NOTES:

1. Template with minimum 1'-6" toe cover is based on wall at layout line, and may be used for taking sections perpendicular to roadway center line with offsets.

2. Quantity of structure excavation (EM2) may be calculated either by formulae with average H and θ at wall layout line or by actual area from graphic model using volume from surfaces or end area methods.

3. Earth removal outside the boundaries as defined shall be managed under roadway quantities and paid as unclassified excavation.

4. Use of reinforced soil foundation (RSF) is an option for bridging over weak foundation material.

5. The width (WRSF) and depth (DRSF) if applicable shall be addressed in both the project plans and geotechnical report.

6. Footer excavation is not paid separately but is included in the cost of the work

ABBREVIATIONS USED:

BM_1 = Quantities of Structure Backfill (Class 1) without Shoring (CY/LF)
DH = Design Height (or Avg height for quantity calculations) (Ft)
EM_1 = Quantity of Structure Excavation without Shoring (CY/LF)
H = Height of Excavation at Wall Layout Line (Ft)
MRS = Quantity of Mechanical Reinforcement for Prescribed Soil Zone (CY/LF)
PLG = Pay Length for Geomembrane (Ft)
RL = Reinforcement Length (Ft)

Note to Designer:
This sheet is required as a part of the plan set when used for quantity calculations.

Note to Designer:
Given end of wall to end of wall stations, with wall segment lengths defined, a spreadsheet maybe required for summing up wall related calculations.

SECTION VIEW

θ = Average Angle of Existing Ground Line

Labels in section view: Wall Layout Line, PLG, h, DH, θ, Existing Ground Varies, 1 / ½, 1/1, H Varies with θ, ½ DH, 1'-6", 1'-6", RSF, 1'-0" Typ, DRSF, WRSF, 0.45 DH, 0.25 DH, 4'-0" Min to breakpoint, RL = 0.7 DH

EM_1 BM_1 MRS (Soil Excluded)

CONDITION: H ≥ 1.5 + 4 tan(θ)

$$EM_1 = [(H + h/2)(0.45DH + 0.5(H + h)) - 0.25(H + h)^2 + (H/2 + 1.5)(H) - 0.5(H + 1.5)^2(\frac{\tan\theta}{1+\tan\theta})] / 27$$

$$BM_1 = [3.375 + (RL)(DH)] / 27$$
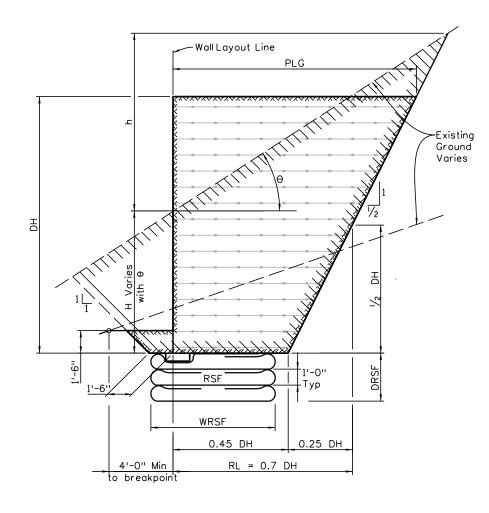$$MRS = [(DH)(RL)] / 27$$
$$PLG = [0.95 \ DH]$$
$$h = (0.45DH + 0.5H)(\frac{\tan(\theta)}{1 - 0.5\tan\theta})$$
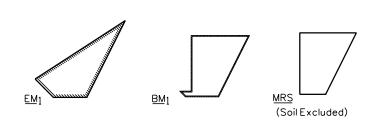$$RSF = [(WRSF)(DRSF)] / 27$$

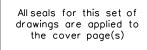Example:
Inputs- DH=16'; Ave. RL=0.7DH=11.2'; H=8'; θ=30°
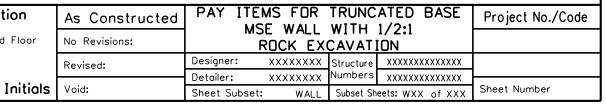Outputs- h=9.09'; EM1=5.63 (CY/Ft); BM1=6.8 (CY/Ft); MRS=6.6 (CY/Ft); PLG=15.2 (Ft/Ft)

Revision Dates: 09-16   10-24

INITIALS | DESIGN | DATE | DETAIL | DATE | QUANTITY | DATE
By
Checked By

All seals for this set of drawings are applied to the cover page(s)

Print Date: $DATE$
File Name: Sheet_B-504-Q3.dgn
Horiz. Scale: Vert. Scale: As Noted
Unit Information   Unit Leader Initials

Sheet Revisions
Date: | Comments | Init.

As Constructed
No Revisions:
Revised:
Initials | Void:

PAY ITEMS FOR TRUNCATED BASE MSE WALL WITH 1/2:1 ROCK EXCAVATION

Project No./Code

Designer: XXXXXXXX   Structure Numbers: XXXXXXXXXXXXXXX
Detailer: XXXXXXXX   XXXXXXXXXXXXXXX
Sheet Subset: WALL   Subset Sheets: WXX of XXX   Sheet Number