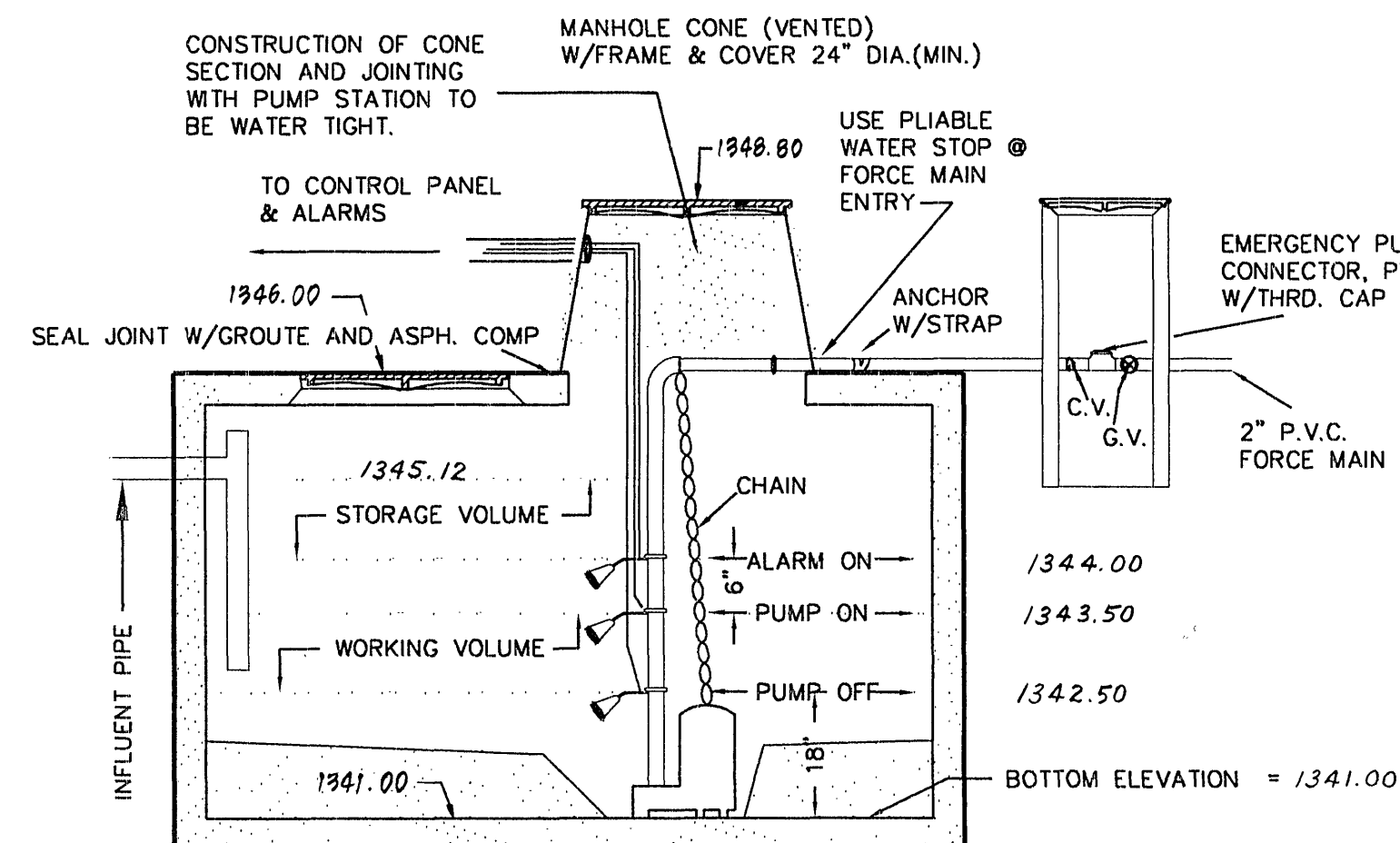
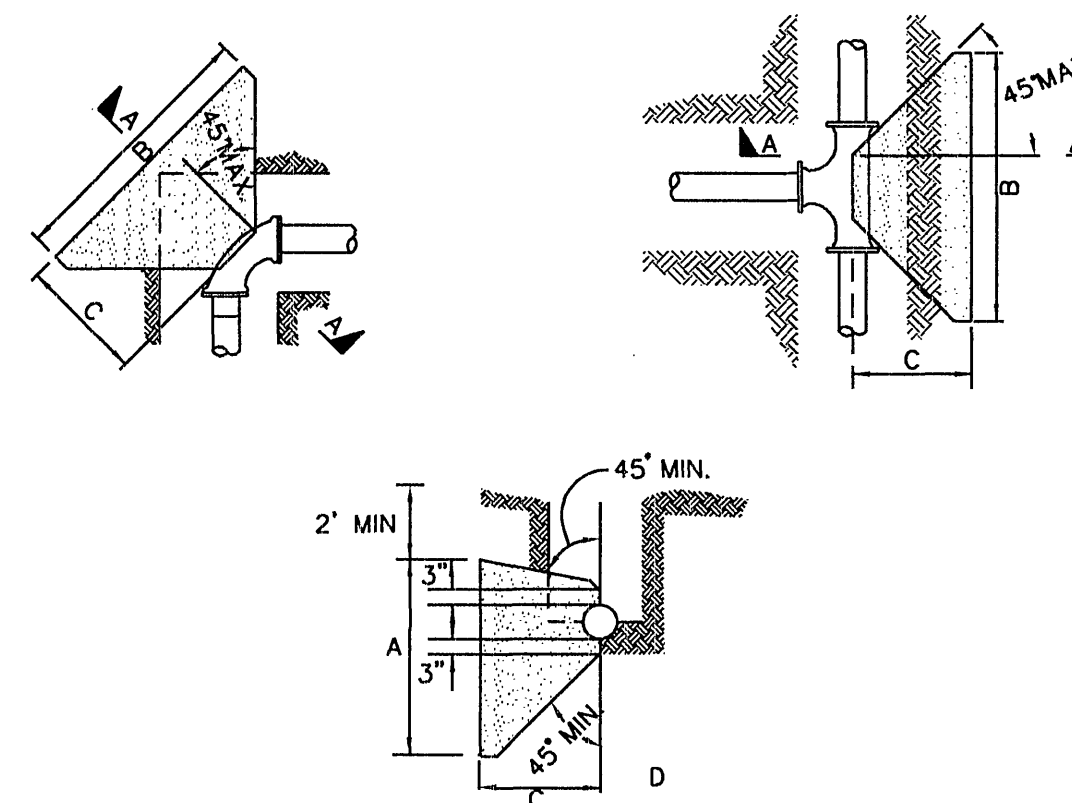


