AGGREGATE SLOPE PROTECTION, 5.72 FT DEPTH TO 0 FT DEPTH		
511.5 S.F. AREA X (5.72 FT + 0 FT)/2 / 27 CU. FT./CU. YD.	=	54.18 CU. YDS.
LESS VOLUME FOR RETAINING WALL SHAFTS		
4 SHAFTS X 25.13 S.F. AREA X (5.72 FT + 3.52 FT)/2 / 27 CU. YD./CU. FT.	=	-17.20 CU. YDS.
SUBTOTAL F	=	281.57 CU. YDS.
<b>TOTAL FOR ITEM 601</b>	=	<b>2835 CU. YDS.</b>

## ITEM SPECIAL BERM RESHAPING

A. STA 221+33.27 TO STA 222+83.27, LT	=	150 L.F.
B. STA 222+27.59 TO STA 223+77.59, RT	=	150 L.F.
C. STA 227+24.53 TO STA 228+74.53, LT	=	150 L.F.
D. STA 228+18.83 TO STA 229+68.83, RT	=	150 L.F.
SUBTOTAL	=	600 L.F.
<b>TOTAL OF ITEM SPECIAL</b>	=	<b>600 L.F.</b>

## ITEM 607 FENCE, TYPE CL

A. STA 223+80 TO STA 224+35, RT	=	105 L.F.
B. STA 226+45 TO STA 227+23, LT	=	145 L.F.
C. STA 228+16, RT	=	40 L.F.
SUBTOTAL	=	290 L.F.
<b>TOTAL OF ITEM 607</b>	=	<b>290 L.F.</b>

## ITEM 609 CURB, TYPE 6 (FOR MEDIAN CURB)

A. STA 223+12.09 TO STA 223+22.09, LT	=	10 L.F.
B. STA 223+12.09 TO STA 223+22.09, RT	=	10 L.F.
D. STA 227+79.86 TO STA 227+89.86, LT	=	10 L.F.
E. STA 227+79.86 TO STA 227+89.86, RT	=	10 L.F.
SUBTOTAL	=	40 L.F.
<b>TOTAL OF ITEM 609</b>	=	<b>40 L.F.</b>

## ITEM 609 CURB, TYPE 6, AS PER PLAN

A. STA 222+55.27 TO STA 222+81.27, LT	=	26 L.F.
B. STA 223+49.59 TO STA 223+59.59, RT	=	10 L.F.
C. STA 227+42.52 TO STA 227+52.52, LT	=	10 L.F.
D. STA 228+20.83 TO STA 228+46.83, RT	=	26 L.F.
E. STA 236+08.23 TO STA 236+34.23, LT	=	26 L.F.
F. STA 236+67.18 TO STA 236+93.18, RT	=	26 L.F.
G. STA 238+08.13 TO STA 238+34.13, LT	=	26 L.F.
H. STA 238+67.11 TO STA 238+93.11, RT	=	26 L.F.
SUBTOTAL	=	176 L.F.
<b>TOTAL OF ITEM 609</b>	=	<b>176 L.F.</b>

## ITEM 611 REINFORCED CONCRETE APPROACH SLAB (T=15"), AS PER PLAN

A. STA. 223+22.09 TO STA 223+47.09, LT 25 FT. x 29.83 FT. / 9 SQ. FT./SQ. YD.	=	82.86 SQ. YDS.
B. STA. 223+22.09 TO STA 223+47.09, RT 25 FT. x 29.83 FT. / 9 SQ. FT./SQ. YD.	=	82.86 SQ. YDS.
C. STA. 227+54.86 TO STA 227+79.86, LT 25 FT. x 29.83 FT. / 9 SQ. FT./SQ. YD.	=	82.86 SQ. YDS.
D. STA. 227+54.86 TO STA 227+79.86, RT 25 FT. x 29.83 FT. / 9 SQ. FT./SQ. YD.	=	82.86 SQ. YDS.
SUBTOTAL	=	331.44 SQ. YDS.
<b>TOTAL OF ITEM 611</b>	=	<b>332 SQ. YDS.</b>

