

## ESTIMATED QUANTITIES

PAY ITEM	PAY UNIT	VDOT PART.	OWNER PART.	TOTAL	TOTAL STAGE I
MOBILIZATION	LS	100%	0%	1	1
CLEARING AND GRUBBING	LS	67%	33%	1	1
⊗ REGULAR EXCAVATION	CY	35485	70630	110600	81,833
CONSTRUCTION SURVEYING	LS	67%	33%	1	1
15" CONC. PIPE	LF	169	1056	1225	1,157
18" CONC. PIPE	LF	104	180	284	260
24" CONC. PIPE	LF	204	638	842	532
30" CONC. PIPE	LF	-	148	148	48
36" CONC. PIPE	LF	-	1164	1164	444
42" CONC. PIPE	LF	-	446	446	446
48" CONC. PIPE	LF	-	648	648	24
54" CONC. PIPE	LF	-	180	180	0
15" END SECTION, ES-1	EA	-	1	1	0
18" END SECTION, ES-1	EA	2	2	4	4
24" END SECTION ES-1	EA	-	3	3	1
30" END SECTION ES-1	EA	-	1	1	0
36" END SECTION ES-1	EA	-	1	1	0
54" END SECTION ES-1	EA	-	1	1	0
DI - 3A	EA	-	1	1	1
DI - 3B 8'	EA	-	2	2	1
DI - 3B 10'	EA	-	4	4	3
DI - 3B 12'	EA	-	3	3	4
DI - 3B 14'	EA	-	4	4	4
DI - 3B 18'	EA	-	1	1	0
DI - 3B 20'	EA	-	1	1	0
DI - 3C 6'	EA	-	2	2	0
DI - 3C 12'	EA	-	1	1	0
DI - 4BB 12'	EA	-	1	1	0
DI - 4BB 14'	EA	-	1	1	0
DI - 4C 12'	EA	-	1	1	1
DI - 4CC 12'	EA	-	1	1	0
DI 7A	EA	-	1	1	1
48"X30" TEE	EA	-	1	1	0
PAVED DITCH, STD PG - 2A TYPE E	SY	-	16	16	16
MANHOLE MH - 1 OR 2	LF	-	78.1	78.1	42.3
MANHOLE FRAME & COVER MH - 1	EA	-	6	6	2
CLASS A3 CONC.(END WALLS)	CY	-	5.9	5.9	0
EROSION CONT. TREATMENT, EC-1 TYPE A	TON	3.4	12.0	15.4	15.4
SOIL STABILIZATION MAT, EC-3 TYPE A	SY	-	266	266	0
CEMENT STABILIZED AGGREGATE BASE MAT'L.	TON	7233	15871	23104	13961
* HYDRAULIC CEMENT (4% BY WEIGHT)	TON	289	635	924	561
AGGR. BASE MAT'L TY I NO.21 OR 21A	TON	-	233	233	1834
BASE COURSE BIT. CONC. TY B-3	TON	4914	9010	13924	10016
LIQUID BITUMINOUS MATERIAL	GAL	-	5	5	5
BITUMINOUS CONC. TY S-5	TON	-	77	77	77
BITUMINOUS CONC. TYPE S-10 MODIFIED	TON	1229	2595	3824	2746
MAINTENANCE OF TRAFFIC	LS	20%	80%	100%	100%
⊗ MEDIAN STRIP STD MS-2 (16')	LF	-	246	246	246
⊗ MEDIAN STRIP STD MS-2 (VAR WIDTH)	LF	-	174	174	174
⊗ CONCRETE CURB STD CG-2	LF	-	740	740	740
⊗ CONC. COMB CURB AND GUTTER STD CG-6	LF	-	15081	15081	9465
⊗ TOPSOIL CLASS "A" 2"	AC	3.2	6.4	9.6	5.3
REGULAR SEEDING	LB.	438	877	1315	720
OVERSEEDING	LB.	139	276	415	229
FERTILIZER (10-20-10)	TON	4.6	10.6	15.2	9.0
LIME	TON	12.2	24.4	36.6	19.8
TEMPORARY FILTER BARRIER	LF	2670	5270	7940	5295
PAVEMENT MESSAGE MARKING ELONGATED ARROW SINGLE	EA	3	10	13	13
DRY RIP RAP CLASS I 18"	SY	-	354	354	354

## GENERAL NOTES

## GRADING

6-1 THE GRADE LINE DENOTES TOP OF FINISHED PAVEMENT UNLESS SHOWN OTHERWISE ON TYPICAL SECTIONS OR PLANS.

