SUMMARY OF QUANTITIES

FED. AID PROJECT	STATE	FED. RD DIST. No	FISCAL YEAR	55
N.RS.638A	OHIO	10	1934	5.5

S.H. No. 90 LAKE — Sec. G & WILLOUGHBY COUNTY (PART)

STRUCTURES (under 20' span) INCLUDING INLET BASINS

No	Station	Type	Size	Length	Excav. earth Cu.Yds.	Channel Exc. Cu.Yds.	Excav. shale Cu.Yds.	Corr. I.P. Lin.Ft. 48"	12"	24"	36"	C.I.P. Lin.Ft. 16"	24"	30"	1-5½ Conc. Cu.Yds.	1-6½	Reinf. Steel Lbs.	Mas. Rem. Cu.Yds.	Mas. Reset Cu.Yds.	Inlet Basins	Folded Copper Lin.Ft.	Water-Proof Sq.Yds.	2" Pipe Rail Rem.+reset	Rem. Cu.Yds.	Con. Parapet Rem. Cu.Yds.	Pipe rem. Corr. 12"	C.I.P. 12"	V.P. 6"	V.P.	Bridge No.
1	17+50	Rdwy. Culv.	24"	24'	4						24				2.8		64													
2	6+83	" "	36"	48'	35							48			2.4		44													
3	11+90	Conc. box culv.	14'×10'	58.8	251	143									190.6		30,000				55									
4	27+50	Rdwy. Culv.	36"	40'	35							40			4.8		88	6.0												
5	38+0	Corr. I.P. on grillage	48"	68'	2			68																						
6	46+10	" " "	48"	68'	5			68																						
7	52+90	Rdwy. culv.	12"	50'	17				50						1.8		59													
8	64+23	Conc. box (ext.)	8'×5'	9'-6"	107										20.7		1124	5.3	5.3				15.5		1.5					
	68+0	I.B.																		1										
	71+0	I.B.																		1										
	74+0	I.B.																		1										
	77+0	I.B.																		1										
9	97+53	C.I.P. culv.	15"	44'	15							44			1.7		47									20	4			
10	106+50	" "	24"	44'	3								44		2.8		64	21												
11	117+0	" "	16"	42'	13							42			1.7		47									30				
12	132+78	" "	30"	44'	6									44	3.8		76	19												
13	145+25	" "	16"	44'	10							44			1.7		47													
14	183+62	" "	16"	50'	9							50			1.7		47											38		
15	201+40	Arch Culv. 8'	16'	75	328	1181	153								234	65	12,083				61.0	68.3								
Totals					840	1324	153				136	50	24	88	180	44	44	470.8	65	43790	51.3	5.3	4	116.0	68.3	15.5		1.5	50	4	38	

Bridge No. — Remarks

Extend exist. 24"×28" C.I.P. culv. 12' L.+12' R. with Std. 24° Rdwy. culv. Hw. R.+L.	LA 174-003
Build Std. 36"×48° Rdwy. Culv. Hw. on L. connect to exist. culv. on R. open channel on L.	LA 174-013
Build Std. 14'×10'×58.8' Conc. Box Culvert open new channel to L.+R.	LA 174-023
Rem. exist. mas. structure + build Std. 36"×40° Rdwy. culv. Hw. R.+L. open channel on L.	LA 174-052
Lay 48"×68' Corr. I.P. on grillage	LA 174-072
Lay 48"×68' Corr. I.P. on grillage	LA 174-087
Remove exist. Corr. Pipe + build Std. 12'×50' Rdwy. Culv. Hw. R.+L.	LA 174-100
Rem. exist. parapet; extend east 8'5 Conc. box 3'-6" to L. Open channel on L. Remove +	LA 174-122
Build State Std. No 1 Inlet Basin 19' R. [Reset 2" Pipe Rail + pres. Riprap wall]	
" " " " " " 14' R.	
" " " " " " 14' R.	
" " " " " " 14' R.	
Rem. exist. 12"×20° Corr. + 12"×4 V.P. + build Std. 16'×44' C.I.P. Culv. Hw. R.+L. open outlet on R.	LA 174-185
Rem. exist. masonry struc. + build 24"×44' C.I.P. Culv. Hw. R.+L. open outlet on L.	LA 174-202
Remove exist. 12"30° Corr. I.P. + build Std. 16'×42' C.I.P. Culv. Hw. R.+L.	LA 174-222
Remove exist. masonry + build Std. C.I.P. Culv. with Hw. R.+L. 30"×44'	LA 174-251
Build Std. 16'×44' Cast Iron Pipe culvert with Hw. R.+L.	LA 174-275
Remove 6'×38 V.P. + build Std. 16'×50' C.I.P. Culv. with Hw. R.+L.	LA 174-348
Build Std. Conc. Arch Culv. Type "B" Open channel on ℄ of arch [illegible]	LA 174-381