PLAN



SECTION
PUMP STATION

NOTE:
PLIABLE WATER STOPS MUST BE PROVIDED
AROUND ALL PIPES.



SECTION A-A

PIPE SIZE	TEE OR DEAD END			90° BEND			45° BEND			22.5° LESS BEND		
	A	B	C	A	B	C	A	B	C	A	B	C
6" OR LESS	1.2	3.0	1.0	1.5	3.3	2.0	1.2	2.3	1.0	1.2	2.0	1.0
8"	1.7	3.8	1.5	2.0	4.5	2.0	1.3	3.8	1.5	1.3	2.0	1.0
10"	2.0	4.9	2.0	3.0	4.7	2.0	1.7	4.5	2.0	1.5	2.8	1.5
12"	2.5	5.7	2.0	3.5	5.8	2.5	2.2	5.0	2.5	1.7	3.3	1.5
16"	3.5	7.0	3.0	4.5	8.0	3.5	3.0	6.5	3.0	2.5	4.0	2.0
24"							3.5	7.0	3.25	3.0	4.5	2.5

NOTES:

- THE ABOVE NOTED DIMENSIONS ARE MINIMUM BASED ON CONCRETE ANCHOR EXTENDING TO UNDISTURBED SOIL, LINE PRESSURE NOT TO EXCEED 150 PSI AND, MINIMUM SOIL BEARING CAPACITY OF 2500 PSF; UNSATISFACTORY SOIL BEARING OR EXCESS PRESSURE WILL REQUIRE ADDITIONAL DESIGN.
- CONCRETE SHALL NOT BE POURED ON JOINTS OR BOLTS.
- CONCRETE TO BE MINIMUM 3000 PSI - 28 DAY COMPRESSIVE STRENGTH.