6-4 THE COST OF REMOVAL OF CONCRETE ITEMS SUCH AS THOSE LISTED BELOW SHALL BE INCLUDED IN THE PRICE BID FOR REGULAR EXCAVATION: SIDEWALK, CURB, GUTTER, WALLS, STEPS, SMALL FOOTINGS, BUILDING FOUNDATIONS AND FLOORS, AND BLOCK OR BRICK MASONRY ITEMS.

## DRAINAGE

D-1 THE LOCATIONS OF ALL DRAINAGE STRUCTURES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. THE "M" DIMENSIONS SHOWN ON THE PLANS FOR DROP INLETS AND THE "L.F." DIMENSIONS SHOWN FOR MANHOLES ARE APPROXIMATE.

D-2 IF, DURING CONSTRUCTION, THE CULVERT INVERT ELEVATIONS SHOWN ON THE PLANS ARE FOUND TO DIFFER SIGNIFICANTLY FROM THE ELEVATIONS OF THE STREAM OR SWALE IN WHICH THE CULVERT IS TO BE PLACED, THE ENGINEER MUST CONFER WITH THE PROJECT DRAINAGE DESIGNER BEFORE INSTALLING THE CULVERT.

D-8 ALL PIPE ON THIS PROJECT SHALL BE CONCRETE. FOR STRENGTH, SHEET THICKNESS, OR CLASS DESIGNATION; AVAILABLE SIZES; HEIGHT OF FILL LIMITATIONS; AND METHOD OF BEDDING REQUIRED FOR A PARTICULAR HEIGHT OF COVER, SEE STANDARD DRAWING PC-1 AND PS-1.

D-11 IF, DURING CONSTRUCTION, THE SLOPE UPON WHICH THE PLANS DESIGNATE RIPRAP TO BE PLACED IS FOUND TO BE COMPRISED OF SOLID ROCK OR CLOSELY CONSOLIDATED BOULDERS WHOSE SOUNDNESS, SIZE, AND WEIGHT EQUAL OR EXCEED THE SPECIFICATIONS FOR THE PROPOSED RIPRAP, THE RIPRAP MAY BE DELETED BY THE ENGINEER.

## PAVEMENT

P-2 THE MATERIALS LISTED BELOW ARE TO BE PAID ON A TONNAGE BASIS ON THIS PROJECT. THE THEORETICAL TONNAGE SHOWN ON THESE PLANS IS BASED ON THE WEIGHT SHOWN HEREON. THE WEIGHT WILL VARY IN ACCORDANCE WITH THE SPECIFIC GRAVITY OF THE AGGREGATES AND THE ASPHALTIC CONTENT OF THE MIX ACTUALLY USED TO SECURE THE DESIGN DEPTH. THE WEIGHT OF THE ASPHALT CONCRETE IS BASED ON 95% OF THEORETICAL MAXIMUM DENSITY. (FOR RATES SEE ITEM LD-(R174))

P-3 \*ASPHALT CONCRETE TYPE B-3 AT 114 LBS. PER SQ. YD. PER INCH OF DEPTH.  
AGGREGATE BASE MATERIAL TYPE I NO.21 OR 21A AT 145 LBS. PER CU. FT. (PLUS 6% MOISTURE CORRECTION).

\*THIS APPLIES ONLY TO THE BASE MIXES (B-3, ETC.).

## GRADING SUMMARY (ROADWAYS)

	REGULAR EXCAVATION		TOTAL	FILL
	PARTICIPATION			
	VDOT	OWNER		
THIRLANE ROAD	-	2232	2232	2223
KENWORTH ROAD	2800	-	2800	67
VALLEYPONTE PARKWAY	949	709	49,658	16,826
VALLEYPARK DRIVE	1013	8794	9,807	34,458
RESEARCH ROAD	723	759	1482	18060
CONCOURSE DRIVE	-	34078	34078	23089
PETERS CREEK ROAD TURNING LANES	-	3,958	3,958	220
AIRPORT ACCESS	-	50	50	98
VALLEYPARK COURT	-	6,427	6,427	225
TOTALS	35,485	75,115	110,492	65,266
ROOT MAT/TOPSOIL (CUT ONLY)			8028	
ROOT MAT/ TOPSOIL(TOTAL)			12,425	
USEABLE CUT			102,464	
SURPLUS (15% SHRINKAGE)			21,828	
PLAN QUANTITY				