EXCAVATION & EMBANKMENT

From Sta.	To Sta.	Excav.	Emb	Emb+25%	Waste	Borrow
0+10.48	9+0	1697	1438	1798		101
9+0	11+05	625	413	516	109	
11+05	19+85	8164	7192	8990		826
19+85	24+0	846	325	406	440	
24+0	46+00	7734	5827	7284	450	
46+00	53+23	1815	1985	2406		591
53+23	64+23	1256	594	742	514	
64+23	67+13	832	402	503	329	
67+13	71+39	693	540	675	18	
71+39	77+98	1276	1020	1275	1	
77+98	80+77.62	206	158	197	9	
81+62.50	92+00	1266	479	599	667	
92+0	99+0	547	426	532	15	
99+0	106+75	853	411	514	339	
106+75	116+0	1427	693	866	561	
116+0	122+75	567	441	551	16	
122+75	127+0	456	351	439	17	
127+0	128+87.5	178	122	153	25	
128+87.50	134+0	645	418	522	123	
134+0	146+75	2269	1779	2224	45	
146+75	157+25	1592	902	1128	464	
157+25	162+30	325	257	321	4	
162+30	168+62.50	429	337	421	8	
168+62.5	171+02.5	386	307	384	2	
171+02.5	189+0	9639	6930	8663	976 ℄ (see p. 9 for disposal)	
189+0	194+63	503	402	503	0	
194+63	212+53.83	14937	22081	27601		12,664
Totals		61163	56170	70213	5132	14,182

SUMMARY OF DRIVES (new)

Station	R or L	Corr. I.P. Lin.Ft. 8"	12"	18"
4+15	L	20		
26+40	R			20
51+20	R	20		
51+70	R	20		
52+80	R	20		
67+40	L	20		
77+40	R	20		
83+52	L			20
97+74	L			20
112+11	L			20
114+97	L			60
118+21	R			20
120+93	R			20
124+10	L			20
135+43	R			20
139+67	R			20
164+0	L			20
167+57	L			20
183+73	R			20
185+12	L			20
185+31	R			20
190+18	L	20		
190+91	R	20		
192+54	L	20		
193+41	R		20	
196+0	L			20
Total		180	340	40

