ITEM 203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION

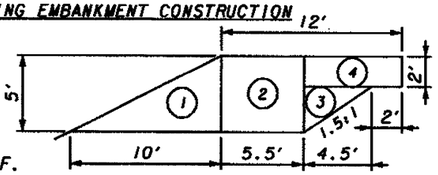
STA. 174+30 TO STA. 177+00=
270 L.F.*(10 FT.)*(21"/12 FT.)=4,725 C.F./27 C.F./C.Y.=175 C.Y.

ITEM 203 - SUBGRADE COMPACTION

STA. 174+30 TO STA. 177+00=
270 L.F.*(10 FT.)=2,700 S.F./9 S.F./S.Y.=300 S.Y.

ITEM 203 - EXCAVATION INCLUDING EMBANKMENT CONSTRUCTION

STA. 174+30 TO 177+00
GROSS AREA

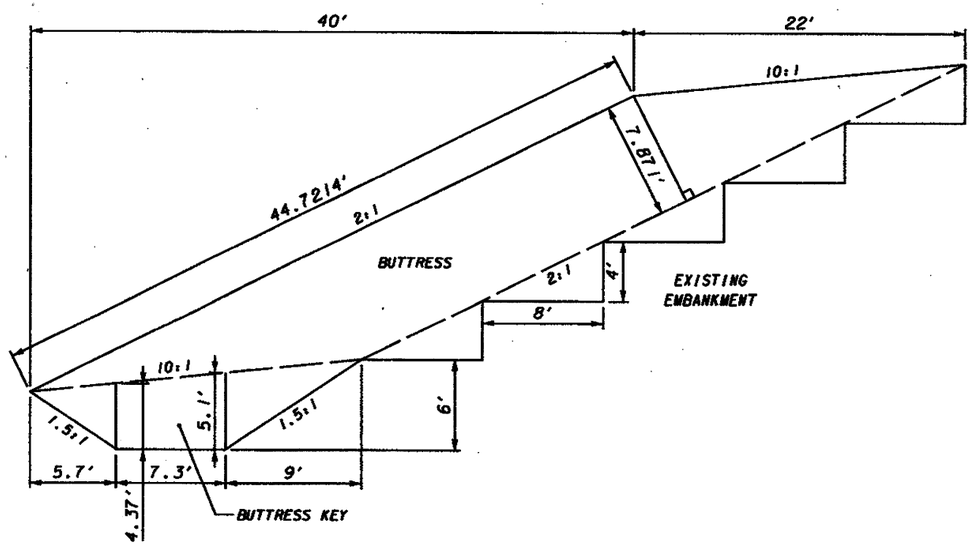


(1) = 5 FT.*10 FT./2=25 S.F.
(2) = 5.5 FT.*5 FT.=27.5 S.F.
(3) = 3 FT.*4.5 FT./2=6.75 S.F.
(4) = 6.5 FT.*2 FT.=13 S.F.

GROSS VOLUME = (25 S.F.+27.5 S.F.+6.75 S.F.+13 S.F.)*270 FT.=19,500 C.F.
= 19,500 C.F. / 27 C.F./C.Y. = 722 C.Y.

SUBTRACT 175 C.Y. FOR ITEM 203, EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION
NET VOLUME = 722 C.Y. - 175 C.Y. = 547 C.Y.

STA. 173+15 TO 178+50 (KEY TRENCH AND BENCHES)
AREA OF KEY TRENCH = 5.7 FT.*4.37 FT./2+7.3 FT.*(4.37 FT.+5.1 FT.)/2+5.1 FT.*9 FT./2=70 S.F.
AREA OF BENCHES = 5*4 FT.*8 FT./2=80 S.F.
VOLUME = 538 FT.*(70 S.F.+80 S.F.)=80,700 C.F.
80,700 C.F./27 C.F./C.Y. = 2,990 C.Y.