## ESTIMATED QUANTITIES (CONT.)

PAY ITEM	PAY UNIT	VDOT PART.	OWNER PART.	TOTAL	TOTAL STAGE I
TRAFFIC LINE PAINTING 24" (TYPE B CLASS I)	LF	115	283	398	253
TRAFFIC LINE PAINTING 4" (TYPE B CLASS II)	LF	13460	19844	33304	20,336
GUARDRAIL STD. GR-2	LF	768	1846	2614	1067.5
RADIAL GUARDRAIL STD GR-2	LF	372	606	978	371.5
⊗ GUARDRAIL TERMINAL GR-7	EA	-	8	8	1
⊗ PAVEMENT DEMOLITION	SY	4650	2161	6811	6811
FENCE STD FE-CL	LF	-	538	538	538
CORNER BRACE STD FE-CL	EA	-	8	8	8
LINE BRACE STD FE-CL	EA	-	2	2	2
DOUBLE SWING GATE STD FE-CL	EA	-	1	1	1
STORM WATER DETENTION BASIN	LS	-	1	1	1
RELOCATION OF LOCALIZER BUILDING (EXCLUDING SITE WORK)	LS	-	1	1	1
⊗ OBSCURING OLD ROAD	UNIT	24	13	37	37
UTILITIES: FOR UTILITY ESTIMATED QUANTITIES, SEE SHEET 2.					

## INCIDENTALS

I-3 SERVICE ROADS ARE TO CONSTRUCTED, AND PRIVATE ENTRANCES CONNECTED THERETO PRIOR TO THE PERMANENT SEVERING OF PRIVATE ENTRANCES BY OTHER PHASES OF THE PROPOSED CONSTRUCTION.

I-5 THAT PORTION OF THE RIGHT OF WAY LYING WITHIN THE CLEAR ZONE OR WITHIN A MINIMUM OF 10 FEET FROM THE EDGE OF PAVEMENT OR SURFACING OR WITHIN THE LIMITS OF THE CONSTRUCTION SLOPES BEYOND 10 FEET, SHALL BE CLEARED AND GRUBBED IN ACCORDANCE WITH THE SPECIFICATIONS, SECTION 301.02, WHERE SUFFICIENT RIGHT OF WAY OR CONSTRUCTION EASEMENT IS PROVIDED.

I-9 WHEN NO CENTERLINE ALIGNMENT IS SHOWN FOR A PROPOSED ENTRANCE, THE ENTRANCE IS TO BE CONSTRUCTED IN THE SAME LOCATION AS THE EXISTING ENTRANCE.

I-12 STANDARD RM-2 RIGHT OF WAY MONUMENTS TO BE SET BY THE CONTRACTOR.

CARE MUST BE TAKEN DURING CONSTRUCTION TO PREVENT EROSION, DUST, AND MUD FROM DAMAGING ADJACENT PROPERTY, CLOGGING DITCHES, TRACKING PUBLIC STREETS AND OTHERWISE CREATING A PUBLIC OR PRIVATE NUISANCE TO SURROUNDING AREAS.

THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS PRIOR TO WORKING IN CITY OR COUNTY RIGHT OF WAY. ALL WORK SHALL BE AVAILABLE FOR INSPECTION BY THE CITY OF ROANOKE OR ROANOKE COUNTY.

## RELOCATION OF LOCALIZER BUILDING, RUNWAY 33

DRAWINGS AND SPECIFICATIONS FOR THE NEW LOCALIZER EQUIPMENT SHELTER HAVE BEEN PROVIDED BY THE FEDERAL AVIATION ADMINISTRATION (FAA) AND ARE INCLUDED IN THESE PLANS AND SPECIFICATIONS. THE RESPONSIBILITIES OF THE CONTRACTOR FOR THE RELOCATION OF THE LOCALIZER BUILDING ARE AS FOLLOWS:

PROVIDE ALL SITEWORK

PROVIDE NEW 8'X12' FIBERGLASS EQUIPMENT SHELTER  
CONSTRUCT FOUNDATIONS AND INSTALL NEW EQUIPMENT SHELTER

ADJUST EXISTING COAXIAL CABLES

PROVIDE POWER AND CONTROL SERVICE TO THE NEW SITE

REMOVE AND DISPOSE OF THE EXISTING BUILDING IN COORDINATION WITH LOCAL FAA OFFICIALS

ALL WORK RELATED TO THE RELOCATION OF THE LOCALIZER BUILDING SHALL BE COORDINATED WITH THE ROANOKE REGIONAL AIRPORT COMMISSION AND THE FEDERAL AVIATION ADMINISTRATION.

