

## SUMMARY OF QUANTITIES PAVEMENT CALCULATIONS

### LINE DATA

BEGIN PROJECT STATION 0+29.37  
 END PROJECT STATION 8+50  
 GROSS LENGTH OF PROJECT = 820.63 LIN. FT.  
 NO ADDITION OR DEDUCTION  
 NET LENGTH OF PROJECT = 820.63 LIN. FT. = 0.155 MILES.

BEGIN WORK STATION 0+29.37  
 END WORK STATION 8+50  
 NET LENGTH OF WORK = 820.63 LIN. FT.  
 NO ADDITION OR DEDUCTIONS  
 NET LENGTH OF WORK = 820.63 LIN. FT. = 0.155 MILES.

WILLOUGHBY VILLAGE  
 BEGIN WORK STATION 0+29.37  
 END WORK STATION 6+93.63  
 NET LENGTH OF WORK = 664.26 LIN. FT. = 0.125 MILES.

WILLOUGHBY TOWNSHIP  
 BEGIN WORK STATION 6+93.63  
 END WORK STATION 8+50  
 NET LENGTH OF WORK = 156.37 LIN. FT. = 0.029 MILES.

### PAVEMENT CALCULATION

9'-7'-7'-9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT, ITEM T-71  
 STA. 1+77 TO STA. 8+50 = 673 LIN. FT.  
 673 x 20 ÷ 9 = 1495.5 Sq. Yds.  
 EXTRA AREA (SHEET NO. 6) = 66.5 Sq. Yds.  
 EXTRA AREA CURVE WIDENING  
 TRANSITION, STA. 2+25.57 TO 3+75.57 = 31.1 Sq. Yds.  
 4' WIDENING, STA. 3+75.57 TO 6+25.85 = 109.5 Sq. Yds.  
 TRANSITION, STA. 6+25.85 TO 7+75.85 = 31.1 Sq. Yds.  
 SUB TOTAL 171.7 Sq. Yds.  
 TOTAL 9'-7'-7'-9" REINFORCED CONCRETE PAVEMENT = 1733.7 Sq. Yds.

WILLOUGHBY VILLAGE (9'-7'-7'-9" REINF. CONCR. PAVT. ITEM T-71)  
 STA. 1+77 TO STA. 6+93.63 = 516.63 LIN. FT.  
 516.63 x 20 ÷ 9 = 1148.0 Sq. Yds.  
 EXTRA AREA (SHEET NO. 6) = 66.5 Sq. Yds.  
 EXTRA AREA CURVE WIDENING  
 TRANSITION, STA. 2+25.57 TO 3+75.57 = 31.1 Sq. Yds.  
 4' WIDENING STA. 3+75.57 TO 6+25.85 = 109.5 Sq. Yds.  
 TRANSITION STA. 6+25.85 TO 6+93.63 = 20.4 Sq. Yds.  
 SUB TOTAL = 161.0 Sq. Yds.  
 TOTAL 9'-7'-7'-9" REINF. CONCR. PAVT., WILLOUGHBY VILL. = 1375.5 Sq. Yds.

WILLOUGHBY TOWNSHIP (9'-7'-7'-9" REINF. CONCR. PAVT. ITEM T-71)  
 STA. 6+93.63 TO STA. 8+50 = 156.37 LIN. FT.  
 156.37 x 20 ÷ 9 = 347.5 Sq. Yds.  
 EXTRA AREA CURVE WIDENING  
 TRANSITION STA. 6+93.63 TO STA. 7+75.85 = 10.7 Sq. Yds.  
 TOTAL 9'-7'-7'-9" REINF. CONCR. PAVT., WILLOUGHBY TOWNSHIP = 358.2 Sq. Yds.

STORM SEWER			
SHEET No.	ITEM No.	RESET C.B.	STD. 1-2A C.B.
4	1E-3E	2	1
TOTAL		2	1

PAVEMENT REMOVAL		
SHEET No.	REMOVAL & DISPOSAL EXIST. PAVEMENT	Sq. Yds.
WILLOUGHBY VILL.	4	587.0
WILLOUGHBY TOWN.	4	340.0
TOTAL		927.0

GUARD RAIL			
SHEET No.	ITEM No.	REMOVE, STORE & REBUILD EXIST. GUARD RAIL	LN. FT.
WILLOUGHBY VILLAGE	4	1-G	249
WILLOUGHBY TOWNSHIP	4	2-G	197
TOTAL			446

PIPE UNDERDRAINS								
SHEET No.	C.M.P. ITEM 1-4	PERFORATED 12"		C.M.P. SPECIALS ITEM 1-5		STD. REINF. CONCR. HEADWALL		
		LN. FT.	EACH	LN. FT.	EACH	EXCAV. CU. YDS.	STEEL LBS.	CLASS C CONCR. CU. YDS.
WILLOUGHBY VILL.	5	732	198	10	29	1.5	20	0.7
WILLOUGHBY TOWN.	5	168	358	7	36	1.5	20	0.7
TOTAL		900	556	10	36	1.5	20	0.7

EARTHWORK						
SHEET No.	* EXCAVATION			EMBANKMENT		
	OVERBURDEN	SHALE	GRANULATED SLAG COMPACTED	EMB.	EMB. +22%	
WILLOUGHBY VILL.	4	9111	170 G	563	10047	12,257
WILLOUGHBY TOWN.	4	6755	612	228	7772	9482
TOTAL		15,866	2318	791	17,819	21,739

\* EXCAVATED MATERIAL THAT COMPLIES WITH APPROVED EMBANKMENT MATERIAL AS DESCRIBED BY SECTION E1.05 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS IS TO BE STORED AND USED AS EMB. MATERIAL.

