



* OVERFLOW TANKS:
EACH PUMP STATION TO BE CONNECTED WITH A 2000 GALLON OVERFLOW TANK BY A 4 INCH OVERFLOW LINE. INVERT OF OVERFLOW OUTLET FROM PUMP STATION TO BE 2 INCHES BELOW INLET INVERT. INLET PIPING FOR AND ACCESS TO THE OVERFLOW TANK TO BE THE SAME AS SHOWN ON THE PUMP STATION DETAIL. BOTTOM ELEVATION OF OVERFLOW TANK TO BE EQUAL TO OR LOWER THAN BOTTOM ELEVATION OF PUMP STATION TANK.

DESIGN DATA AND SPECIFICATIONS											
BUILDING NO. 1			BUILDING NO. 2			BUILDING NO. 3					
NO. UNITS (UNIT NUMBERS)	9(101 - 109)	9(110 - 118)	9(201 - 209)	9(210 - 218)	9(301 - 309)	9(310 - 318)					
NO. BEDROOMS	18	18	18	18	18	18					
DESIGN FLOW (GPD)	2700	2700	2700	2700	2700	2700					
SEPTIC TANKS - GALLONS	3-2000	3-2000	3-2000	3-2000	3-2000	3-2000					
REFERENCE - BOTTOM ELEV.	S1A - 820.8	S1D - 820.8	S2A - 824.8	S2D - 824.8	S3A - 811.8	S3D - 812.8					
	S1B - 820.8	S1E - 820.8	S2B - 824.8	S2E - 824.8	S3B - 812.8	S3E - 812.8					
	S1C - 820.8	S1F - 819.5	S2C - 824.8	S2F - 823.5	S3C - 812.8	S3F - 811.8					
PUMP STATION REFERENCE	P11	P12	P21	P22	P31	P32					
TANK SIZE (GALLONS)	2000	2000	2000	2000	2000	2000					
BOTTOM ELEV.	815.8	819.8	818.8	820.8	807.8	808.8					
PUMP DELIVERY (GPM)	54	57	55	56	54	55					
VELOCITY (FPS)	3.6	3.8	3.7	3.7	3.6	3.7					
TOTAL DYNAMIC HEAD (FT.)	31.5	26	30	28	45	43					
DISTRIBUTION BOXES	ALL 8 - HOLE BOXES EXCEPT FOR BOX D2C (10 - HOLE) 4 REQ'D. EACH SYSTEM										
REFERENCE - BOTTOM ELEV.	M11 - 840.6	M12 - 838.6	M21 - 840.6	M22 - 843.0	M31 - 843.0	M32 - 846.0					
	D1A - 840.5	D1D - 838.5	D2A - 840.5	D2D - 842.5	D3A - 841.5	D3D - 845.5					
	D1B - 839.5	D1E - 835.5	D2B - 839.5	D2E - 342.5	D3B - 842.5	D3E - 845.5					
	D1C - 837.5	D1F - 835.5	D2C - 836.5	D2F - 842.5	D3C - 841.5	D3F - 842.5					

FOR DRAIN FIELD DATA SEE BELOW

- NOTES TO DESIGN DATA AND SPECIFICATIONS:
- PUMPS: ZOELLER HIGH HEAD "FLOW MATE" SERIES E 163, & E 165, 230 VOLT, SINGLE PHASE, 1/2 HP & 1 HP EFFLUENT PUMPS, OR EQUAL. 2 EACH REQUIRED FOR EACH SYSTEM. SERIES E-163, BLDGS. 1 AND 2, AND SERIES E-165, BLDG. 3.
 - CONTROLS: GOULDS ALS-61 DUPLEX CONTROL WITH AUDIO VISUAL ALARM AND 3 ALS-2-3 MERCURY LEVEL CONTROL FLOAT SWITCHES (AUTOMATIC ALTERATION) OR EQUAL. CONTROL PANELS WITH AUDIO VISUAL ALARM TO BE MOUNTED ON EXTERIOR OF BUILDINGS IN SECURE PLEXIGLAS ENCLOSURES.
 - PIPING AND VALVES: ALL GRAVITY LINES AND FORCE MAINS OUTSIDE PUMP STATIONS TO BE SCHEDULE 40 P/C WITH WELDED SLEEVES (WATERTIGHT). PIPE AND FITTINGS INSIDE PUMP STATIONS TO BE SCHEDULE 40 GALVANIZED STEEL. PERCOLATION LINES TO BE ADS #402 (ADVANCED DRAINAGE SYSTEMS), ASTM F-481 OR EQUAL. CHECK VALVES TO BE ZOELLER 30-0015 OR EQUAL. PIPING SCHEDULE AS FOLLOWS:

	SIZE	MAX BEND	MIN SLOPE	MAX SLOPE
BUILDING SEWERS	4"	45°	1.04%	
CONVEYANCE LINES	4"	90°	0.5%	
FORCE MAINS	2 1/2"	90°		
GRAVITY HEADERS	4"	90°	0.2%	
PERCOLATION LINES	4"	0°	0.16%	0.33%
 - SET BACK DISTANCES FOR SEPTIC TANKS, PUMPING STATIONS, DISTRIBUTION BOXES, HEADER LINES AND DRAINFIELD TRENCHES FROM:

PROPERTY LINES	5'
BUILDING FOUNDATIONS	10'
LAKE WATER LINE (795 CONTOUR)	50'
UTILITY LINES	10'

 (ALL SETBACK DISTANCES HORIZONTAL)

GENERAL NOTES

- LOCATIONS OF DRAIN FIELDS, SEPTIC TANKS, PUMP STATIONS, PIPE LINES AND DISTRIBUTION BOXES ARE APPROXIMATE AND ARE SUBJECT TO MINOR ADJUSTMENTS DURING CONSTRUCTION. HOWEVER, SEPTIC TANKS, PUMP STATIONS AND DISTRIBUTION BOXES MUST BE SET AT THE ELEVATION SHOWN. ANY DEVIATIONS MUST BE APPROVED BY THE ENGINEER AND LOCAL HEALTH DEPARTMENT.
- ALL CONSTRUCTION OF THESE SEWERAGE SYSTEMS TO BE IN ACCORDANCE WITH STATE BOARD OF HEALTH SEWAGE HANDLING AND DISPOSAL REGULATIONS.
- HEAVY WHEELED VEHICLES ARE PROHIBITED FROM DRAINFIELD AREAS AFTER CONSTRUCTION.
- SEPTIC TANKS, DISTRIBUTION BOXES AND DRAINFIELD AREAS ARE TO BE CLEARLY MARKED FOR POST-CONSTRUCTION LANDSCAPING. LANDSCAPING EQUIPMENT IS NOT TO BE ALLOWED TO DRIVE DIRECTLY OVER THE DISTRIBUTION BOXES.
- EXCAVATING EQUIPMENT USED TO CONSTRUCT THE ABSORPTION TRENCHES IS TO BE OF A DESIGN SO AS NOT TO COMPACT THE TRENCH BOTTOM OR THE 13" SIDEWALL AREAS.
- FINAL SURFACES OF DRAINFIELD AREAS ARE TO BE GRADED TO DRAIN SUCH THAT SURFACE RUNOFF WILL NEITHER POND NOR FLOW IN CONCENTRATION OVER THE DRAINFIELD.
- BEDDING: ALL BUILDING SEWERS, GRAVITY CONVEYANCE PIPES, FORCE MAINS, AND GRAVITY HEADER PIPES ARE TO BE BEDDED TO PROVIDE UNIFORM SUPPORT THROUGHOUT.
- BACKFILLING AND TAMPING: TRENCHES FOR BUILDING SEWERS, GRAVITY CONVEYANCE PIPES, FORCE MAINS AND GRAVITY HEADER PIPES ARE TO BE BACK-FILLED WITH MATERIAL FREE OF LARGE STONES AND CLUMPS OF EARTH, AND TAMPED TO PREVENT MOVEMENT MOVEMENT OF PIPES AS SOON AS POSSIBLE AFTER ACCEPTANCE.
- DISTRIBUTION BOXES FOR ALL BUILDINGS TO BE PERMANENTLY LEVELED BY BONDING TO A 4" POURED-IN-PLACE CONCRETE PAD 6" WIDER THAN DISTRIBUTION BOX. KNOCKOUTS OPPOSITE INLETS ARE TO BE LEFT IN PLACE AND NOT USED FOR DRAIN LINES.
- ALL SEPTIC TANKS, PUMP CHAMBERS, AND DISTRIBUTION BOXES TO BE PRECAST CONCRETE CONFORMING WITH THE STATE BOARD OF HEALTH SEWAGE HANDLING AND DISPOSAL REGULATIONS.
- DRAINFIELD TRENCHES FOR EACH DRAINFIELD ARE TO BE INSTALLED WITHIN THE BOUNDARIES SHOWN ON THE SITE PLAN.
- THRUST BLOCKS REQUIRED AT ALL FITTED BENDS IN FORCE MAIN.
- ALL OF THE DRAIN FIELDS FOR THIS PHASE MUST BE STAKED OUT AND THEIR LOCATIONS APPROVED BY THE ENGINEER AND THE LOCAL HEALTH DEPARTMENT PRIOR TO THE INSTALLATION OF ANY DRAIN FIELD.
- BOUYANCY OF PUMP STATION AND OVERFLOW TANKS WITH 18 INCHES OF EARTH COVER, WHERE GROUND WATER LEVELS CAN BE EXPECTED TO EXCEED THE LEVELS SHOWN BELOW, THE TANKS SHOULD BE STABILIZED WITH ADDITIONAL WEIGHT (LEVELS SHOWN ARE IN FEET ABOVE TANK BOTTOM).