ITEM 203 - EMBANKMENT

STA. 172+85 TO 178+85 (BUTTRESS)
CROSS-SECTION AREA = 44.7 FT.*7.87 FT.=352 S.F.
VOLUME STA 172+85 TO 173+15 = 30 FT.*352 S.F./3=3,520 C.F.
VOLUME STA 173+15 TO 178+50 = 538 FT.*352 S.F.=189,400 C.F.
VOLUME STA 178+50 TO 178+85 = 35 FT.*352 S.F./3=4,107 C.F.
(END AREA VOLUMES ARE SIMILAR TO PYRAMID OR CONE: VOLUME=AREA*HEIGHT/3)

VOLUME TOTAL = (3,520 C.F.+189,400 C.F.+4,107 C.F.)/27 C.F./C.Y. = 7,300 C.Y.

ITEM 203 - EXCAVATION NOT INCLUDING EMBANKMENT CONSTRUCTION, AS PER PLAN

STA. 173+50 TO 178+20 (TRENCH DRAIN)

LENGTH	DEPTH	
135 FT.	0 - 35 FT.	135 FT.*35 FT./2*3 FT. = 7,088 C.F.
22 FT.	20 FT.	22 FT.*20 FT.*3 FT. = 1,320 C.F.
350 FT.	35 FT.	350 FT.*35 FT.*3 FT. = 36,750 C.F.
22 FT.	20 FT.	22 FT.*20 FT.*3 FT. = 1,320 C.F.
150 FT.	0 - 35 FT.	150 FT.*35 FT./2*3 FT. = 7,875 C.F.
		54,353 C.F.

CONSTANT WIDTH OF 3 FT.

VOLUME = 54,353 C.F. / 27 C.F./C.Y. = 2,013 C.Y.

ITEM 301 - BITUMINOUS AGGREGATE BASE, PG64-22 (T=7.5")

STA. 174+30 TO STA. 177+00=
270 L.F.*(10.33 FT)*(7.5"/12 FT.)=1,743 C.F./27 C.F./C.Y.=65 C.Y.

ITEM 304 - AGGREGATE BASE, AS PER PLAN (T=12")

STA. 174+30 TO STA. 177+00=
270 L.F.*(11 FT)*(12"/12 FT.)=2,970 C.F./27 C.F./C.Y.=110 C.Y.

ITEM 448 - ASPHALT CONCRETE SURFACE COURSE, TYPE I, PG64-28 (T=1.5")

STA. 174+30 TO STA. 177+00=
270 L.F.*(10 FT.)*(1.5"/12 FT.)=337.5 C.F./27 C.F./C.Y.=12.5 C.Y.

ITEM 448 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I, PG64-22 (UNDER GUARDRAIL) (T=3")

STA. 174+30 TO STA. 177+00=
270 L.F.*(4 FT.)*(3"/12 FT.)=270 C.F./27 C.F./C.Y.=10 C.Y.

ITEM 601 - ROCK CHANNEL PROTECTION, TYPE D, WITH FILTER

CROSS-SECTION AREA = 9 S.F.
VOLUME = 9 S.F. *(20 FT.+ 45 FT.+20 FT.)=765 C.F./27 C.F./C.Y.=28 C.Y.

** ITEM 670 - SLOPE EROSION PROTECTION

END WIDTH AT STA. 173+15=133 FT.
END WIDTH AT STA. 176+00=169 FT.
END WIDTH AT STA. 178+50=169 FT.

AREA=(133 FT.+169 FT.)/2*285 FT.+169 FT.*250 FT.=85,285 S.F.
85,285 S.F./9 S.F./S.Y.=9,476 S.Y.

** ITEM 870 - COMMERCIAL FERTILIZER

WEIGHT=20 POUNDS/1000 S.F.*85,285 S.F./2000 POUNDS/TON=0.85 TON

** ITEM 870 - WATER

VOLUME=120 GAL./1000 S.F.*85,285 S.F./1000 GAL/MGAL=10.2 MGAL

**QUANTITIES CARRIED TO THE GENERAL SUMMARY SHEET 10.
THE REST OF THE QUANTITIES HAVE BEEN CARRIED TO PLAN SHEET 12.

CALCULATIONS

CALCULATED MRS
CHECKED AEN

LAK-90-4.10

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