## ITEM 659 COMMERCIAL FERTILIZER

SHT. 21 - 248 x 9 x 20 ÷ 1000 ÷ 2000 = 0.02	TON
SHT. 28 - 767 x 9 x 20 ÷ 1000 ÷ 2000 = 0.07	TON
TOTAL = 0.09	TON

## ITEM 659 SEEDING AND MULCHING

A. STA 222+55.27 TO STA 222+81.27, LT 26 FT. x 5 FT. / 9 SQ. FT./SQ. YD.	=	14.44 SQ. YDS.
B. STA 223+12.09 TO STA 223+47.09, CL 35 FT. x 17 FT. / 9 SQ. FT./SQ. YD.	=	66.11 SQ. YDS.
C. STA 223+49.59 TO STA 223+75.59, RT 26 FT. x 5 FT. / 9 SQ. FT./SQ. YD.	=	14.44 SQ. YDS.
D. STA 227+26.52 TO STA 227+52.52, LT 26 FT. x 5 FT. / 9 SQ. FT./SQ. YD.	=	14.44 SQ. YDS.
E. STA 227+54.86 TO STA 227+86.86, CL 35 FT. x 17 FT. / 9 SQ. FT./SQ. YD.	=	66.11 SQ. YDS.
F. STA 228+20.83 TO STA 228+46.83, RT 26 FT. x 5 FT. / 9 SQ. FT./SQ. YD.	=	14.44 SQ. YDS.
G. STA 236+08.23 TO STA 236+34.23, LT 26 FT. x 5 FT. / 9 SQ. FT./SQ. YD.	=	14.44 SQ. YDS.
H. STA 236+67.18 TO STA 236+93.18, RT 26 FT. x 5 FT. / 9 SQ. FT./SQ. YD.	=	14.44 SQ. YDS.
I. STA 238+08.13 TO STA 238+34.13, LT 26 FT. x 5 FT. / 9 SQ. FT./SQ. YD.	=	14.44 SQ. YDS.
J. STA 238+67.11 TO STA 239+93.11, RT 26 FT. x 5 FT. / 9 SQ. FT./SQ. YD.	=	14.44 SQ. YDS.
SUBTOTAL	=	247.74 SQ. YDS.
<b>TOTAL OF ITEM 659</b>	=	<b>248 SQ. YDS.</b>

## ITEM 659 WATER

TOTAL PROJECT = 1015 SQ. YDS. (FROM ITEM 659 SEEDING AND MULCHING) X 9 SQ. FT./SQ. YD X 120 GAL/1000 SQ. FT. X 2 APPLICATIONS	=	2,192 GAL.
* 767 SQ YDS. FROM SHEET 28		
<b>TOTAL OF ITEM 659</b>	=	<b>2 M.GAL.</b>

## ITEM 660 REINFORCED SODDING, AS PER PLAN

A. STA 222+53.27, LT (5 FT. x 2 FT. + 6 FT. x 2 FT. + (6 FT. + 7.5 FT.)/2 x 10 FT + (7.5 FT. + 9 FT.)/2 x 10 FT + 9 FT. x 62 FT.) / 9 SQ. FT./SQ. YD.	=	81.11 SQ. YDS.
B. STA 223+47.59, RT (5 FT. x 2 FT. + 6 FT. x 2 FT. + (6 FT. + 7.5 FT.)/2 x 10 FT + (7.5 FT. + 9 FT.)/2 x 10 FT + 9 FT. x 62 FT.) / 9 SQ. FT./SQ. YD.	=	81.11 SQ. YDS.
C. STA 227+54.52, LT (5 FT. x 2 FT. + 6 FT. x 2 FT. + (6 FT. + 7.5 FT.)/2 x 10 FT + (7.5 FT. + 9 FT.)/2 x 10 FT + 9 FT. x 62 FT.) / 9 SQ. FT./SQ. YD.	=	81.11 SQ. YDS.
D. STA 236+08.23, LT (5 FT. x 2 FT. + 6 FT. x 2 FT. + (6 FT. + 7.5 FT.)/2 x 10 FT + (7.5 FT. + 9 FT.)/2 x 10 FT + 9 FT. x 35 FT.) / 9 SQ. FT./SQ. YD.	=	54.11 SQ. YDS.
E. STA 236+65.18, RT (5 FT. x 2 FT. + 6 FT. x 2 FT. + (6 FT. + 7.5 FT.)/2 x 10 FT + (7.5 FT. + 9 FT.)/2 x 10 FT + 9 FT. x 35 FT.) / 9 SQ. FT./SQ. YD.	=	54.11 SQ. YDS.
F. STA 238+36.13, LT (5 FT. x 2 FT. + 6 FT. x 2 FT. + (6 FT. + 7.5 FT.)/2 x 10 FT + (7.5 FT. + 9 FT.)/2 x 10 FT + 9 FT. x 35 FT.) / 9 SQ. FT./SQ. YD.	=	54.11 SQ. YDS.
G. STA 238+95.11, RT (5 FT. x 2 FT. + 6 FT. x 2 FT. + (6 FT. + 7.5 FT.)/2 x 10 FT + (7.5 FT. + 9 FT.)/2 x 10 FT + 9 FT. x 20 FT.) / 9 SQ. FT./SQ. YD.	=	39.11 SQ. YDS.
SUBTOTAL	=	444.77 SQ. YDS.
<b>TOTAL OF ITEM 660</b>	=	<b>445 SQ. YDS.</b>