TREES REMOVED

No	Sta.	Size + Kind	Ft. R. or L.	No	Sta.	Size + Kind	Ft. R. or L.
1	0+80	40" M	22' R	67	120+34	12" App.	10' L
2	2+86	12" M	22' L	68	130+09	14" Elm	23' R
3	6+86	12" oak	13' R	69	131+50	12" "	16' L
4	7+31	14" Hem.	4' L	70	134+66	24" M.	29' R
5	7+52	10" Pop.	21' R	71	138+33	15" M.	21' L
6	7+57	9" Ash	12.5' R	72	139+13	14" Locust	17' L
7	7+68	9" Beech	2' L	73	139+26	12" "	16' L
8	7+68	10" "	10' L	74	139+48	20" "	24' L
9	7+72	9" M	11' L	75	139+54	14" "	22' L
10	9+22	12" M	22' R	76	139+81	12" "	16' L
11	9+40	12" M	4' R	77	139+81	12" "	18' L
12	9+89	10" Cherry	3' L	78	146+74	12" "	22' R
13	10+52	15" M	14' L	79	150+48	28" "	10' R
14	12+69	30" M	15' L	80	150+78	36" M.	6' R
15	12+80	30" M	12' R	81	151+12	14" "	2' R
16	13+56	40" Ash	20' R	82	151+71	28" Locust	2' L
17	13+65	12" M	13' R	83	151+80	20" Pear	11' L
18	13+78	15" Ash	27' L	84	152+32	12" M.	4' L
19	13+80	15" oak	21' L	85	152+77	10" M.	2' L
20	13+78	9" M.	32' R	86	153+55	14" W. Ch.	11' L
21	13+80	12" M.	30' R	87	160+75	36" Chest.	10' L
22	13+82	15" M.	28' R	88	166+48	15" M.	16' L
23	20+85	18" App.	8' R	89	166+70	15" "	17' L
24	22+06	15" App.	19' L	90	167+40	20" "	4' L
25	23+74	15" App.	7' L	91	167+99	26" "	11' L
26	29+65	20" App.	20' L	92	168+18	9" App.	11' R
27	36+58	10" Pop.	16' L	93	168+49	14" "	5' L
28	37+22	8" Will.	18' R	94	168+78	9" "	2' R
29	38+40	24" Elm	6' L	95	169+83	12" "	9' R
30	45+12	18" Ash	6' R	96	169+98	9" "	16' L
31	45+18	9" Will.	℄	97	169+35	9" "	7' L
32	45+34	20" Elm	17' L	98	170+41	10" "	12' R
33	46+55	12" Will.	10' R	99	175+48	9" "	3' R
34	46+62	36" Pop.	21' R	100	175+52	9" ch.	12' R
35	46+48	10" Will.	24' L	101	176+57	15" M.	9' L
36	46+52	10" "	19' L	102	179+76	9" Ch.	17' L
37	46+48	9" "	8' L	103	180+23	16" Elm.	26' L
38	46+89	9" Elm	9' R	104	180+21	14" Elm	20' R
39	46+91	9" "	11' R	105	193+11	9" pear	15' L
40	46+80	10" Will.	8' L	106	193+13	12" ch.	15' L
41	46+80	12" "	5' L	107	202+06	15" elm	23' R
42	47+30	10" Elm	13' R	108	202+89	12" pop.	23' R
43	47+37	10" "	13' R	109	202+91	14" pop.	23' R
44	47+23	9" oak	17' L	110	202+93	12" pop.	23' R
45	47+23	4.8" M	℄	111	203+06	10" elm.	17' R
46	47+29	14" M	10' L	112	203+19	10" oak.	5' R
47	66+39	12" oak	10' R	113	205+24	10" oak	23' R
48	67+10	24" Beech	21' R	114	205+25	10" oak	℄
49	67+81	9" Cherry	14' R	115	205+29	10" oak	17' R
50	67+87	12" Oak	18' R	116	206+25	9" loc.	24' R
51	68+15	10" Ash	18' R	117	206+48	10" loc.	35' R
52	68+31	10" Ash	18' R	118	206+75	5" pop.	30' R
53	68+72	9" "	15' R	119	207+15	9" ash	58' R
54	69+03	10" "	13' R	120	207+95	10" oak	20' R
55	69+96	9" oak	26' R	121	208+20	16" oak	55' R
56	74+09	15" Ash	14' L	122	209+95	12" wal.	21' R
57	75+17	10" M.	17' R	Total = 122 trees			
58	96+70	12" App.	20' L				
59	97+20	15" "	20' L				
60	119+53	16" "	24' L				
61	77+97	12" ash	14' R				
62	78+41	15" Wal.	14' R				
63	78+68	12" app.	17' R				
64	78+92	15" ch.	17' R				
65	79+25	12" ash	16' R				
66	79+51	12" M.	19' R				

SUMMARY OF PAVEMENT

From Sta.	To Sta.	For	Sq. Yds.	Additions	Deductions
0+10.48	212+53.83	entire length 20' width	47,207.4		
0+13.30	2+13.05	Curve		58.60	
8+80.37	17+84.40	"		251.20	
41+34.64	45+32.74	"		100.40	
47+95.85	51+02.53	"		72.20	
69+33.43	73+30.48	"		137.50	
74+48.28	76+54.70	"		57.00	
77+67.68	79+43.04	"		45.30	
107+10.49	111+99.68	"		77.45	
123+04.09	126+53.27	"		43.86	
144+23.35	154+72.69	"		198.28	
196+97.18	210+60.06	"		214.66	
211+13	212+53.83	Intersection		339.00	
80+77.62	81+62.50	Exist. pave			188.60
81+62.50	82+04.00	Intersection		71.30	
Totals			47,207.4	1721.65	188.60
			+ 1721.65	Note: 12 sq. Yds.	
			48,929.05	3" thick = 1 Cu. Yds.	
			− 188.60		
Grand Total			48,740.45 Sq. Yds. = 4062 Cu. Yds.		

GUARD RAIL

From Sta.	To Sta.	R or L	Lin.Ft.
1+25	1+81	R	56
3+60	4+56	R	96
6+50	7+46	R	96
7+40	7+88	L	48
10+60	13+80	L	320
10+75	13+63	R	288
36+25	38+57	L	232
36+70	38+46	R	176
41+50	47+34	R	584
44+50	47+22	L	272
70+70	77+50	L	680
177+34	180+70	L	336
177+34	178+54	R	120
179+10	180+70	R	160
199+00	212+04	L	1304
199+00	204+04	R	504
Total			5272