THRUST BLOCK FOR HORIZONTAL
& LOWER VERTICAL BENDS

NOTES TO DESIGN DATA AND SPECIFICATIONS:

- PUMPS: A. GOULDS 3887 WS10BHF SUBMERSIBLE SEWAGE PUMPS - 240 VOLT - SINGLE PHASE - 1 HP
- CONTROLS: GOULDS A6 DUPLEX WITH AUDIO VISUAL ALARM, 4 EA. A2-3 MERCURY TYPE FLOAT SWITCHES OR EQUAL. THIS UNIT WILL BE MOUNTED ON PRESSURE TREATED WOOD STAND. THEREFORE, A COMPLETE NEMA111 ENCLOSURE MUST BE PROVIDED. AUTOMATIC ALTERNATION OF THE PUMPS FOR THE DUAL PUMP STATIONS SHALL BE PROVIDED.
- PIPING AND VALVES: ALL FORCE MAINS TO BE SCHEDULE 40 PVC WITH WELDED SLEEVES (WATERTIGHT) PIPE AND FITTINGS. CHECK VALVES ARE TO BE 2" BRONZE BODY CHECK VALVES. ALL FORCE MAINS PIPING SHALL BE TESTED TO 50 PSI FOR ONE HOUR WITH NO LEAKAGE PERMITTED.

GENERAL NOTES:

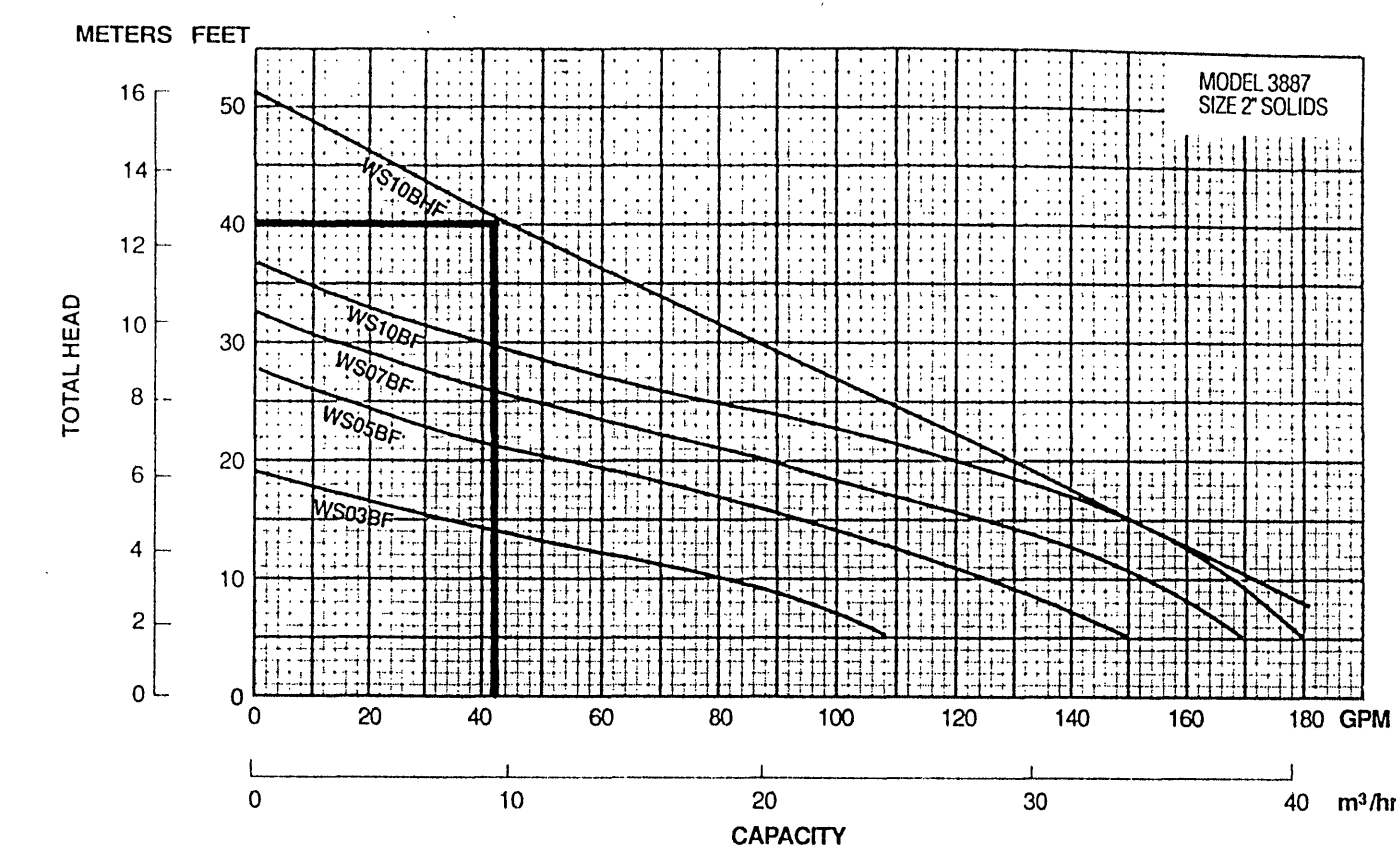
- ALL CONSTRUCTION OF THESE SEWERAGE SYSTEMS TO BE IN ACCORDANCE WITH STATE BOARD OF HEALTH SEWAGE HANDLING AND DISPOSAL REGULATIONS. EXCAVATION PRACTICES MUST FOLLOW OSHA REQUIREMENTS.
- ALL PUMP CHAMBERS ARE TO BE PRECAST CONCRETE CONFORMING WITH THE STATE BOARD OF HEALTH SEWAGE HANDLING AND DISPOSAL REGULATIONS.
- THRUST BLOCKS OR RESTRAINED JOINTS REQUIRED AT ALL FITTED BENDS IN FORCE MAIN.
- MANHOLE COVER OVER PUMP STATIONS TO BE VENTED.
- AUDIO - VISUAL ALARM MUST SIGNAL FAILURE OF EITHER PUMP TO START.

DESIGN INFORMATION:

STATIC HEAD	15.0 FT.
TOTAL DYNAMIC HEAD	40.0 FT.
FLOW RATE	41.0 GPM
FORCE MAIN VELOCITY	4.19 FT./SEC.
PUMP RUN TIME/CYCLE	9.5 MIN.
WORKING VOLUME	393 GAL
STORAGE VOLUME	393 GAL
PIPE DIAMETER	2 INCH
EQUIVALENT PIPE LENGTH	510.0 FT.
ROUGHNESS COEFFICIENT	120 (HAZEN-WILLIAMS)

Performance
Curves

Submersible
Sewage Pumps



REVISION	DATE	DESCRIPTION
DESIGNED	CAM	SEWER PUMP STATION FOR "HUNTING HILLS SUITES" PREPARED FOR BRANCH FAMILY LLC ROANOKE CITY VIRGINIA
DRAWN	CAM, RAG	
CHECKED	MSW	
LUMSDEN ASSOCIATES, P.C. ENGINEERS-SURVEYORS-PLANNERS ROANOKE, VIRGINIA		
SCALE: NONE		COMM: 97-191
DATE: 22 DEC. 1997		SHEET 8 of 8