## MAINTENANCE OF TRAFFIC

DURING CONSTRUCTION ALL ROADS AND ENTRANCES WITHIN THE LIMITS OF THE PROJECT WILL BE KEPT OPEN TO ALL TRAFFIC. CONSTRUCTION SIGNS CHANGELIZING DEVICES, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES SHALL COMPLY WITH THE REQUIREMENTS OF THE VIRGINIA WORK AREA PROTECTION MANUAL DATED JANUARY 1987.

THE CONTRACTOR SHALL PREPARE A PLAN FOR THE MAINTENANCE OF TRAFFIC AND OBTAIN THE APPROVAL OF THE APPROPRIATE GOVERNING JURISDICTION PRIOR TO BEGINNING ANY WORK IN PUBLIC RIGHT OF WAY. THIRLANE ROAD AND PETERS CREEK ROAD (ROUTE 117) ARE UNDER THE JURISDICTION OF THE CITY OF ROANOKE. KENWORTH ROAD AND WOODHAVEN ROAD ARE IN ROANOKE COUNTY AND UNDER THE JURISDICTION OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION.

THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FOLLOWING ITEMS:

A. THE NEW ENTRANCE TO THE AIRPORT PROPERTY OFF THIRLANE ROAD MUST BE IN PLACE AND OPEN TO TRAFFIC PRIOR TO CLOSING THE EXISTING ENTRANCE.

B. LANE CLOSURES AND STOPPING OF TRAFFIC ON PETERS CREEK ROAD (ROUTE 117) WILL NOT BE ALLOWED ON WEEKDAYS BETWEEN THE HOURS OF 7 AM TO 9 AM AND 4 PM TO 6 PM, ON WEEKENDS BETWEEN 12 NOON FRIDAY AND 12:01 AM MONDAY, AND ON HOLIDAYS INCLUDING THE DAY BEFORE AND AFTER.

## EXISTING UTILITIES

IT SHOULD BE NOTED THAT UTILITIES (ELECTRICAL LINES, TELEPHONE CABLE, GAS LINES, SEWER LINES, ETC.) SHALL BE PROTECTED BY THE CONTRACTOR. THE LOCATIONS OF EXISTING PIPE LINES AND OTHER UTILITIES ARE SHOWN ON THE DRAWINGS AS ACCURATELY AS POSSIBLE FROM THE OWNER'S RECORDS AND MAPS, BUT THE LOCATIONS SHOWN ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS OF EXISTING UNDERGROUND PIPELINES AND OTHER UTILITIES INTERFERING WITH OR IN THE PROXIMITY OF NEW CONSTRUCTION PRIOR TO EXCAVATION, AND SHALL TAKE SUCH PRECAUTIONS AS ARE NECESSARY TO PREVENT DAMAGE OF THE UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR, AND REPAIR IMMEDIATELY, ANY DAMAGE TO EXISTING PIPELINES ENCOUNTERED WHETHER SHOWN ON THE DRAWINGS OR NOT, AND OTHER UNDERGROUND UTILITIES WITHOUT ADDITIONAL COST TO THE OWNER. IF DAMAGE IS DONE TO ANY UTILITIES, THE CONTRACTOR SHALL NOTIFY THE OWNER OR HIS REPRESENTATIVE IMMEDIATELY.

\* QUANTITY IS FOR ESTIMATING PURPOSES ONLY AND SUCH COST SHALL BE INCLUDED IN PRICE FOR CEMENT STABILIZED AGGREGATE MATERIAL NO.21A. HYDRAULIC CEMENT TONNAGE HAS BEEN INCLUDED IN THE QUANTITY FOR THE HYDRAULIC CEMENT STABILIZED AGGREGATE BASE MATERIAL.

⊗ DENOTES ITEM TO BE PAID FOR ON A BASIS OF PLAN QUANTITIES IN ACCORDANCE WITH CURRENT ROAD AND BRIDGE SPECIFICATIONS.

2	3/89	ESTIMATED QUANTITIES REVISED	LAP	JSH
1	11/88	ESTIMATED QUANTITIES REVISED	JLS	JSH
REVISION	DATE	DESCRIPTION	BY	APP
DESIGNED	JIN	LINGERFELT DEVELOPMENT CORPORATION VALLEYPONTE - PHASE I		
DRAWN	LAP			
CHECKED	JJA	ESTIMATED QUANTITIES & GENERAL NOTES		
APPROVED	JPB			
SUBMITTED	JPB			
HAYES, SEARY, MATTERN & MATTERN	SCALE	—	CONTR. NO.	5268B
ARCHITECTS ENGINEERS & PLANNERS	DATE	JUNE 1988	SHEET	2A