## GENERAL SUMMARY

LAKE COUNTY  
LAK-84-5.86-5.97

ITEM	QUANTITIES			UNIT	DESCRIPTION
	WILLOUGHBY VILLAGE	WILLOUGHBY TOWNSHIP	TOTAL		
E-1	10817	7367	18184	CU. YDS.	ROADWAY EXCAVATION
E-2		2	2	CU. YDS.	EXCAVATION FOR STRUCTURES.
E-4	563	228	791	CU. YDS.	BORROW USING GRADE "B" WATER GRANULATED BLAST FURNACE SLAG, S.S.M-10312
E-4	1440	2115	3555	CU. YDS.	BORROW.
E-8	587	340	927	SQ. YDS.	REMOVAL AND DISPOSAL OF EXISTING PAVEMENT.
E-11	50	40	90	M. GALLONS	WATER
I-4	732	168	900	LN. FT.	6" PIPE UNDERDRAINS. SEC. M-G.4 (h) As Per Plan
I-4	198	358	556	LN. FT.	12" PIPE UNDERDRAINS SEC. M-G.4 (b)
I-5	10		10	EACH	6" PIPE SPECIALS FOR UNDERDRAINS
I-5	29	7	36	EACH	12" PIPE SPECIALS FOR UNDERDRAINS
I-8	1		1	EACH	STANDARD NO. 1-2A. CATCH BASIN.
I-8	2		2	EACH	CATCH BASINS ADJUSTED TO GRADE
I-15	249	197	446	LN. FT.	GUARD RAIL REMOVED AND REBUILT.
S-1		0.7	0.7	CU. YDS.	CLASS "C" CONCRETE FOR HEADWALL
S-4		20	20	LBS.	REINFORCING STEEL
L-9	4089	955	5044	SQ. YDS.	SEEDING AND PROTECTING TYPE "A"
L-9	0.37	0.09	0.46	TONS.	COMMERCIAL FERTILIZER (10-G-4)
L-9	0.55	0.13	0.68	TONS.	AGRICULTURAL HYDRATED LIME
L-10	40		40	SQ. YDS.	SODDING
T-71	1376	358	1734	SQ. YDS.	9'-7'-7'-9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT

WATER 17,819 x 5 = 89095 GALS. USE 90.0 M. GALS.

### NOTES

ALL PUMPING OPERATIONS AS DIRECTED BY THE ENGINEER SHALL BE INCLUDED IN THE UNIT BID FOR ITEM E-1 ROADWAY EXCAVATION. TRAFFIC DURING CONSTRUCTION IS TO BE DETOURED AND MAINTAINED OVER ROUTES AS INDICATED BY ARROWS ON THE LOCATION MAP OF TITLE SHEET #1

SEEDING AND PROTECTING ROADWAY AREAS. ITEM L-9 TYPE "A".  
 SEEDING AREAS SHALL BE PERFORMED BETWEEN LINES FIVE FEET OUTSIDE WORK LIMITS AS SHOWN ON THE CROSS SECTIONS OR TO THE RIGHT OF WAY. USE THE FOLLOWING GRASS MIXTURE: - 35% KENTUCKY BLUE GRASS, 15% Alsike Clover, 15% PERENNIAL RYE, 25% YELLOW SWEET CLOVER, 10% HAILEY VETCH. SEED SHALL BE SOWN AT THE RATE OF 4 LBS. PER 1000 SQ. FT.  
 COMMERCIAL FERTILIZER TO BE APPLIED AT THE RATE OF 20 LBS. PER 1000 SQUARE FEET TO ALL AREAS TO BE SEED OR SODDED. COMMERCIAL FERTILIZER (10-G-4) ITEM L-9.  
 AGRICULTURAL HYDRATED LIME ITEM L-9  
 AGRICULTURAL HYDRATED LIME SHALL BE APPLIED AT THE RATE OF 30 LBS. PER 1000 SQUARE FEET TO ALL AREAS TO BE SEED OR SODDED.

HAND FINISHING WILL BE PERMITTED AT INTERSECTIONS OR OTHER AREAS WHERE IT IS NOT PRACTICAL TO USE A FINISHING MACHINE ACCORDING TO SECTION T-11.211 OF GENERAL SPECIFICATIONS.  
 THE CONCRETE PAVEMENT SHALL BE PLACED AND FINISHED IN SINGLE LANE WIDTHS OF 10 FEET TO 12 FEET.  
 PAVEMENT JOINTS ARE TO BE CONSTRUCTED ACCORDING TO STANDARD JOINT DRAWINGS FURNISHED WITH THE PLANS.

ROADSIDE IMPROVEMENT					
SHEET No.	ITEM L-9	ITEM L-10	ITEM L-9		
			Sq. Yds.	Lbs.	Sq. Yds.
WILLOUGHBY VILL.	4	4089	736	1104	40
WILLOUGHBY TOWN.	4	955	174	261	
TOTAL		5044	910	1365	40