PUMP STATION TANK AT LOW LIQUID LEVEL	7.5'
OVERFLOW TANK EMPTY	6.2'

THE SEWERAGE SYSTEMS PLANS WERE DEVELOPED IN CONSULTATION WITH SOIL WASTE CONSULTANTS, INC., P.O. BOX 87, SALEM, VIRGINIA, WHO PROVIDED THE FOLLOWING:

- GENERAL LAYOUT OF THE SYSTEMS.
- LOCATION, SIZE AND DEPTHS OF DRAINFIELDS.
- DESIGN FLOWS AND SIZES FOR SEPTIC TANKS, PUMPING CHAMBERS, DISTRIBUTION BOXES AND GRAVITY SEWER LINES.

DRAIN FIELD DATA											
BUILDING NO. 1			BUILDING NO. 2			BUILDING NO. 3					
DRAIN FIELDS	3	3	3	3	3	3					
NUMBER REQ'D.	3	3	3	3	3	3					
PERCOLATION RATE (MIN/IN.)	30	30	30	30	30	30					
BOTTOM AREA (SF) - EACH	1566	1566	1566	1566	1566	1566					
NUMBER LINES X LENGTH (FT.) *	6 X 87	6 X 87	6 X 87	6 X 87	6 X 87	6 X 87					
REF. - BOTTOM ELEV. FIRST TRENCH	F1A - 839.0	F1D - 837.0	F2A - 839.0	F2D - 841.0	F3A - 840.0	F3D - 844.0					
	F1B - 838.0	F1E - 834.0	F2B - 838.0	F2E - 841.0	F3B - 841.0	F3E - 844.0					
	F1C - 836.0	F1F - 834.0	F2C - 835.0	F2F - 841.0	F3C - 840.0	F3F - 841.0					

TRENCHES

* DRAIN FIELD F2C - 9 LINES X 58 FEET

ALL TRENCHES 3 FEET WIDE X 9 FOOT SPACING

SEWERAGE SYSTEMS DETAILS FOR GANGPLANK POINTE SECTION 9, PHASE 11

GILLS CREEK MAGISTERIAL DISTRICT
FRANKLIN COUNTY, VIRGINIA
PROPERTY OF

GANGPLANK POINTE PARTNERSHIP

SCALE: 1" = 40' DATE: 30 MAY 1984

BUFORD T. LUMSDEN & ASSOCIATES, P.C.
ENGINEERS - SURVEYORS
ROANOKE, VIRGINIA

#22-342

SHEET #4