SUMMARY OF V.P. SEWER

From Sta.	To Sta.	12" L or R Lin. Ft.	18" Conc. L or R Lin. Ft.	1-5½ Con. Cu.Yds.	Reinf. Steel Lbs.
64+10	77+0	1290 R		0.7	20
178+0	179+50		150 R	2.0	52
Totals		1290	150	2.7	72

SUMMARY OF PIPE REMOVED (DRIVES)

Station	R or L	6" V.P. Lin.Ft.	8" V.P. Lin.Ft.	6" Corr. Lin.Ft.	12" Corr. Lin.Ft.
83+52	L	40			
83+52	R				40
97+74	L		36		
104+90	R				20
114+97	L			60	
138+42	L				20
Totals		40	36	60	80

SUMMARY OF PIPE RELAID (DRIVES)

Station	R or L	6" Corr. I.P. Lin.Ft.	12" Corr. Lin.Ft.	Remarks
83+52	R		40	From same sta.
99+62	L	20		From 114+97 L
100+73	L	20		" " " "
104+90	R		20	From same sta.
118+31	L	20		From 114+97 L
138+42	L		20	From same sta.
Totals		60	80	

SUMMARY OF RDWY. DRAINAGE

From Sta.	To Sta.	Lin.Ft. 6"	R or L
98+0	102+60	460	20' L
At direction of Engr.		1540	
Total		2000	

BERMS (both sides)

From Sta.	To Sta.	For	Lin.Ft.	Remarks
0+10.48	212+53.83	Entire len.	21,243	85' deductions for pavement
Total			21,158	

TOTAL OF QUANTITIES (using Concrete Arch)

ROADWAY

E-1 61163 Cu.Yds. Roadway Excavation (Unclassified)
E-4 14182 Cu.Yds. Borrow ~~(unclassified)~~ [Contractor to furnish]
E-5 21,243 Lin.Ft. Finishing shoulders, slopes & ditches (both sides)
I-15 5,272 Lin.Ft. Guard Rail, Type S-C
I-2 1,290 Lin.Ft. 12" V.S.P. Storm Sewers
I-2 150 Lin.Ft. 18" V.S.P. enc. " "
S-1 2.7 Cu.Yds. 1-5½ Concrete (Headwalls on sewers)
S-4 72 Lbs. Reinf. Steel (" ")
E-9 122 each tree removed and disposal
I-1 180 Lin.Ft. 8" Pipe for Driveways
I-1 340 Lin.Ft. 12" " " "
I-1 40 Lin.Ft. 18" " " "
I-1 38 " 8" Perforated corr. iron pipe.
I-6 40 Lin.Ft. 6" V.P. removed and stored
I-6 36 Lin.Ft. 8" V.P. " " "
I-6 60 Lin.Ft. 6" Corr. I.P. taken up and reloid
I-6 80 Lin.Ft. 12" Corr. I.P. taken up and reloid

I-17 100 Cu.Yds. Traffic Bound Side Approaches
I-14 700 Lin.Ft. Conc. Gutter Type "2
I-14 250 " " Circular Outlet Gutter (Conc.)

I-3 2000 Lin.Ft. 6" (Drain Tile) Roadway Drainage.

PAVEMENT

T-10 4062 Cu.Yds. Traffic Bound Surface Course

STRUCTURES (under 20' span)

E-2 840 Cu.Yds. Excavation (unclassified)
E-3 1324 " Channel excavation
E-2 153 " " Excavation (shale)
S-1 470.5 Cu.Yds. 1-5½ Concrete for walls
S-1 65 Cu.Yds. 1-6½ Concrete for footings
S-4 43,790 Lbs. Reinf. Steel
S-9 116.4 Lin.Ft. 12"·24 oz. Folded copper joint
S-3 68.3 Sq.Yds. Type "B" Waterproofing
S-27 50 Lin.Ft. 12" Pipe
S-27 88 Lin.Ft. 36" "
S-27 136 Lin.Ft. 48" Corr. I.P. (including grillage) 12 Gauge
S-27 24 Lin.Ft. 24" Pipe

S-27 180 Lin.Ft. 16" Cast iron pipe
S-27 44 Lin.Ft. 24" " " "
S-27 44 Lin.Ft. 30" " " "
S-22 51.3 Cu.Yds. Masonry Removed
Special 5.3 Cu.Yds. Masonry Reset
I-8 4 Inlet Basins State Std. No I-8-I No. 1
Special 15.5 Lin.Ft. 2" Galv. Pipe Rail removed & reset
S-22 1.5 Cu.Yds. Concrete Masonry removed
I-6 50 Lin.Ft. 12" Corr. I.P. removed and stored
" 4 Lin.Ft. 12" V.P. " " "
" 38 Lin.Ft. 6" V.P. " " "