Quantity Calculations
Made By JEN Date 6-70
Checked By JM Date 6-72

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

153
390

CUYAHOGA COUNTY
CUY 480-21.40

H&D 8-67
R.H.A 8-67
JEN 6-70
JM 6-72

EARTHWORK			
END AREA		VOLUME	
EXC.	EMB.	EXC.	EMB.

Ahead to Lane B-OBS-E Emb. 1157
Exc. 11
Ahead to Ramp OBS-WB Emb. 1393

Ahead to Ramp OBS-WB
Back to Bedford Freeway

Ahead to Lane B-OBS-E
Back to Bedford Freeway

Match Line
1 on 40
A 870
A 860

160 140

Std. No. I-3B Median Inlet
Sta. 74+49, 1.5' Rt.
T/C 872.53

℄ Lane B-OBS-E
℄ Ramp OBS-WB
LA
℄ Graded Area
Concrete Collar
See Std Const. Drwg MC-4
1 on 2.9
1 on 24
25° Type F Bend
1 on 2
2.67
Std. No. 4 Headwall
Sta. 74+43, 119.5' Rt.
F.I. = 857.00
1 on 48
1 on 40
Centroid Ramp OBS-WB Ahead
867.50
83'-15" Type B Conduit @ 2.93%
865.07
17'-15" Type F Conduit @ 50.00%
857.57
19'-15" Type F Conduit @ 3.0%
8'x4'x1'-6" Rock Channel Protection Type B
Centroid Bedford Fway back
872.49
74+54.29
860.2
Centroid B-OBS-E ahead
S-2

870
860
850

11 2550

(D-39)
CFN 1974772
SLM 21.80, 15
SEE SHEET 90

Emb. $\frac{(716.2-12.25)\times 54.3}{716.2} = 53.4'$

Exc. $\frac{(716.2+124)\times 54.3}{716.2} = 63.7'$

26 5526

Match Line
1 on 33
B 870
B 860

180 160 140

880
LA
℄ Graded Area
1 on 2.7
1 on 2
1 on 33
1 on 48
1 on 2
1 on 2
Centroid
873.42
74+00
858.3
856.0
850
Sta. 73+00

Ditch Exc.$_1$ $\frac{(716.2+129)\times 100}{716.2} = 118.01' \times \frac{19+12}{2(27)} = 67.75$ Cu Yds.

Exc.$_2$ $\frac{(716.2-172)\times 50}{716.2} = 38' \times \frac{0+38}{2(27)} = 26.75$ Cu Yds.

Emb. $\frac{(716.2-10)\times 100}{716.2} = 98.6'$

19 3038
95 11.646
50 3340

All Earthwork Quantities in Particpation Limit III

HOWARD, NEEDLES, TAMMEN & BERGENDOFF
CONSULTING ENGINEERS
KANSAS CITY CLEVELAND NEW YORK

140 120 100 80 60 40 20 20 40 60 80 100 120

BEDFORD FREEWAY STA. 74+00 TO STA. 74+54.29